# Register list for 7 new names including Methanoflorens stordalenmirensis sp. nov. gen. nov.

**Submitted by Rodriguez-R, Luis M**

## Order *Methanoflorentales*

**Etymology**
[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

**Nomenclatural type**
Genus *Methanoflorens*

**Description**
**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'

**Classification**
*Archaea* » *Methanobacteriota* » “Methanomicrobia” » *Methanoflorentales*

**References**
Effective publication: Woodcroft et al., 2018 [1]
Assigned taxonomically: Woodcroft et al., 2018 [1]

**Registry URL**
https://seqco.de/i:32194

## Family *Methanoflorentaceae*

**Etymology**
[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

**Nomenclatural type**
Genus *Methanoflorens*

**Description**
The description is the same as that of the sole genus *Methanoflorens*.

**Classification**
*Archaea* » *Methanobacteriota* » “Methanomicrobia” » *Methanoflorentales* » *Methanoflorentaceae*

**References**
Effective publication: Woodcroft et al., 2018 [1]
Assigned taxonomically: Woodcroft et al., 2018 [1]

**Registry URL**
https://seqco.de/i:32553

## Genus *Acidiflorens*

**Etymology**
[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

**Nomenclatural type**
Species *Acidiflorens stordalenmirensis*[Ts]

**Description**
The description is the same as that of the sole species: *Acidiflorens stordalenmirensis*.

**Classification**
*Bacteria* » *Acidobacteriota* » *Terriglobia* » *Terriglobales* » *Acidobacteriaceae* » *Acidiflorens*

**References**
Effective publication: Woodcroft et al., 2018 [1]
Assigned taxonomically: Woodcroft et al., 2018 [1]

**Registry URL**
https://seqco.de/i:32199

## Genus *Methanoflorens*

**Etymology**
[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

**Nomenclatural type**
Species *Methanoflorens stordalenmirensis*[Ts]

**Description**
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.

**Classification**
*Archaea* » *Methanobacteriota* » “Methanomicrobia” » *Methanoflorentales* » *Methanoflorentaceae* » *Methanoflorens*

**References**
Effective publication: Woodcroft et al., 2018 [1]
Original (not valid) publication: Mondav et al., 2014 [2]
Assigned taxonomically: Mondav et al., 2014 [2]

**Registry URL**
https://seqco.de/i:32552

## Species *Acidiflorens stordalenmirensis*[Ts]

**Etymology**
[stor.da.len.mi.ren'sis] **N.L. masc. adj.** *stordalenmirensis*, of or belonging to Stordalen Mire, Sweden, where the species was characterized

**Nomenclatural type**
NCBI Assembly: GCA_003139995.1 [Ts]

**Description**
**Woodcroft et al., 2018:** Phylogenetic analyses of genes/markers indicated that this species is different from all other recognized genera in the family Acidobacteriaceae.

**Classification**
*Bacteria* » *Acidobacteriota* » *Terriglobia* » *Terriglobales* » *Acidobacteriaceae* » *Acidiflorens* » *Acidiflorens stordalenmirensis*[Ts]

**References**
Effective publication: Woodcroft et al., 2018 [1]
Assigned taxonomically: Woodcroft et al., 2018 [1]

**Registry URL**
https://seqco.de/i:32242

## Species *Methanoflorens crillii*

**Etymology**
[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

**Nomenclatural type**
NCBI Assembly: GCA_003162175.1 [Ts]

**Description**
**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.

**Classification**
*Archaea* » *Methanobacteriota* » “Methanomicrobia” » *Methanoflorentales* » *Methanoflorentaceae* » *Methanoflorens* » *Methanoflorens crillii*

**References**
Effective publication: Woodcroft et al., 2018 [1]
Assigned taxonomically: Woodcroft et al., 2018 [1]

**Registry URL**
https://seqco.de/i:32551

## Species *Methanoflorens stordalenmirensis*[Ts]

**Etymology**
[stor.da.len.mir.en'sis] **N.L. masc. adj.** *stordalenmirensis*, of or belonging to Stordalen Mire, Sweden from where the species was characterised

**Nomenclatural type**
NCBI Assembly: GCA_003139855.1 [Ts]

**Description**
Established by Mondav et al. (2014) on the basis of phylogenetic reconstruction, and observed to be in high abundance in thawing permafrost.

**Classification**
*Archaea* » *Methanobacteriota* » "Methanomicrobia" » *Methanoflorentales* » *Methanoflorentaceae* » *Methanoflorens* » *Methanoflorens stordalenmirensis*[Ts]

**References**
Effective publication: Woodcroft et al., 2018 [1]
Original (not valid) publication: Mondav et al., 2014 [2]

**Registry URL**
https://seqco.de/i:49938

## References

1. Woodcroft et al. (2018). Genome-centric view of carbon processing in thawing permafrost. *Nature*. DOI:10.1038/s41586-018-0338-1
2. Mondav et al. (2014). Discovery of a novel methanogen prevalent in thawing permafrost. *Nature Communications*. DOI:10.1038/ncomms4212

## Register List Certificate of Validation

On behalf of the *Committee on the Systematics of Prokaryotes Described from Sequence Data* (SeqCode Committee), we hereby certify that the Register List **seqco.de/r:cm4dpqa7** submitted by **Rodriguez-R, Luis M** and including 7 new names has been successfully validated.

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