

Case 3160***Dianulites petropolitana* Dybowski, 1877 and *Diplotrypa petropolitana* Nicholson, 1879 (Bryozoa): proposed conservation of the specific names**

Patrick N. Wyse Jackson

Department of Geology, Trinity College, Dublin 2, Ireland
(e-mail: wysjcknp@tcd.ie)

Caroline J. Buttler

Department of Geology, National Museums and Galleries of Wales, Cathays Park, Cardiff CF10 3NP, Wales, U.K.

Marcus M. Key, Jr.

Department of Geology, Dickinson College, Carlisle, Pennsylvania 17013-2896, U.S.A.

Abstract. The purpose of this application is to conserve the specific names of *Dianulites petropolitana* Dybowski, 1877 and *Diplotrypa petropolitana* Nicholson, 1879 for two Ordovician trepostome bryozoans. In 1830 Pander established the name *Favosites petropolitana* for what he thought to be a coral, but which Ulrich (1882) pointed out was a bryozoan, now recognized as composite and indeterminate. Dybowski (1877) and Nicholson (1879) mistakenly applied the name *petropolitana* to two species which have not been considered congeneric since the 19th century. Suppression of Pander's name is proposed in order to conserve Dybowski's and Nicholson's names which are in current use. A lectotype is proposed for *Diplotrypa petropolitana* Nicholson, the type species of *Diplotrypa* Nicholson, 1879.

Keywords. Nomenclature; taxonomy; Bryozoa; Trepostomata; Ordovician; *Dianulites*; *Diplotrypa*; *Dianulites petropolitana*; *Diplotrypa petropolitana*.

1. Pander (1830, p. 105, pl. 1, figs. 6–11) established the nominal taxon *Favosites petropolitana* (named for the city of St Petersburg in Russia) for what he thought was a species of hemispherical coral from Estonia, collected in rocks supposedly of Lower Silurian age but now known to be Ordovician.

2. Dybowski (1877, p. 24, pl. 1, figs. 4–5) in a comprehensive monograph described several supposed chaetetid coral species from a number of sites in Estonia, including *Favosites petropolitana* Pander, 1830, which he assigned to *Dianulites* Eichwald, 1829. He described *Dianulites petropolitana* (Pander) as having a variable colony form with spherical, hemispherical, parabolic, sub-cylindrical, disc and mushroom-shaped colonies. Importantly, the internal features of this taxon were illustrated and shown to be composed of thin-walled chambers with irregularly-spaced diaphragms.

3. Nicholson (1879, p. 312) erected *Diplotrypa*, as a subgenus of *Monticulipora* d'Orbigny, 1849, for hemispherical monticuloporidae 'corals' from the Ordovician of Sweden, and designated *Favosites petropolitana* Pander as the type species of *Diplotrypa*. He (Nicholson, 1879, p. 313, text-fig. 35a, pl. 13, figs. 3–3c) described and illustrated material collected from Ostragothia, Sweden, under the name *Monticulipora (Diplotrypa) petropolitana* (Pander). Comparison of Nicholson's illustrations with those of Dybowski (1877, pl. 1, figs. 4–5) shows them to be of two distinct species. Nicholson's material had been collected from a geological horizon corresponding to that from which Pander obtained his material, but which was in a neighbouring country, 600 km apart across the Baltic Sea. Nicholson noted that many corals had been described from different parts of the world under the names *Monticulipora petropolitana* or *Chaetetes petropolitanus*, which were regarded as conspecific with Pander's species on the basis of external colony morphology or surface features alone. He acknowledged that the internal features of Pander's species had not been determined—at the time he did not know of Dybowski's monograph. Nicholson was unable to locate Pander's original type series and (1879, p. 315) assigned his Swedish specimens as 'types' of *Monticulipora (Diplotrypa) petropolitana* Pander, 1830. His statement is invalid as a neotype designation since it does not fulfil all the conditions of Article 75.3. It has been confirmed by several authors (e.g., Fritz, 1966, p. 1336; Ross, 1970, p. 368) that Pander's specimens were unavailable for study or lost. A recent extensive search for Pander's material by the authors of this application was unsuccessful, and their present existence or whereabouts is unknown.

4. Steinmann (1880, p. 438), in a review of Dybowski's and Nicholson's papers, suggested that *Dianulites* should supplant *Diplotrypa*, but Nicholson (1881, p. 22) strongly refuted Steinmann's argument—'I find it impossible to accept *Dianulites*, Eichw., as emended by Dybowski, as being a natural group and I cannot agree with the suggestion made by Dr Steinmann that this division ought to supplant *Diplotrypa*, Nich., or that it is in any way the equivalent of the latter'.

5. Subsequently *Diplotrypa* was recognised by Ulrich (1882, p. 153) as relating to trepostome bryozoans rather than corals, and raised to generic status.

6. Bassler (1911), in a monograph on the early Palaeozoic bryozoans of the Baltic region, recognised the difficulty of applying Pander's species concept, and stated (p. 312) that it was unclear from his inadequate description and illustrations 'just which of the many hemispherical bryozoans Pander had in mind'. There are at least a dozen hemispherical bryozoans known from Russia which display a similar external morphology and hemispherical colony form. Bassler regarded the specific concepts of Dybowski and Nicholson to be based on good internal morphological evidence, and demonstrated that these authors had described and illustrated distinct species. He argued that the concept of the two taxa under consideration here should be based on the concepts of Dybowski and Nicholson and that their correct names should be *Dianulites petropolitana* Dybowski, 1877 and *Diplotrypa petropolitana* Nicholson, 1879 respectively. We are in agreement with Bassler. However, these names are not available, since each author thought he was applying Pander's specific name and Article 49 prohibits the use of a specific name for a taxon when it was applied to that taxon by misidentification. Nevertheless, the names *Dianulites petropolitana* and *Diplotrypa petropolitana* have been in use throughout the 20th century (see below).

7. Dybowski's (1877) material was collected from a number of localities in Estonia, including Reval, Kuckers, Wesenberg and Dubowiki. Material from the last locality was said by Dybowski to be in the University Museums of Dorpat and St Petersburg. However, we have failed to locate this material, and we intend to collect specimens from some of Dybowski's localities in Estonia and designate a neotype for *Dianulites petropolitana*.

8. *Dianulites* Eichwald, 1829 contains at least 21 species from the Ordovician of Russia, China, North America and the United Kingdom. Several taxa have been described as subspecies of *Dianulites petropolitana* (see McKinney, 1969, pp. 178–179).

9. *Diplotrypa*, which is stratigraphically restricted to the Ordovician (except for three Silurian species described from Russia and the U.S.A., and one from the Devonian of China), is widespread with over 25 species reported from the Baltic, Russia, Western Europe, China, Myanmar (Burma) and North America. The binomen *Diplotrypa petropolitana* is widespread in the literature and at least three varieties and two subspecies have been described (McKinney, 1973, pp. 55–57).

10. Some of Nicholson's (1879) illustrated material of *Diplotrypa petropolitana* is still extant in the Department of Geology, University of Aberdeen [prefix AUGD] (listed in Benton and Trewin, 1978, p. 14). We propose to designate as lectotype of *Diplotrypa petropolitana* the specimen from which two thin-sections have been cut and numbered AUGD 02883 (Nicholson, 1879, fig. 35a, pl. 13, fig. 3b) and AUGD 02884 (Nicholson, 1879, pl. 13, fig. 3c; Nicholson, 1881, fig. 3c).

11. Dybowski's and Nicholson's names are in current use for two different taxa as shown by the following usage references:

Dianulites petropolitana Dybowski, 1877 — Sardeson, 1936; Modzalevskaya, 1955; Sissingh, 1965; Spjeldnaes, 1996.

Diplotrypa petropolitana Nicholson, 1879 — Astrova, 1965, 1978; Bolton, 1966; Bork & Perry, 1968; Ross, 1970; McKinney, 1973; Key 1991.

However, as pointed out in para. 6 (above), in the absence of Commission action neither of these names can be used as valid and we propose the suppression of Pander's name in order to conserve their usage.

12. The International Commission of Zoological Nomenclature is accordingly asked:

(1) to use its plenary power:

(a) to suppress the name *petropolitana* Pander, 1830, as published in the binomen *Favosites petropolitana* for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;

(b) to rule that the following specific names are deemed to be those of then new nominal species:

(i) *petropolitana* Dybowski, 1877, as published in the binomen *Dianulites petropolitana*;

(ii) *petropolitana* Nicholson, 1879, as published in the binomen *Diplotrypa petropolitana*;

(c) to set aside all previous fixations of type species for the nominal genus *Diplotrypa* Nicholson, 1879 and to designate *Diplotrypa petropolitana* Nicholson, 1879 as the type species;

- (2) to place on the Official List of Generic Names in Zoology the name *Diplotrypa* Nicholson, 1879 (gender: feminine), type species by designation in (1)(c) above *Diplotrypa petropolitana* Nicholson, 1879;
- (3) to place on the Official List of Specific Names in Zoology the following names, deemed to be then new nominal species as ruled under (1)(b) above:
 - (a) *petropolitana* Dybowski, 1877, as published in the binomen *Dianulites petropolitana*;
 - (b) *petropolitana* Nicholson, 1879, as published in the binomen *Diplotrypa petropolitana* and as defined by the lectotype proposed in para. 10 above (specific name of the type species of *Diplotrypa* Nicholson, 1879);
- (4) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *petropolitana* Pander, 1830, as published in the binomen *Favosites petropolitana* and as suppressed in (1) above.

Acknowledgements

We are grateful to Dr Alan Cheetham and JoAnn Sanner (Smithsonian Institution, Washington), Dr Paul Taylor (The Natural History Museum, London), Dr Andrew Ostrovsky (St Petersburg), Dr Nigel Trewin (Aberdeen), Professor Nils Spjeldnæs (Oslo) for useful advice or for help with locating literature and specimens, and Peter Wagner (Trinity College, Dublin) for help with translating early papers.

References

- Astrova, G.G.** 1965. The morphology, evolution, and system of the Ordovician and Silurian Bryozoa. *Trudy Paleontologiceskogo Instituta*, **106**: 1–431. [In Russian].
- Astrova, G.G.** 1978. The history of development, system, and phylogeny of the Bryozoa. Order Trepostomata. *Trudy Paleontologiceskogo Instituta*, **169**: 1–240. [In Russian].
- Bassler, R.S.** 1911. The early Paleozoic Bryozoa of the Baltic Provinces. *Bulletin of the United States National Museum*, **77**: 1–382.
- Bassler, R.S.** 1953. In Moore, R.C. (Ed.), *Treatise on Invertebrate Paleontology*, Part G, Bryozoa. xiii, 153 pp. Geological Society of America and University of Kansas Press, Lawrence, Kansas.
- Benton, M.J. & Trewin, N.H.** 1978. Catalogue of the type and figured material in the Palaeontology Collection, University of Aberdeen, with notes on the H.A. Nicholson Collection. *Publications of the Department of Geology and Mineralogy, University of Aberdeen*, **2**: 1–28.
- Bolton, T.E.** 1966. Some late Silurian Bryozoa from the Canadian Arctic Islands. *Palaeontology*, **9**: 517–522.
- Bork, K.B. & Perry, T.G.** 1968. Bryozoa (Ectoprocta) of Champlainian age (Middle Ordovician) from northwestern Illinois and adjacent parts of Iowa and Wisconsin. Part II. *Bythotrypa*, *Diplotrypa*, *Hemiphragma*, *Heterotrypa*, *Stigmatella*, *Eridotrypa*, and *Nicholsonella*. *Journal of Paleontology*, **42**: 337–355.
- Dybowski, W.** 1877. *Die Chaetetiden der Ostbaltischen Silur-Formation*. 134 pp, 4 pls. Dorpat. [Also published 1879 in: *Verhandlungen der Russisch-Kaiserlichen Mineralogischen Gesellschaft zu St Petersburg*, (2)**4**: 1–134.]
- Fritz, M.A.** 1966. *Diplotrypa schucherti*, a new bryozoan species from the Long Point Formation (Ordovician), western Newfoundland. *Journal of Paleontology*, **40**(6): 1335–1337.
- Key, M.M., Jr.** 1991. The halloporid trepostome bryozoans from the Ordovician Simpson Group of Oklahoma. *Journal of Paleontology*, **65**(2): 200–212.

- McKinney, F.K.** 1969. Bibliography and list (1900–1965) of the Families Constellariidae and Dianulitidae (Ectoprocta, Order Cystoporata). *Southeastern Geology*, **10**(3): 175–184.
- McKinney, F.K.** 1973. Bibliography and catalogue (1900–1969) of the Trepostomata (Phylum Ectoprocta). *Southeastern Geology Special Publication*, **4**: 1–147.
- Modzalevskaya, E.A.** 1955. Kolonii mshanok ordovika i zavisimost ikh formy ot uslovii sushchestvovaniya. *Voprosy Paleontologii*, **2**: 125–135.
- Nicholson, H.A.** 1879. *On the Structure and Affinities of the 'Tabulate Corals' of the Palaeozoic Period with critical descriptions of illustrative species*. 342 pp., 15 pls. Blackwood, Edinburgh and London.
- Nicholson, H.A.** 1881. *On the Structure and Affinities of the Genus Monticulipora and its sub-genera with critical descriptions of illustrative species*. 240 pp., 6 pls. Blackwood, Edinburgh and London.
- Pander, C.H.** 1830. *Beiträge zur Geognosie des Russischen Reiches*. xviii, 165 pp., 34 pls. Kray, St Petersburg.
- Ross, J.R.P.** 1970. Distribution, paleoecology and correlation of Champlainian Ectoprocta (Bryozoa), New York State, Part III. *Journal of Paleontology*, **44**: 346–382.
- Sardeson, F.W.** 1936. Early bryozoans: *Monotrypa* and *Eridotrypa*. *Pan-American Geologist*, **66**: 179–190.
- Sissingh, W.** 1965. Grote paleozoische bryozoen uit het Keil'eem. *Natuurhistorisch Maandblad*, **54**: 155–171.
- Spjeldnaes, N.** 1996. Bryozoan colonies as indicators of bottom conditions in the Lower Ordovician. Pp. 315–319 in Gordon, D.P., Smith, A.M. & Grant-Mackie, J. (Eds.), *Bryozoans in Space and Time*. National Institute of Water & Atmospheric Research, Wellington.
- Steinmann, G.** 1880. Referate von: Dybowski, W. 1877 und Nicholson, H.A. 1879. *Neues Jahrbuch für Mineralogie, Geologie und Palaeontologie*, **1880**: 432–438.
- Ulrich, E.O.** 1882. American Palaeozoic Bryozoa. *Journal of the Cincinnati Society of Natural History*, **5**: 121–175.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).