

Stromatolites: Developments in Sedimentology 20

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At the same time, the restricted geographical distribution of the majority of the contributors has conveyed a predominantly North Atlantic bias to the text. It should be borne in mind, however, that such is the scope of the topic encompassed by the title of the book that it would be impossible to give complete and uniform coverage within the confines of a single set of covers and, at least, the editors have achieved their aim of *partially* filling the void!

The book suffers from a number of technical defects which reflects careless proof-reading and lax editorship. Thus, the text is beset with numerous typographical errors while several text figures have the lettering inverted. Such defects might be excusable if they betokened rapid publication. That such is not the case, however, is clearly evidenced by a perusal of the lengthy bibliography comprising more than 1500 citations, the most recent of which pre-date Hedberg's 1976 International Stratigraphic Guide by at least two years. For this reason, the book was already something of a 'period piece' at the date of publication. It tells us nothing new, but it does fulfil the valuable role of bringing together a wealth of information widely scattered through the literature. It is a useful reference, but not a fount of new ideas.

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Stromatolites: Developments in Sedimentology 20

Edited by M. R. Walter
Elsevier Scientific Publishing Co.,
790 p., 1976.
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A few years ago, I was present at a seminar given by M. A. Semikhatov on the advances in Russian thinking on the use of stromatolites in biostratigraphy. I was intrigued to discover that the Russians, the leaders in this field, were becoming more and more sensitive to the influence of physical or environmental factors on Precambrian stromatolite morphology, rather than considering them purely organic structures, while from my own experience with modern stromatolites I knew that researchers working with modern forms were recognizing increasingly the biological controls of morphology. This "depolarization" and the growing interdisciplinary approach to the study of stromatolites is documented convincingly in this book edited by Malcolm Walter.

Walter and Elsevier have produced a comprehensive but very expensive compilation of 43 papers by 42 contributors which touches on nearly all aspects of stromatolite morphology, biology, sedimentology and biostratigraphy. It is destined to become the standard source book for stromatophiles, even though most will not be able to afford its excessively high price.

The papers or chapters in the book are categorized by topic into 12 groups; the more significant of these groups, with the number of papers in each in parenthesis, are: Methodology and Systematics (5), Abiogenic Stromatolite-like Structures (3), Biology of Stromatolites (5), Fabric and Microstructure (2), Morphogenesis (4), Biostratigraphy (3), Recent Models (8), Basin Analysis (9), and Mineralization Associated with Stromatolites (2). As with any compilation of this size, the quality of papers, and

the value of the contribution of individual papers to the volume as a whole, are variable. Many of the papers are brief, some disappointingly so, and some cover topics published elsewhere. The overall quality of the book, however, is very good, and illustrations are plentiful and generally of good quality. Walter is to be congratulated for what must have been a long and demanding job of editing.

The book will be most valuable for the collections of papers on biology of stromatolites, on abiogenic stromatolite-like structures, on morphogenesis, and on recent models. At first sight, an obvious gap is the absence of a paper by Brian Logan or his research group on the Shark Bay stromatolites, yet this deficiency is covered by papers by Hoffman and by Playford and Cockbain, and also by papers by Logan's group in AAPG Memoir 22. Geologists aware of some of the controversies over interpretations of some carbonate provinces in Western Australia may find the summary of the history of discovery and research on the Shark Bay stromatolites given by Playford and Cockbain in the Introduction to their paper of interest.

To some extent, the study of stromatolites and their environmental interpretations have been over-influenced by the unique occurrence of the stromatolites of Shark Bay, and their concentration in the present intertidal environment. The "bandwagon" effect so common in geology (and other sciences?) has placed too much emphasis on stromatolites as diagnostic of restricted intertidal environments, and not enough on the environmental and biological (plus evolutionary) principles involved. The papers by Playford and Cockbain, and by Hoffman document the occurrence of subtidal (sublittoral) stromatolites in Shark Bay, and should be read carefully. The pitfalls of unqualified uniformitarianism are many and varied.

I have not read every word in every paper in this book, but it is essential reading for anyone working with stromatolites, for even many specialists in the field probably do not have the broad overview of all aspects of the topics covered by the book. It is disturbing to conclude that useful as this book will be, its price puts it beyond the grasp of the student, the average geologist, and indeed many smaller university libraries.

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