

Transfer of some recently described *Orthoseira* species to the genera *Liparogyra* and *Aerophilina* (*Liparogyraceae*, *Bacillariophyceae*)

Amelia A. Vouilloud¹ & José M. Guerrero¹

¹División Ficología “Dr. Sebastián A. Guarrera”, Museo de La Plata, Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata, Paseo del Bosque s/n, B1900FWA, La Plata, Argentina (correspondence: avouilloud@fcnym.unlp.edu.ar)

The genus *Orthoseira* Thwaites (1848: 167) has a long and entangled nomenclatural history. Danz & al. (2022), in a detailed historical overview, showed that centrally-placed processes named carinoportulae, the most distinctive feature of the genus, are lacking in the generitype *O. americana* (Kützinger) Round, R.M.Crawford & D.G.Mann ex Spaulding & Kociolek (1998: 391) [= *Melosira americana* Kützinger (1844: 55)]. The absence of this character challenged the generic concept (i.e. *Orthoseira sensu* Round & al. 1990 and Houk 1993). In a more recent contribution, Danz & al. (2024) presented a detailed morphology-based phylogenetic analysis of the *Orthoseiraceae* and proposed that species formerly assigned in *Orthoseira* should be accommodated in three different genera, a new genus, *Aerophilina* Danz, Van de Vijver & Kociolek (in Danz & al. 2024: 15), and two reinstated genera: *Liparogyra* Ehrenberg (1848: 217) and *Stephanosira* Ehrenberg (1848: 217). However, in between submission and acceptance of the Danz & al. manuscript four new species of *Orthoseira* were described, and were, of course, not included by Danz & al. (2024).

According to the new classification adopted for the family, we propose new combinations for these recently created *Orthoseira* species, assigning them to two of the genera proposed by Danz & al. (2024): *Orthoseira helvetica* Peszek, C.T. Robinson, M. Rybak & Kawecka (2023: 79) and *O. iserentantii* Kochman-Kędziora & Van de Vijver (2024: 118) are transferred to the genus *Aerophilina* due to the presence of ridges along the valve margin, whereas *O. papuensis* Kochman-Kędziora & Van de Vijver (2024: 118) and *O. variabilis* Cefarelli, Guerrero & Vouilloud (in Cefarelli & al. 2024: 39) as they bear conical marginal spines and internal etchings between the carinoportulae, are referred to *Liparogyra*.

Aerophilina helvetica (Peszek, C.T.Robinson, M.Rybak & Kawecka) Vouilloud & Guerrero, *comb. nov.*

Basionym: *Orthoseira helvetica* Peszek, C.T.Robinson, M.Rybak & Kawecka *Diatom Research* 38: 79, figs 1–51, 2023.

Registration: <http://phycobank.org/106293>

Aerophilina iserentantii (Kochman-Kędziora & Van de Vijver) Guerrero & Vouilloud, *comb. nov.*

Basionym: *Orthoseira iserentantii* Kochman-Kędziora & Van de Vijver, *Plant Ecology and Evolution* 157: 118, fig. 3, 2024.

Registration: <http://phycobank.org/106294>

Liparogyra papuensis (Kochman-Kędziora & Van de Vijver) Guerrero & Vouilloud, *comb. nov.*

Basionym: *Orthoseira papuensis* Kochman-Kędziora & Van de Vijver, *Plant Ecology and Evolution* 157: 118, fig. 4, 2024.

Registration: <http://phycobank.org/106295>

Liparogyra variabilis (Cefarelli, Guerrero & Vouilloud) Guerrero & Vouilloud, *comb. nov.*

Basionym: *Orthoseira variabilis* Cefarelli, Guerrero & Vouilloud in Cefarelli & al., *Phytotaxa* 655: 39, figs 2–94, 2024.

Registration: <http://phycobank.org/106296>

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