



## The “Nomenclator of bivalve families”—much more than a first line-up for the new bivalve treatise



**Philippe Bouchet and Jean-Pierre Rocroi (eds.) 2010. Nomenclator of bivalve families. *Malacologia* 52 (2): 1–184.**

More than 40 years have passed since the bivalve volumes of the “Treatise on Invertebrate Paleontology” were published (Moore 1969, 1971) that provided the backbone of bivalve taxonomy since then. The time in between saw new discoveries and new phylogenies, which were increasingly built on a combination of shell morphological, anatomical, and molecular data.

Several attempts to re-classify the Bivalvia down to family level were published. However, none of these approaches included all family group taxa. Moreover, the concepts were restricted to Recent Bivalvia, excluded or emphasised particular types of data, and/or were largely based on secondary sources (e.g., Amler 1999; Bieler and Mikkelsen 2006; Neveeskaja 2009).

The new “Nomenclator” compiled by Phillippe Bouchet and Jean-Pierre Rocroi follows a different, two-step approach. The first part of the work is devoted to bivalve nomenclature and provides information on names at subtribe, tribe, subfamily, family, and superfamily rank. Additionally, all names of higher taxonomic ranks in the Bivalvia are listed. All data have obviously been checked from the primary literature. Moreover, the authors provide a summary of the ICZN rules for family group names, including concrete examples from bivalve taxonomy. The sole purpose of the nomenclator is to detect and denote correct spellings, authorities, publication dates, and full references of all published family group names, and to conclude on their validity according to these rules. Ideally, the result should form an entirely objective assemblage of primary data, expressing the current state of research. As could be expected for a taxon as diversified as the Bivalvia, this goal could not be fully achieved, as several cases (stated in the text) remain to be solved by ICZN ruling. Out of a total of 1048 family group names, the authors extracted 960 potentially valid names, 324 of which they identified as valid bivalve families. For bivalve ranks higher than family groups, an impressive 274 names have been compiled.

Regardless of whether the one or other error will be detected or not, the “Nomenclator” definitely is a milestone in bivalve taxonomy, and a must-have for anyone interested in bivalve research. It is not just a follow-up of its “elder brother”, the gastropod nomenclator (Bouchet and Rocroi 2005), but rather a more than equivalent, though conceptually refined addition. Finally, the authors aim at an even higher goal. After a certain time of elimination of potential errors and official case decisions, the contents of the “Nomenclator” are intended to be added to the official lists of available or, respectively, unavail-

able names of the ICZN. Once this goal is achieved, life will be much easier for bivalve workers, and taxonomists treating other groups of animals may follow this approach—or just go green with envy.

Supplementary to the nomenclator, a statistical evaluation of the detected names by publication dates, names per author, etc. enables a glance at the history and development of bivalve taxonomy. Two results of the statistics will probably be of special interest for palaeontologists: More than 50% of the available bivalve family group names are based on fossil type species. Even more impressing, more than two thirds of all valid bivalve families are known entirely as fossils. These facts powerfully underline the importance of palaeontology for the understanding of bivalve evolution!

The second part of the work, a “Classification of bivalve families” compiled by Rüdiger Bieler, Joseph Carter, and Eugene Coan, provides a systematic arrangement of the Bivalvia based on the results presented in the nomenclator. All family group names identified by Bouchet and Rocroi are placed within this classification! This is one of the reasons, why the outcome is superior to previous approaches. A well-balanced integration of morphologic and anatomic as well as molecular data certainly is a second advantage. The authors clearly state that the present classification should be understood as “a technical tool and nomenclatural foundation for future projects”. For the time being, it may be regarded as the most powerful tool of that kind. One should pay attention, however, that superfamilies and families are arranged in alphabetic order within superior taxa. For those bivalve groups that have been subject of recent modern revisions, a phyletic rather than alphabetic arrangement may be more appropriate. Certainly, this latter aspect will also be subject of ongoing debate until the final compilation of the revised bivalve treatise. Anyway, a solid foundation is laid, and to construct and re-build on these grounds is what drives forward bivalve research and bivalve researchers.

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