

***Decussiphycus* gen. nov.: a validation of “*Decussata*” (R.M.Patrick) Lange-Bertalot (Mastogloiaceae, Bacillariophyta)**

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As per Article 20.2 of the ICN (Shenzhen Code; Turland *et al.* 2018: 20), “The name of a genus may not coincide with a Latin technical term in use in morphology at the time of publication unless it was published before 1 January 1912 ...”

With reference to the application of the above Article, a potential example of such a name has come to the attention of the first author recently while processing names for *AlgaeBase*.

“*Decussata* (R.M.Patrick) Lange-Bertalot” (Lange-Bertalot 2000: 670), intended as a new diatom genus name, was not validly published (Art. 20.2, Ex. 4) as it was coined from a Latin technical term, namely *decussatus*, -a, -um (adj. A) meaning “in pairs that alternately cross each other at right angles” (Stearn 1992: 397).

We here replace “*Decussata*” with a new genus name and make the necessary new combinations at the ranks of species and variety, as follows.

***Decussiphycus* Guiry & Gandhi, gen. nov.**

Replaced name: *Decussata* (R.M.Patrick) Lange-Bertalot, 2000, *inval.*

Description: Cells living solitarily, mostly observed in valve view since in girdle view narrowly rectangular and under light microscopy with or without poor diagnostic significance. Valves broadly elliptic or linear tapering to the cuneate obtusely to broadly rounded or rostrate ends. Valve face flat, valve mantle narrow. Central raphe system generally as in *Navicula* but modified in detail, less complicated. Valve outside: Central raphe endings expanded to deflected drop-like central pores. Terminal fissures at both poles asymmetrically overlapped by a silica fold. Areolae with foramina circular in shape outside, arranged essentially by three systems of striae, which cross each other in angles of 60-80° forming a regular quincunx pattern. Valve inside: Alveoli and areolae pattern similar as outside. Internal raphe fissure running straight in a distinct raphe sternum, ending in larger helictoglossae at the poles and much smaller though somewhat helictoglossa-like silica accumulations at the central nodule. Oblique costae of the quincunx system at least in the central parts with a moderately higher relief than the transapical costae (modified from Lange-Bertalot 2000: 670).

Type: ***Decussiphycus placenta*** (Ehrenberg) Guiry & Gandhi, *comb. nov.* Basionym: *Navicula placenta* Ehrenberg, *Mikrogeologie. Atlas* pl. 33: fig. 23, 1854 [Seemingly originally first introduced without a written description, but validated by analytical figures; ICN Art. 38.7.]

Decussiphycus placenta* var. *obtusus (F.Meister) Guiry & Gandhi, *comb. nov.* Basionym: *Navicula placenta* var. *obtusus* F.Meister, *Kieselalgen aus Asien*, p. 37, fig. 99, 1932.

Decussiphycus hexagonus (Torka) Guiry & Gandhi, *comb. nov.* Basionym: *Navicula hexagona* Torka, *Hedwigia* 73: 27, fig. 2, 1933.

Since the epithet *placenta* is a feminine noun in apposition, it retains its feminine gender regardless of the gender of the genus name.

Navicula placenta var. *minor* Krasske, 1923 [= *N. placenta* var. *minor* (Krasske) F.W.Mills 1934] and *N. placenta* var. *parallela* Krasske, 1925 [= *N. placenta* f. *parallela* (Krasske) Hustedt 1962]

were included in synonymy by Lange-Bertalot (2000, 2001) and Kulikovskiy *et al.* (2016) with *Decussa hexagona*, and new combinations are thus not required.

Both species are uncommon in samples from oligotrophic reservoirs with low mineralization, streams, and on aquatic mosses (Kulikovskiy *et al.* 2016).

There are more than 160 validly published generic names in *Index Nominum Genericorum* having the ending “-*phycus*”. It should be noted that compound names ending in *-phycus* (φύκος, *phykos*), which ought to be neuter, are treated as masculine in accordance with tradition [ICN Art. 62.2(c)].

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