

Cycles and events in stratigraphy

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Review by Christopher G. Kendall

This timely book deals with that high geological fashion 'cycles in stratigraphy' and with the increased interest of earth scientist in sequence stratigraphy, this book could end up on many peoples desks. This book is important in that it deals with many of the problems and concepts related to understanding cyclic stratigraphy but does not preach any particular direction or philosophy but unbiasedly offers all, in the limitations of an already packed book. The text was the result of a meeting held in Tubingen on "Cycles and events in stratigraphy" in 1989 and contains the contributions of some 62 scientists.in 43 papers. It should be acquired by anyone working with cyclic stratigraphy, should their medium be seismic alone, annual lacustrian or marine varves, or even the isotopic signals given by sediments from the deep ocean. The book has something for most earth scientists, though the sedimentary record is stressed.

I enjoyed reading this extraordinarily comprehensive text with it's many conceptual diagrams. It has an extensive list of references and numerous review articles on the topic of cycles in the stratigraphic record with a breadth of coverage and plethora of subject matter from so many viewpoints that the coverage is almost overwhelming. It considers topics of cyclic sedimentation ranging from the shallow marine to the deep to the lacustrian, from carbonates to clastics, and from turbidites to chemical precipitates.

The text begins with an introduction which sets the stage for the rest of the book by discussing the common terminology which is used throughout it. The rest of the book is organized into: Part I which deals with the structure of individual beds and has chapters containing papers on bedding character as related to periodic rhythms, episodic events, diagenetic and biologic enhancement and obliteration of events; and Part II which deals with larger cycles and sequences with chapters on sequences, their timing and correlation.

The most important aspect of this book is the recognition of the significance of scale and frequency. These control bed thickness and timing and explain how interpretation is complicated if these are misinterpreted or incorrectly assumed. In the Preface Al Fischer comments on how the enormous complexity of numerical information presently being derived from the interface of sedimentology, paleontology, geochemistry and geophysics is cast in the framework of sequence stratigraphy and now, through use of the computer, may be used to solve the origin of the cyclic character of sedimentary column. Undoubtedly persons confused as to what the origin of their particular cycles are, will enter the age of Al Fischers "New Stratigraphy" better equipped having read this text. I see this as a reference book for most professionals working with stratigraphic problems, and for graduate students conducting research in this area. The editors and Springer Verlag are to be congratulated on producing what I suspect will be a best seller in the Earth Sciences.