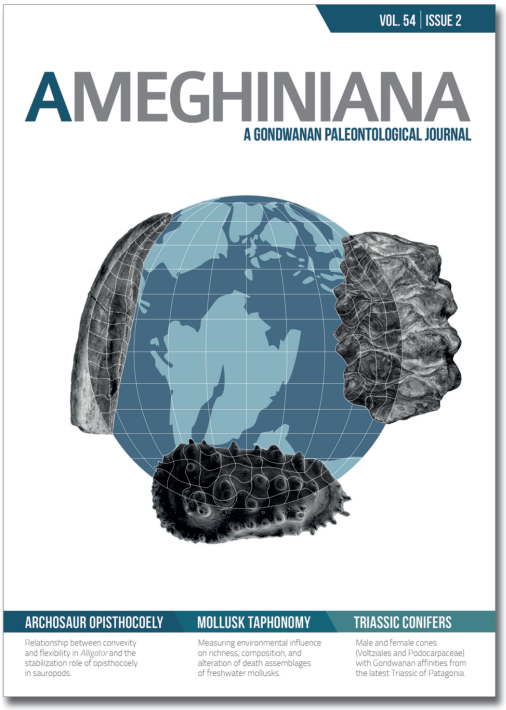
AMEGHINIANA
A GONDWANAN PALEONTOLOGICAL JOURNAL



ENCYCLOPEDIA OF MARINE GEOSCIENCES

Jan Harff, Martin Meschede, Sven Petersen, and Jörn Thiede (editors). Springer, Dordrecht, Heidelberg, New York, London, XXXIII+961 pp, ISBN: 978-94-007-6237-4

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To cite this article: Demetrio Boltovskoy (2017). ENCYCLOPEDIA OF MARINE GEOSCIENCES. *Jan Harff, Martin Meschede, Sven Petersen, and Jörn Thiede* (editors). Springer, Dordrecht, Heidelberg, New York, London, XXXIII+961 pp, ISBN: 978-94-007-6237-4. *Ameghiniana* 54: 255–256.

ISSN 0002-7014

AMEGHINIANA - 2017 - Volume 54 (2): 255 – 256

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With the increasing diversification and specialization in all branches of science, keeping track of new developments outside of one's area of expertise, and even simply understanding some essential concepts in fields with which one is only marginally familiar, has become an increasingly difficult task. This is particularly true of marine geology, which draws from innumerable areas of knowledge. As stated in the chapter Marine Geosciences: A Short, Eclectic, and Weighted Historic Account of the book reviewed, "Marine geosciences are covering all phenomena and processes related to the formations of shallow shelf seas and of the deep ocean. They draw on modern dynamics of seafloor and sediment formation, marine geophysics and tectonics, volcanology, geochemistry, microbiology, biology, and paleontology of marine organisms. They are of great economic importance because of the wealth of nonliving marine resources". The Encyclopedia of Marine Geosciences does an excellent job of filling this gap. It is an impressive reference tool resulting from the expertise of ca. 200 scientists from ~30 countries. All articles are authored by internationally recognized experts and have been reviewed by a large body of subject editors.

As the title suggests, its main focus is marine geology, but since this field is intimately linked with a wide array of related areas, it also covers aspects of the geophysics, hydrography, biology, paleontology, climatology, and ecology of the ocean. Marine micropaleontology is probably one of the ancillary topics most thoroughly covered in this book, with chapters devoted to all major aspects of the formation, preservation, and interpretation of biogenic sedimentary records. Each of the most important microfossil groups is treated exhaustively in separate chapters (Coccoliths, Diatoms, Dinoflagellates, Foraminifers (planktonic and benthic), Palynology, Pteropods, Radiolarians), as well specific problems associated with their use as paleoindicators (Biochronology and Biostratigraphy, Bioturbation, Calcite Compensation Depth, Carbon Isotopes, Carbonate Dissolution, Export Production, Laminated Sediments, Modern Analog Techniques, Oxygen Isotopes, Paleoceanographic Proxies, Paleoproductivity).

While primarily intended for academicians, its 195 entries are not restricted to pure research, but also cover fundamental aspects of applied ecology, economic geology and the exploitation of marine resources (*e.g.*, Ocean Acidification, Energy Resources, Engineered Coasts, Geohazards: Coastal Disasters, Integrated Coastal Zone Management, Marine Mineral Resources, Oil Spill, Technology in Marine Geosciences).

While generally excellent and with a very sound layout of the essentials of each topic, as with all works of this caliber, the coverage is occasionally uneven. For example, in the chapter "Currents", one would have expected to find a general diagram of at least the major surface currents in the World Ocean. Although profusely illustrated with excellent figures (458 in total, mostly in color), some chapters are surprisingly restricted to text only (*e.g.*, Dinoflagellates, El Niño, Upwelling). However, it should be borne in mind that The Encyclopedia of Marine Geosciences is the latest contribution to Springer's series The Encyclopedia of Earth Sciences, the previous volumes having centered on Coastal Science, Geochemistry, Paleoclimatology and Ancient Environments, and Sediments and Sedimentary Rocks). As the editors notice in their preface, some overlap between the topics treated in this volume and the other issues of the series is unavoidable, which may justify the shortness of some entries in this edition.

In short, The Encyclopaedia of Marine Geosciences is an excellent reference work for learning the essentials of features and processes in areas outside of the reader's field of expertise, and the references included in each chapter greatly facilitate the search for further detail. Most importantly, each subject is treated with a view to cover the general concept clearly, incorporating the most updated relevant information, and in a way accessible to readers with a wide range of backgrounds. A particularly welcome feature is that every entry

starts with a list of synonyms by which the same feature or process is known in the literature, followed by a short (usually a few lines) and clear definition. At quite an affordable price (the options are eBook, a printed version, and a combo of both), this encyclopedia clearly fills an important gap in the current literature.

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