

Register list for 7 new names including Poseidoniales ord. nov.

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Table 1: Complete list of names proposed in the current register list.

| Proposed Taxon | Etymology | Description | Parent Taxon | Type | Registry URL |
|------------------------------|---|--|----------------------|-------------------|---|
| Class <i>Poseidoniiia</i> | [Po.se.i.do.ni'i.a] N.L. fem. n. <i>Poseidonia</i> , referring to the type genus <i>Poseidonia</i> ; <i>-ia</i> , ending to denote a class; N.L. neut. pl. n. <i>Poseidoniiia</i> , the <i>Poseidonia</i> class | The description is the same as for <i>Poseidonia</i> gen. nov. with the following additions; <i>Poseidoniiia</i> class. nov. comprises the type order <i>Poseidoniales</i> ord. nov. and order Marine group III (MGIII). | <i>Poseidoniota</i> | <i>Poseidonia</i> | seqco.de/i:41458 |
| Order <i>Poseidoniales</i> | [Po.se.i.do.ni.a'les] N.L. fem. n. <i>Poseidonia</i> , referring to the type genus <i>Poseidonia</i> ; <i>-ales</i> , ending to denote an order; N.L. fem. pl. n. <i>Poseidoniales</i> , the <i>Poseidonia</i> order | The description is the same as for <i>Candidatus Poseidonia</i> gen. nov. with the following additions; <i>-ales</i> ending to denote a order. <i>Candidatus Poseidoniales</i> ord. nov. was previously known as “Marine Group II” and comprises two families <i>Candidatus Poseidoniaceae</i> fam. nov. and <i>Candidatus Thalassarchaeaceae</i> fam. nov. | <i>Poseidoniiia</i> | <i>Poseidonia</i> | seqco.de/i:41459 |
| Family <i>Poseidoniaceae</i> | [Po.se.i.do.ni.a'ce.ae] N.L. fem. n. <i>Poseidonia</i> , referring to the type genus <i>Poseidonia</i> ; <i>-aceae</i> , ending to denote a family; N.L. fem. pl. n. <i>Poseidoniaceae</i> , the <i>Poseidonia</i> family | The description is the same as for <i>Poseidonia</i> gen. nov. with the following additions. <i>Poseidoniaceae</i> fam. nov. was previously known as and “ Group II-α ” and “ Marine Group IIa ”. Eleven genus-level clades I, J1, J2, J3, K1, K2, L1, L2, L3, L4, and <i>Poseidonia</i> (M) representing the rank of genera were assigned to this family. All members of the family were inferred to be marine, motile heterotrophs, encoding phototrophic and non-phototrophic lifestyles with a distribution from surface waters to the deep sea (1m-500m). Type genus: <i>Poseidonia</i> gen. nov. | <i>Poseidoniales</i> | <i>Poseidonia</i> | seqco.de/i:41476 |

| Proposed Taxon | Etymology | Description | Parent Taxon | Type | Registry URL |
|--|--|--|---------------------------|--|---|
| Family <i>Thalassarchaeaceae</i> | [Tha.las.sar.chae.a'ce.ae] N.L. neut. n. <i>Thalassarchaeum</i> , referring to the type genus <i>Thalassarchaeum</i> ; <i>-aceae</i> , ending to denote a family; N.L. fem. pl. n. <i>Thalassarchaeaceae</i> , the <i>Thalassarchaeum</i> family | <i>Thalassarchaeaceae</i> fam. nov. formerly Marine Group II (MGII) subgroup b, also known as MGIIb, is a family of the globally abundant marine order Poseidoniales. | <i>Poseidoniales</i> | <i>Thalassarchaeum</i> | seqco.de/i:41460 |
| Genus <i>Thalassarchaeum</i> | [Tha.las.sar.chae'um] Gr. fem. n. <i>thalassa</i> , the sea; also the primeval spirit of the sea; ; N.L. neut. n. <i>archaeum</i> , (from Gr. adj. <i>archaios</i> -ê -on, ancient) <i>archaeon</i> ; N.L. neut. n. <i>Thalassarchaeum</i> , the <i>archaeon</i> from the sea | <i>Thalassarchaeum</i> the <i>archaeon</i> from the sea. Inferred to be of marine origin, representing non-motile, aerobic heterotrophs containing phototrophic and non-phototrophic members. Formerly identified as clade O and now as genus O4 (this study). This genus name is proposed for continuity with the orthographically incorrect " <i>Thalassoarchaea</i> " suggested by [10.1038/ismej.2014.249] for low GC MGIIb fosmid-genomes. Type species: <i>Thalassarchaeum betae</i> . | <i>Thalassarchaeaceae</i> | <i>Thalassarchaeum betae</i> ^{Ts} | seqco.de/i:41473 |
| Genus <i>Poseidonia</i> | [Po.se.i.do'ni.a] N.L. fem. n. <i>Poseidonia</i> , named after Poseidon, the Greek god of the sea | <i>Poseidonia</i> named after Poseidon, the Greek god of the sea. Inferred to be of marine origin, a motile, aerobic, photoheterotroph, and able to ferment a wide range of carbohydrates with a focus on peptides. Highest abundances were recorded for surface waters (0-10m). Formerly identified as clade M . | <i>Poseidoniaceae</i> | <i>Poseidonia alphae</i> ^{Ts} | seqco.de/i:39404 |
| Species <i>Poseidonia alphae</i> ^{Ts} | [alphae] N.L. gen. n. <i>alphae</i> , alpha, the first letter of Greek alphabet; to honour the original description of this group as II-α | <i>Poseidonia</i> named after Poseidon, the Greek god of the sea). Inferred to be of marine origin, a motile, aerobic, photoheterotroph, and able to ferment a wide range of carbohydrates with a focus on peptides. Highest abundances were recorded for surface waters (0-10m). | <i>Poseidonia</i> | NCBI Assembly: GCA_002505405.1 ^{Ts} | seqco.de/i:41495 |
| Species <i>Thalassarchaeum betae</i> ^{Ts} | [be'tae] N.L. gen. n. <i>betae</i> , the second letter for the Greek alphabet; named to honour the original description of this group as II-β | Description is the same as for <i>Candidatus Thalassarchaeum</i> gen. nov. Represented by the MAG (metagenome-assembled genome) GCA_003193925.1 (former ID: PSPG000000000) with a genome size of 1.48 Mbp; obtained from metagenomic sequences retrieved from water deep sea water sample (1953 to 4946m) from the Mid-Cayman Rise, in western Caribbean Sea (18.32 N, 81.43 W). | <i>Thalassarchaeum</i> | NCBI Assembly: GCA_003193925.1 ^{Ts} | seqco.de/i:44377 |

