

Nomenclatural changes for freshwater algae reported from Britain and Ireland

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The second edition of the ‘Freshwater Algal Flora of the British Isles’ (John & al. 2011) is a much expanded and updated version of the first edition (John & al. 2002). The second edition will be reprinted this year (2021), but since its publication there have been considerable advances in our understanding of algal diversity and phylogenetic relationships thanks in part to molecular investigations involving the analysis of DNA sequence data and a reassessment of characters used to define many genera and species. Necessary combinations and validations of some names have been identified in the preparation of a list of updated names (John & al. in preparation) and are made below. “ICN” refers to the International Code of Nomenclature (Turland & al. 2018).

Heteroleibleinia willei (Setchell & N.L.Gardner) Guiry & D.M.John, *comb. nov.*

Basionym: *Lyngbya willei* Setchell & N.L.Gardner [in Gardner], *University of California Publications in Botany* Vol. 6: 468. 1918. Replaced name: *Lyngbya epiphytica* Wille, 1913: 25, pl. I: figs. 14–17, [non *Lyngbya epiphytica* Hieronymus in Kirchner, 1898]. ≡ *Lyngbya nordgaardii* Wille, 1919: 32, *nom. illeg.* ≡ *Leibleinia nordgaardii* Anagnostidis & Komárek 1988: 395, *nom. illeg.* ≡ *Heteroleibleinia epiphytica* Komárek [in Anagnostidis], 2001: 374, *nom. illeg.*

Note: *Lyngbya epiphytica* Wille (Wille 1913) is illegitimate (priority for *Lyngbya epiphytica* Hieronymus [in Kirchner] 1898) and was replaced by *Lyngbya willei* Setchell & N.L.Gardner (1918: 468), which is the earliest available valid and legitimate name. Several post-1918 attempts to provide a legitimate name for the taxon were rendered illegitimate by the prior existence of *Lyngbya willei* Setchell & N.L.Gardner

Chara virgata* var. *barbata (Ganterer) Raam ex Guiry & D.M.John, *comb. nov.*

Basionym: *Chara fragilis* subsp. *barbata* Ganterer, *Die Bisher Bekannten österreichischen Charen*, 1847: 20, pl. II: fig. XV a, b [as “*δ barbata*”]

Note: The *Chara virgata* var. *barbata* was introduced by Joop C. van Raam (1941–2011) on a 2010 CD as an article entitled “*Wood's ‘Synopsis of the Characeae’ adapted and modified.*” The author anticipated formal publication but died in the following year. The name was invalid as a CD does not constitute effective publication (ICN Arts 29.1, 30.1), and was not subsequently validated until now.

Nitella flexilis* f. *spanioclema (J.Groves & Bullock-Webster) Raam ex Guiry & D.M.John, *comb. nov.*

Basionym: *Nitella spanioclema* J.Groves & Bullock-Webster [in Bullock-Webster], *Journal of Botany, British and Foreign* 57: 1, pl. 551. 1919.

Note: The basionym appeared at the beginning of the *Journal of Botany, British and Foreign* Vol. 57 and at the beginning of *The Irish Naturalist* Vol. 28 with identical text and plate. Both apparently appeared in January 1919 and priority of effective publication does not appear to have been established. We have assumed that the *Journal of Botany, British and Foreign* version was first to appear. See note above on the validity of names in van Raam (2010).

Chlorellales Bold & M.J.Wynne ex Guiry, *ord. nov.*

Description: Bold & Wynne, *Introduction to the Algae. Structure and reproduction*, Ed. 1, 1978: 133. Type: *Chlorella* Beyerinck [Beijerinck], 1890, *nom. cons.*

Note: The ordinal name *Chlorellales* Bold & M.J.Wynne was introduced in a textbook (Bold & Wynne 1978) without the Latin description required by ICN Art. 44.1 between 1 January 1958 and 31 December 2011. The order is currently recognised as including the families *Chlorellaceae*, *Eremosphaeraceae*, *Leptosiraceae* and *Oocystaceae* together with two genera, *Ankistrodesmopsis* and *Picochlorum*, both of uncertain familial placement (see Guiry & Guiry 2021).

Pseudostaurastrum limneticum (Borge) Guiry, *comb. nov.*

Basionym: *Tetraëdron limneticum* Borge, *Botaniska Notiser* 1900: 5, pl. 1: fig. 2. 1906.

Note: This combination is attributed either to Chodat (1921: 304–305) who, although he described the genus, did not mention this name, or to Couté & Rousselin (1975: 81) who implied the name but did not validate it: “*Il nous semble préférable de ranger cette espèce et ses variétés parmi les Xanthophycées du genre Pseudostaurastrum plutôt que de la conserver dans le genre Tetraëdron.*” [It seems to us preferable to classify this species and its varieties amongst the Xanthophyceae of the genus *Pseudostaurastrum* rather than to keep it in the genus *Tetraëdron*.]. The genus *Pseudostaurastrum* is currently included in the *Eustigmatophyceae* (Eliás & al. 2017).

Pseudostaurastrum limneticum* var. *minus (C.-C.Jao) Couté & Rousselin ex Guiry

Basionym: *Tetraëdron limneticum* var. *minus* C.-C.Jao, *Botanical Bulletin of Academia Sinica* Vol. 1: 251, fig. 3 b. 1947.

Note: While this variety has not previously been reported from Britain and Ireland, it was invalid when first proposed (the type variety was invalid) but also there was not a full and direct reference to the place of publication of the supposed basionym.

- Anagnostidis, K. (2001). Nomenclatural changes in cyanoprokaryotic order Oscillatoriales. *Preslia, Praha* 73: 359–375.
- Anagnostidis, K. & Komárek, J. (1988). Modern approach to the classification system of cyanophytes. 3. Oscillatoriales. *Archiv für Hydrobiologie, Supplement* 80: 327–472, 35 figs, 13 tables.
- Beyerinck [Beijerinck], M.W. (1890). Culturversuche mit Zoochlorellen, Lichenengonidien und anderen niederen Algen. *Botanische Zeitung* 47: 725–739, 741–754, 757–768, 781–785.
- Bold, H.C. & Wynne, M.J. (1978). *Introduction to the Algae. Structure and reproduction*. pp. [i]–xiv, 1–706. Englewood Cliffs, New Jersey: Prentice Hall, Inc.
- Borge, O. (1906). [Andersson, O.F.] Schwedisches Süßwassersplankton. *Botaniska Notiser* 1900: 1–26, 1 pl.
- Couté A. & Rousselin G. (1975). Contribution à l'étude des algues d'eau douce du Moyen Niger (Mali). *Bulletin du Muséum National d'Histoire Naturelle 3e Série (Botanique)* 21(277): 73–175, 19 pls.
- Eliás, M., Amaral, R., Fawley, K.P., Fawley, M.W., Nemcová, Y., Neustupa, J., Pribyl, P., Santos, L.M.A. & Sevcíková, T. (2017). Eustigmatophyceae. In: *Handbook of the Protists*. (Archibald, J.M., Simpson, A.G.B. & Slamovits, C.H., Neustupa, J., Eds) Heidelberg: Springer International Publishing AG.
- Ganterer, U. (1847). *Die Bisher Bekannten österreichischen Charen: von morphologischen Standpunkte*. pp. [1]–21, 2 pl. Wien [Vienna]: Verlag der Carl Haeus'schers Buchhandlung.
- Gardner, N.L. (1918). New Pacific coast marine algae III. *University of California Publications in Botany* 6: 455–486, pls 38–41.
- Guiry, M.D. & Guiry, G.M. 2021. *AlgaeBase*. World-wide electronic publication, National University of Ireland, Galway. <https://www.algaebase.org>; searched on 25 May 2021.
- Jao, C.-C. (1947). Studies on the freshwater algae of China. XVI. Protococcales from Kwangsi. *Botanical Bulletin of Academia Sinica* 1: 243–254, 3 figs.
- John, D.M., Whitton, B.A. & Brook, A.J., Eds (2002). *The freshwater algal flora of the British*



- Isles. An identification guide to freshwater and terrestrial algae.* pp. xii, 1–702. Cambridge: Cambridge University Press.
- John, D.M., Whitton, B.A. & Brook, A.J., Eds (2011). *The freshwater algal flora of the British Isles. An identification guide to freshwater and terrestrial algae.* Second edition. pp. i–xvii, [1]–878. Cambridge: Cambridge University Press.
- Kirchner, O. (1898). Schizophyceae. In: *Die natürlichen Pflanzenfamilien ... I. Teil, Abt. 1a.* (Engler, A. & Prantl, K. Eds), pp. 45–92. Leipzig: Wilhelm Engelmann.
- Raam, J.C van (2010). *R.D. Wood's "Synopsis of the Characeae" adapted and modified.* CD, privately distributed by the author in anticipation of publication.
- Turland, N.J., Wiersema, J.H., Barrie, F.R., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Kusber, W.-H., Li, D.-Z., Marhold, K., May, T.W., McNeill, J., Monro, A.M., Prado, J., Price, M.J. & Smith, G.F., Eds (2018). *International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code)* adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017. *Regnum Vegetabile*, Vol. 159. pp. [i]–xxxviii, 1–253. Glashütten: Koeltz Botanical Books.
- Wille, N. (1913). Algologische Notizen XXII–XXIV. *Nyt Magazin for Naturvidenskaberne* 51: 1–26, 1 pl.
- Wille, N. (1919). Algologische Notizen XXV–XXIX. *Nyt Magazin for Naturvidenskaberne* 56: 1–60, 2 pls.
- Zapomelová, E., Skácelová, O., Pumann, P., Kopp, R. & Janecek, E. (2012). Biogeographically interesting planktonic Nostocales (Cyanobacteria) in the Czech Republic and their polyphasic evaluation resulting in taxonomic revisions of *Anabaena bergii* Ostenfeld 1908 (*Chrysoosporum* gen. nov.) and *A. tenericaulis* Nygaard 1949 (*Dolichospermum tenericaule* comb. nova). *Hydrobiologia* 698: 353–365, 3 figs.