

Nomenclatural notes on *Posidonomya clarae* Emmrich, 1844, the type species of *Claraia* Bittner, 1901

Michael Hautmann* 

Paläontologisches Institut und Museum, Karl-Schmid Strasse 4, 8006 Zürich, Switzerland <michael.hautmann@pim.uzh.ch>

Claraia Bittner, 1901 is a prominent extinct bivalve genus of the Permian-Triassic transition (Newell and Boyd, 1995). Although it first appeared in the Wuchiapingian (Late Permian; Fang Zong-Jie, 2010), its massive proliferation in the immediate wake of the end-Permian mass extinction makes it the archetype of a cosmopolitan and eurytopic disaster species and a hallmark of the base of the Triassic (e.g., Schubert and Bottjer, 1995). Diener (1923, p. 38) fixed “*Posidonomya Clarae* Emmrich (1844)” as the type species of *Claraia* by subsequent designation, but spelling and authorship of this species have been controversial. This short contribution aims to clarify these issues.

The history of this taxon began when Emmrich (1844, p. 793) erected *Posidonomya clarae*, named for Franz Clara, a priest from Kastelruth (South Tyrol) who provided his fossil collection including the species in question to Emmrich. In the following years, the species has been repeatedly reported in its original spelling (e.g., Hauer, 1850; Schauthroth, 1855) until Lepsius (1878, p. 348) changed the species name from *clarae* to *clarai*. Lepsius (1878) did not comment on his emendation, but it is obvious that he regarded the Latin a-declination (which is grammatically usually feminine) as inappropriate for a species that had been named for a man. Since then, both spellings have been used in the literature, although Lepsius’ emended spelling has dominated.

To my knowledge, the issue of different spellings has found only two mentions in the literature. Newell and Boyd (1995, p. 25) stated without further explanation that the “trivial [sic] name is usually mistakenly translated to *clarai*,” and accordingly, they applied the original spelling *clarae* in their paper. In contrast, Posenato (2008, p. 99) emphasized that “the specific term *clarae*, as indicated by some recent authors, is wrong because the species was dedicated to a man.” I followed this conclusion in my own work (e.g., Hautmann et al., 2015; Hofmann et al., 2015), but recent consultation of the International Code of Zoological Nomenclature (ICZN; International Commission on Zoological Nomenclature, 1999) has convinced me that this is incorrect.

First, the case of an apparently incorrect gender of a nomen would not justify an emendation under ICZN Article 32.5. Generally, “incorrect transliteration or latinization ... are not to be considered inadvertent errors” (ICZN Article 32.5.1). Second, Emmrich’s (1844) treatment of the modern personal name “Clara” as a Latin name of a man in a-declination is correct according to the rules of the ICZN. ICZN

Article 31.1.1 states that “a species-group name, if a noun in the genitive case formed from a personal name that is Latin, or from a modern personal name that is or has been latinized, is to be formed in accordance with the rules of Latin grammar.” The ICZN cites the following example: “[...] Nicolaus Poda, even though the name of a man, if accepted as a Latin name, gives [the species name] *podae*.” ‘Clara’ can clearly be regarded as a Latin surname that is declined in the a-declination, even if it refers to a man. Historical examples of men’s names in the a-declination are the conspirator Catilina, the commander Agrippa, and the philosopher Seneca.

The correctness of the species name *clarae* is unaffected by ICZN Article 31.1.2, which states that authors can also decide to latinize modern personal names by adding -i to the stem of that name (in the ICZN example, the species name *podai* from Poda is also admissible). Thus, *clarae* and *clarai* are two possible options for a species name honoring Franz Clara, and Emmrich (1844) chose the first of these.

A second short note refers to the validity of the authorship by Emmrich (1844). Emmrich’s authorship had been generally accepted until the Treatise on Invertebrate Paleontology (Newell, 1969, p. N337) indicated that Emmrich (1844) published the name as a nomen nudum and assigned the authorship to Hauer (1850). This treatment has found occasional consideration (e.g., Newell and Boyd, 1995), but verification shows that this is incorrect. When introducing the new species, Emmrich (1844, p. 793) provided a description of *Posidonomya clarae* that fulfills all requirements of ICZN Article 12 (“Names published before 1931”). Emmrich (1844, p. 793) described the new species as follows [my translation from German]: “The former (a peculiar *Posidonomya*) is distinguished from all other species of this genus by fine radial ribs in addition to the characteristic broad commarginal folds,” which is an appropriate description according to the standards of his time. Although not required under ICZN Article 12, Emmrich (1844) also indicated the exact location and stratigraphic position of the fossil localities and an indication of the institution where the material is housed. The lack of an illustration does not affect the availability of the species name according to the ICZN.

Summarized, both Emmrich’s (1844) authorship and his original spelling of *Posidonomya clarae* must be accepted.

Acknowledgments

I thank reviewers C. McRoberts (Cortland) and T.A. Neubauer (Gießen) and editor S. Schneider (Cambridge) for their constructive comments.

*Corresponding author.

References

- Bittner, A., 1901, Ueber *Pseudomonotis Telleri* und verwandte Arten der unteren Trias: Jahrbuch der Kaiserlich-Königlichen Geologischen Reichsanstalt, v. 50, p. 559–592.
- Diener, C., 1923, Lamellibranchiata triadica: Fossilium catalogus I: Animalia, Pars 19: Berlin, W. Junk, 257 pp.
- Emmrich, H., 1844, Über die Schichtenfolge der Flötz-Gebirge des Gader-Thales, der Seisser-Alpe und insbesondere bei St. Cassian: Neues Jahrbuch für Mineralogie, Geologie und Paläontologie, v. 1844, p. 791–803.
- Fang Zong-Jie, 2010, Generic demarcation of Permo-Triassic *Claraia*-like species and their biogeographic significance: Alcheringa, v. 34, p. 161–178.
- Hauer, F. von, 1850, Ueber die von Herrn Bergrath W. Fuchs in den Venetianer Alpen gesammelten Fossilien: Denkschriften der Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Klasse, v. 2, p. 109–126.
- Hautmann, M., Bagherpour, B., Brosse, M., Frisk, Å., Hofmann, R., Baud, A., Nützel, Goudemand, N., and Bucher, H., 2015, Competition in slow motion: The unusual case of benthic marine communities in the wake of the end-Permian mass extinction: Palaeontology, v. 58, no. 5, p. 871–901.
- Hofmann, R., Hautmann, M., and Bucher, H., 2015, Recovery dynamics of benthic marine communities from the lower Triassic Werfen Formation (northern Italy): Lethaia, v. 48, p. 474–496.
- International Commission on Zoological Nomenclature, 1999, International Code of Zoological Nomenclature (fourth edition): London, The International Trust for Zoological Nomenclature, 106 p.
- Lepsius, R., 1878, Das westliche Süd-Tirol geologisch dargestellt: Berlin, Verlag von Wilhelm Hertz, 375 p.
- Newell, N.D., 1969, Family Aviculopectinidae Meek & Hayden, 1864, in Moore, R.C., ed., Treatise on Invertebrate Paleontology, Part N, Mollusca 6, Volume 1: Boulder, Colorado, and Lawrence, Kansas, Geological Society of America (and University of Kansas Press), p. N335–N341.
- Newell, N.D., and Boyd, D.W., 1995, Pectinoid bivalves of the Permian-Triassic crisis: American Museum of Natural History Bulletin, v. 227, p. 1–95.
- Posenato, R., 2008, Global correlations of mid early Triassic events: The Induan/Olenekian boundary in the Dolomites (Italy): Earth Science Reviews, v. 91, p. 93–105.
- Schauroth, K.F. von, 1855, Übersicht der geognostischen Verhältnisse der Gegend von Recoaro im Vicentinischen: Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Klasse, v. 17, p. 481–562.
- Schubert, J. K. and Bottjer, D. J., 1995, Aftermath of the Permian-Triassic mass extinction event-paleoecology of lower Triassic carbonates in the western U.S.A.: Palaeogeography, Palaeoclimatology, Palaeoecology, v. 116, p. 1–39.

Accepted: 14 July 2022