Book review

M. AMLER, R. FISCHER & N. ROGALLA, 2000. Muscheln. Haeckel-Bücherei Band 5. x + 214 pp., 87 textfigs., 6 pls. Enke im Georg Thieme Verlag. ISBN 3-13-118391-8, ISSN 0936-8515. DM 69.80 (c. 34 Euro).

This German book gives a good, modern overview of the history of the class Bivalvia, such as their systematics and evolution, as well as palaeoecological, biogeographical and stratigraphical aspects. Aimed at palaeontologists, it has much to offer not only to the student of palaeontology and biology, but also to the interested layman and the general scientist (e.g. geologist) who wants a key to some aspects of bivalve palaeontology. The book deals primarily with the fossil bivalves but, of course, uses biological information to interpret the fossil evidence. Abundant recent references give an opportunity to catch up with the literature on specific subjects.

It becomes obvious from the text that the authors are actively engaged in research and fully aware of the latest views on (for example) the earliest developments of the class and its ties with other mollusc classes, such as the Rostroconchia, the systematics of the group and its evolution, giving their own, well-founded opinion.

That this book is not in the first place for the average amateur is already evident from the photograph on the cover: most people - probably even many biologists - would suppose it to represent a coral rather than a specialised fossil bivalve, a rudist (order Hippuritoida). However, enough basic information is provided to make the book very useful for an interested layman to get an overview of the evolutionary history of the class and the systematic subdivision down to family level.

The first part of the book gives a thorough introduction to the classical biological aspects of the bivalves, such as functional morphology, describing and illustrating the soft parts of the animals and the traces they leave in the shells, thus connecting them with the palaeontological results, the fossils. Together it forms a firm base for a systematic classification at the superfamily level (as clearly stated by the authors: the old ending -acea is still used for the superfamilies, although the new Code of Zoological Nomenclature (1999) now prescribes the ending -oidea), which is discussed in the light of other information such as cladistics and genetics, after an overview of the present ideas on the evolution of the major mollusc groups. A detailed classification at the family level, with good drawings of representatives of each family is given next.

It is followed by a chapter that deals with the different aspects of ecology and palaeoecology, notably autecology and synecology. An important factor in palaeoautecology is form and function, which enables one for example to decide whether certain bivalves may have lived on the sea- (or lake-)bottom, or burried in it. The use of successive faunas in stratigraphy is shortly discussed, as is the palaeobiogeography, for which the present-day situation is used as an example. Bivalve trace fossils and fossilisation processes conclude this chapter.

The next, rather short chapter deals with the use of fossil bivalves as a tool in dating sediments. One might have wished it to be more elaborate, comparing the results with those from other groups, but because of the limited usage of bivalves in stratigraphy it is probably fitting that the authors restricted themselves to some general examples, including bivalves as raw material for isotope studies.

The book ends with an "Ausblick", a kind of epilogue that deals with the problems that are still unsolved, giving some hints about interesting research subjects. A glossary, an index, references, and a modern geological time table conclude the book.

The figures are carefully drawn and give a lot of detailed information, thus supporting the clear, concise text. I found only one slight mistake, of no consequence at all, in text-fig. 8.1: Inoceramus schöndorfi should have been corrected to Inoceramus schoendorfi. The plates (1-3) showing photographs of larval shells (protoconchs) and shell microstructures are of high quality and functional, whilst the photographs of rudists (pl. 4) are nice but give no additional information (there are also good drawings). In my opinion it would have been more appropriate to include the drawings of rudist reefs (pls 5-6) as text-figures in the chapter on palaeoecology (with text-fig. 7.13), the more so since they are drawings and not photographs. These are, of course, only minor points that do not impinge on the usefulness of the book, which is very good value for money. All in all, one gets a lot of interesting information with nice and useful illustrations for a bargain.

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