
Jules Girard (1839—1921) and the ‘new’ diatoms named and figured in *Les Diatomées Fossiles Etudes Micrographiques* (1867)

David M. Williams, *Department of Life Sciences, Natural History Museum, Cromwell Road, London, SW7 5BD, UK*

While investigating some of the more obscure names in the diatom genus *Diatoma* Bory (Tabellariaceae, Tabellariales), I found a few that were somewhat puzzling. There is an entry in the online *Catalogue of Diatom Names*¹ for a species supposedly named ‘*Diatoma commune*’ with authorship given as ‘Girard’, but the catalogue entry has no additional information. The author name refers to Jules Girard (1839—1921) who has one item listed in the online *Catalogue’s* publication list: a short work of fourteen pages and four plates entitled *Les Diatomées fossiles (Études Micrographiques)* published in 1867 (Girard 1867²). The National Museum of Health and Medicine, Maryland, USA, acquired some of Girard’s archival material, including “two volumes of photomicrographs contain[ing] twenty-three images...”³ Although these archives spell his name as ‘Giraud’, it is evident that the material is Jules Girard’s as his idiosyncratic taxon name spelling is preserved in these listings (e.g., ‘*Aulacodiscus Brigwili*’ for *Aulacodiscus brightwellii* Janisch 1861: 162).

Several additional diatom works by Girard are listed in Habirshaw (1877), Deby (1882) and Mills (1893; Deby prepared the bibliography for Mills), which include “*Études photomicrographie sur le guano*” (Girard 1868) and “*Photomicrographie des diatomées*” (Girard 1869). Neither of these is illustrated. Some years after publishing his 1867 book, Girard wrote a short general piece on diatoms, which is illustrated (Girard 1873).

Information on Girard can be found, with one online source describing him as “*Explorateur, géologue, géographe. - Secrétaire-adjoint de la Société de géographie de Paris de 1875 à 1901. - A également publié sous le pseudonyme: ‘Diatomea’*” [Explorer, geologist, geographer, Assistant Secretary of the Paris Geographical Society from 1875 to 1901. Also published under the pseudonym ‘Diatomea’]; a considerable amount of material relating to his career can also be found on line⁴

The binomial ‘*Diatoma commune*’ does not appear as such in Girard’s *Les Diatomées fossiles*, but on page 10 there is reference to “*La diatomée commune (12) indique bien par les lignes qui la coupent que la sujet est découpé en anneaux que representent les stries*” (Girard 1867: 10, “the common diatom (12)...”), which clearly does not constitute either a description or a binomial; the short piece of text indicates some aspects of the frustule/valve illustrated on Girard’s plate 1, figure 12, which, as it happens, might be interpreted as an illustration of a specimen from the genus *Diatoma* Bory or *Fragilaria* Lyngbye *sensu lato*. The binomial ‘*Diatoma commune*’ does not appear in any other published catalogue: Habirshaw (1877), De Toni (1892—1894), Mills (1933-1935) or VanLandingham (1967—1979), or in *AlgaeBase*, and thus has its only appearance in the online *Catalogue of Diatom Names*. ‘*Diatoma commune*’ was not introduced as a binomial as it was not Latinised, and should be considered as such.

In addition to ‘*Diatoma commune*’, the *Catalogue of Diatom Names* lists two other new species names which apparently first appear in *Les diatomées fossiles*: *Biddulphia baldjikianii* (‘*Balidijk*’),

¹ <http://research.calacademy.org/research/diatoms/names/index.asp>

² <http://gallica.bnf.fr/ark:/12148/bpt6k935196m>

³ <https://archive.org/details/FindingAidForOha173GiraudPhotomicrographs>

⁴ http://data.bnf.fr/12125155/jules_girard/

which has no additional information other than author and date (“Girard 1867”); and *Stephanodiscus magna*, which has a full citation and reference to both page and plate number (Girard 1867: 12, pl. 2, fig. 5).

Biddulphia baldjikianii is mentioned on p. 12 (as ‘Balidijk’) of Girard’s *Les Diatomées Fossiles* and refers to his figure 25, plate 2. The text offers the following: “*Biddulphia Balidijk* (25) *procède de détachement d’une enveloppe gélatineuse à combinaison binaire, comme pour plusieurs exemples précédents*” [*Biddulphia Balidijk* (25) develops from the detachment of a gelatinous envelope with a combined pair, as in several previous examples”, my translation] (Girard 1867: 12). The name *Biddulphia baldjikianii* (or under the spelling *Biddulphia baldjikianii*) does not appear in any of the various published diatom name catalogues (De Toni, Habirshaw, Mills or VanLandingham) and it thus has its first appearance as an entry in the online *Catalogue of Diatom Names*. The species name is probably after the diatom fossil deposit Baldjick, a Miocene fossil deposit studied by Pantocsek (1886–1892), among others (Ognjanova-Rumenova & Buczkó 2015). *Biddulphia baldjikianii* does not appear in any other publication as far as can be ascertained (the illustration suggest a species of *Trieres* Ashworth & E.C. Theriot, Ashworth *et al.* 2013) and neither of the spellings suggest possible orthographic errors on the part of Girard for known taxa.

For *Stephanodiscus magna*, Girard simply writes “*Stephanodiscus magna* (5), *exemple de diatomée annulaire*” (Girard 1867: 12; the ‘(5)’ refers to his figure 5 on plate 2). The name *Stephanodiscus magna* does appear in De Toni (1894: 1155 et seq.), but appended with a question mark; his source is given as Habirshaw, where the name can indeed be found (Habirshaw 1877: [58a]⁵); *Stephanodiscus magna* also appears in the later version of Habirshaw (Chase 1885: 298), in Mills’s *Index* (1935: 1482, “...ex Habirshaw...”) and VanLandingham’s *Catalogue* (1978: 3753, citing “De Toni 1894, p. 1155” as the source; VanLandingham provides a complete reference to Girard’s *Les Diatomées Fossiles*).

Neither of these names appear in the text accompanying the archived photomicrographs mentioned above, so there is no evidence of any specimen that may have been used to support the use of these names as new taxa or as the source of Girard’s illustrations.

Stephanodiscus magna and *Biddulphia balidijk* [= *Biddulphia baldjikianii*] are problematic. Although both have an illustration, they are accompanied by a relatively uninformative description, which may be considered ‘*nomina subnuda*’ (nearly naked names). Turland explains that

“[...] the *Code* tells us only what a description is *not*, i.e. statements describing properties such as purely aesthetic features, economic, medicinal or culinary use, cultural significance, cultivation techniques, geographical origin, or ecological age (Art. 38.3). Some names have been published with minimal descriptive statements ... [and] have been called ‘*nomina subnuda*’ (nearly naked names) and have been regarded by some as validly published but by others as not validly published” (Turland 2013).

Both *Stephanodiscus magna* and *Biddulphia balidijk* [= *Biddulphia baldjikianii*] might be considered as such *nomina subnuda* and the question remains: Are they validly published? In these cases, if the description appears doubtful then as, noted in Art. 38.4 (McNeill *et al.* 2012):

“When it is doubtful whether a descriptive statement satisfies the requirement of Art. 38.1(a) for a ‘description or diagnosis’, a request for a decision may be submitted to the

⁵ The pages are numbered oddly. The name appears on an unnumbered page following 58, hence here referred to as 58a.

General Committee ... which will refer it for examination to the Committee for the appropriate taxonomic group.”

A proposal has been submitted by me for both *Stephanodiscus magna* and *Biddulphia balidijk* [= *Biddulphia baldjikianii*], of which the outcome will constitute what is referred to as a binding decision on the validity of both of these names. While the main purpose of the present note is to draw attention to these obscure diatom names and the question of their validity, it also demonstrates some of the idiosyncrasies of past definitions of taxa.

I thank Laura Cutter (Archivist, National Museum of Health and Medicine, Silver Spring, MD 20910, USA) for sending some copies of Giraud's diatom photomicrographs and Michael Guiry and Kanchi Natarajan Gandhi for helpful comments and guidance.

Ashworth, M.P., Nakov, T. & Theriot, E.C. (2013). Revisiting Ross & Sims (1971): toward a molecular phylogeny of the Biddulphiaceae and Eupodiscaceae (Bacillariophyceae). *Journal of Phycology* 49: 1207–1222.

Catalogue of Diatom Names, California Academy of Sciences. n.d. Compiled by Elisabeth Fournier & J. Patrick Kociolek. Available online at <http://research.calacademy.org/research/diatoms/names/index.asp>

Chase, H.H. (1885). *Habirshaw's Catalogue of the Diatomaceae*. 3rd edition, New York: Geneva, pp. 1-343.

Deby, J. (1882). *A bibliography of the microscope and micrographic studies being a catalogue of books and papers in the library of Julien Deby...* Part III. The Diatomaceae. London: David Bogue.

De Toni, G.B. (1891). *Sylloge algarum omnium hucusque cognitarum. Vol. II. Sylloge Bacillariarum. Sectio I. Raphideae*. pp. [i-iii]. [i]-cxxxii, 1-490. Patavii [Padua]: Sumptibus auctoris. <http://www.biodiversitylibrary.org/page/13357651>

Girard, J. (1867). *Études Micrographiques. Les Diatomées Fossiles* pp. [1]-14. Paris: Imprimerie de E. Martinet. <http://gallica.bnf.fr/ark:/12148/bpt6k935196m>

Girard, J. (1868). Études Photo-micrographie sur le Guano. *Comptes Rendus hebdomadaires des Séances de l'Académie des Sciences* 67: 587-588.

Girard, J. (1869). Photomicrographie des Diatomées. *Comptes Rendus hebdomadaires des Séances de l'Académie des Sciences* 68: 58-59.

Girard, J. (1873). Les Diatomées. *La Nature – Revue des Sciences* 1-26: 14. https://fr.wikisource.org/wiki/Les_Diatom%C3%A9es

Habirshaw, F. (1877). *Catalogue of the Diatomaceae with reference to the various published descriptions and figures*. pp. 1-272. New York: privately published.

Habirshaw, F. (1881). *Catalogue of the Diatomaceae with reference to the various published descriptions and figures*. Part I. pp. 1-58. New York: privately published.

-
- Janisch, C. (1861). Zur Charakteristik des Guano's von verschiedenen Fundorten. *Abhandlungen der Schlesischen Gesellschaft für vaterlandische Cultur. Abtheilung für Naturwissenschaften und Medicin* 1861 (II): 150-164.
- Mills, F.W. (1893). *An introduction to the study of the Diatomaceae*. pp. [i]-xi, [1]-243, 6 figs. London & Washington: Iliffe & Son; The Microscopical Publishing Company.
<http://www.biodiversitylibrary.org/page/42698052>
- Mills, F.W. (1933-1935). *An index to the genera and species of the Diatomaceae and their synonyms, 1816-1932*. London: Wheldon & Wesley Limited.
- McNeill, J., Barrie, F.R., Buck, W.R., Demoulin, V., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Prado, J., Prud'homme van Reine, W.F., Smith, G.F., Wiersema, J.H. & Turland, N.J. (2012). *International Code of Nomenclature for algae, fungi and plants (Melbourne Code)* adopted by the Eighteenth International Botanical Congress Melbourne, Australia, July 2011. *Regnum Vegetabile*, Vol. 154. pp. [i]-xxx, 1-208. Königstein: Koeltz Scientific Books.
- Ognjanova-Rumenova, N. & Buczkó, K. (2015). Taxonomical re-investigation of Sarmatian diatoms from NE Bulgaria, hosted in the Pantocsek Collection (Budapest). *Geologica Balcanica* 44 (1-3): 39-50.
- Pantocsek, J (1886—1892). *Beiträge zur Kenntnis der fossilen Bacillarien Ungarns I—III*. Nagytapolcsány.
- Turland, N. (2013). *The Code decoded A user's guide to the International Code of Nomenclature for Algae, Fungi, and Plants* *Regnum Vegetabile* Vol. 155. pp. [i]-v, 1-169, 19 figs, 11 tables. [Oberreifenberg]: Koeltz Scientific Books.
- VanLandingham, S.L. (1967—1979). *Catalogue of the fossil and recent genera and species of diatoms and their synonyms*. Volumes 1-8. Lehre: Verlag von J. Cramer.