Register list for 7 new names including Methanoflorens stordalenmirensis sp. nov. gen. 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
Order *Methanoflorentales*	[Me.tha.no.flo.ren.ta'les] **N.L. masc. n.** *Methanoflorens*, a genus; *-ales*, ending to denote an order; **N.L. fem. pl. n.** *Methanoflorentales*, the Methanoflorens order	**Woodcroft et al., 2018 (with modifications):** The description is the same as given for the type genus *Methanoflorens* and the family *Methanoflorentaceae* Mondav et al. (2014) with the following modifications. The delineation of the order is determined by phylogenetic analyses showing that the *Methanocellales* would otherwise be paraphyletic. The order currently comprises two species *M. stordalenmirensis* and *M. crillii*. The type genus is *Methanoflorens*. Methane producing organisms linked to be key mediators of methane-based positive feedback to climate warming. Represented by microbial population from permafrost. Previously known as the uncultivated lineage 'Rice Cluster II'	*Methanomicrobia*	*Methanoflorens*	seqco.de/i:32194
Family *Methanoflorentaceae*	[Me.tha.no.flo.ren.ta'ce.ae] **N.L. masc. n.** *Methanoflorens*, referring to the type genus Methanoflorens; *-aceae*, ending to denote a family; **N.L. fem. pl. n.** *Methanoflorentaceae*, the Methanoflorens family	The description is the same as that of the sole genus *Methanoflorens*.	*Methanoflorentales*	*Methanoflorens*	seqco.de/i:32553

Proposed Taxon	Etymology	Description	Parent Taxon	Type	Registry URL
Genus *Acidiflorens*	[A.ci.di.flo'rens] **L. neut. adj.** *acidum*, an acid; **L. pres. part.** *florens*, flourishing; **N.L. masc. n.** *Acidiflorens*, an organism that blooms in acid	The description is the same as that of the sole species: *Acidiflorens stordalenmirensis*.	*Acidobacteriaceae*	*Acidiflorens stordalenmirensis*[Ts]	seqco.de/i:32199
Genus *Methanoflorens*	[Me.tha.no.flo'rens] **N.L. pref.** *methano-*, pertaining to methane; **L. pres. part.** *florens*, blooming, abundant; **N.L. masc. n.** *Methanoflorens*, an abundant methane-producing organism	Established by Mondav et al. (2014) on the basis of 16S rRNA and genome-based phylogenetic reconstruction including only *M. stordalenmirensis*, and expanded by Woodcroft et al. (2018) to also include *M. crillii*. Corresponding to g__Bog-38 in GTDB.	*Methanoflorentaceae*	*Methanoflorens stordalenmirensis*[Ts]	seqco.de/i:32552
Species *Acidiflorens stordalenmirensis*[Ts]	[stor.da.len.mi.ren'sis] **N.L. masc. adj.** *stordalenmirensis*, of or belonging to Stordalen Mire, Sweden, where the species was characterized	**Woodcroft et al., 2018:** Phylogenetic analyses of genes/markers indicated that this species is different from all other recognized genera in the family Acidobacteriaceae.	*Acidiflorens*	NCBI Assembly: GCA_003139995.1 [Ts]	seqco.de/i:32242
Species *Methanoflorens crillii*	[cril'li.i] **N.L. gen. n.** *crillii*, named after Patrick Crill, Stockholm University, Sweden, in recognition of his work on understanding of biogeochemical processes at the landscape scale (thawing permafrost) including greenhouse gases emission under the impact of climate change	**Woodcroft et al., 2018 (with modifications):** The description is as provided by Mondav et al. (2014) for the genus with the following additional properties. The species can be differentiated from the recognized *Methanoflorens stordalenmirensis* on the basis of phylogenetic analyses showing them to be monophyletic and sufficiently distinct average amino acid identity between encoded proteins.	*Methanoflorens*	NCBI Assembly: GCA_003162175.1 [Ts]	seqco.de/i:32551
Species *Methanoflorens stordalenmirensis*[Ts]	[stor.da.len.mir.en'sis] **N.L. masc. adj.** *stordalenmirensis*, of or belonging to Stordalen Mire, Sweden from where the species was characterised	Established by Mondav et al. (2014) on the basis of phylogenetic reconstruction, and observed to be in high abundance in thawing permafrost.	*Methanoflorens*	NCBI Assembly: GCA_003139855.1 [Ts]	seqco.de/i:49938