Book Review

 Phylogeny and Evolution of the Mollusca
 Ponder, W.F. & Lindberg, D.R. (Eds)

Mollusca are the most diverse marine phylum. They can be found in almost every aquatic environment, show unsurpassed adaptations to virtually all marine habitats, act as ecosystem engineers, are of economic importance and have a rich, extensive fossil record. Not surprisingly, therefore, they are a primary target of biological and ecological research. Moreover, the last two decades have also seen an increasing interest in the evolutionary history of molluscs, which is exemplified by several relatively recent books (Taylor 1996; Johnston & Haggart 1998; Harper et al. 2000; Lydeard & Lindberg 2003). The present volume is a landmark in that it integrates molecular and morphological data and evaluates them in a cladistic framework under the consideration of the fossil record. It is an output of a symposium on molluscan phylogeny, organized by the Editors, Winston Ponder and David Lindberg, in 2004. Thirty-six authors, including many leading molluscan specialists, primarily provide in-depth reviews on the evolutionary history of this clade, but some chapters also present and analyse new data.

In 17 chapters, broad room is given for the discussion of different and sometimes controversial views of phylogenetic relationships among higher taxa. The considerable gaps in our knowledge are also outlined, which may stimulate future research. The book has been carefully edited and is rich in high-quality figures. A very useful introduction explains common morphological terms used in molluscs, cladistics, molecular biology and developmental studies. A chapter on the relationships among the molluscan classes discusses the ongoing debate on the sister group to the Mollusca among the Lophotrochozoa and is followed by a contribution on the earliest fossil record, most notably the small-shelly faunas at the base of the Cambrian, which contain many putative and highly enigmatic taxa. An enlightening summary on Amphineura is followed by concise treatments of Monoplacophora, Bivalvia, Scaphopoda and Cephalopoda.

The great diversity and disparity of Gastropoda is reflected in an overview and six additional chapters, each dealing with a different aspect of their phylogeny. The book then closes with chapters on molluscan evo-devo and genomics, certainly the fields of future innovative research.

This book is highly interesting for people focusing on phylogeny. Equally, however, those marine biologists and ecologists who want to put their molluscan data into an evolutionary context also must have the book. This is underscored by the recurrent heading ‘adaptive radiation’ in each chapter, an attractive aspect for a wider readership. The emphasis here is on the key innovations that enabled the members of the respective taxon to diversify and to occupy new ecological niches. The book will therefore serve as a standard reference for evolutionary ecologists over the next decade.

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References