

Tidal Deposits

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sediments from temperate coastal environments, for which purpose, Dr. Reineck draws freely from his 49 quoted papers.

The bibliography cites 1118 of the major papers in sedimentology (many of which are in other languages) and is therefore, a useful source of reference to the earth science student as well as the specialist.

A limitation of the book is the lack of information on the dynamics of the depositional environments. It is unfortunate that only the first six pages of the book is dedicated to the principles of general hydrodynamics and to how these principles are related to associated sedimentary deposits. This topic is fundamentally important to any environmental reconstruction, prediction, or classification, and is all too often, poorly understood by the earth scientist.

As specified in the preface, very little of this book is devoted to the method of sediment identification and analysis. Many methods of presentation have been discussed including aerial photography, seismic geophysical records, echograms, radiographs and micrographs. Having stimulated the reader with such excellent results, one can only remain frustrated by the lack of specifications on the instrumentation and procedure to reproduce these results.

In conclusion, notwithstanding those limitations cited above, this text book justifies its position as the second most popular book of sedimentology in the Springer-Verlag series. It is certainly a useful addition to any collection if you can afford the price.

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Edited by Robert N. Ginsburg
Springer-Verlag, N.Y., 428 p., 1975.
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The subtitle of the book, "a casebook of Recent Examples and Fossil Counterparts", well describes the purpose of this unique book: to bring together brief descriptions of modern and ancient tidal deposits, prepared according to a standard format. Ten modern siliciclastic examples are followed by 12 ancient siliciclastic examples (ranging in age from the late Precambrian to the Pliocene), and four modern carbonate examples are followed by seven ancient ones that display typical laminated and stromatolitic features. The book ends with eight somewhat more general carbonate examples, an epilogue by George deVries Klein, and a brief annotated bibliography by Hans-Erich Reineck and Robert N. Ginsburg.

The book, therefore, does not set out to be a comprehensive discussion of tidal sedimentation, but focusses narrowly and effectively on a single problem: how do the various modern examples of tidal deposits compare with each other and with various (interpreted) ancient examples? To make possible comparison of ancient with modern examples, emphasis has been placed on careful description of typical vertical successions of facies produced by shifting through time of the different depositional environments. There has been no attempt to synthesize the various examples into a complete facies model, but the book does contain the basic data upon which such models must be based. Fittingly, the book is dedicated to the memory of Rudolf Richter (1881-1957) the German paleontologist-sedimentologist who founded the Senckenberg-am-Meer, an institute established for the express purpose of comparing modern and ancient sediments and organisms.

As though to illustrate how it should be done, the paper by Ginsburg and L. A. Hardie on the Andros Island carbonate tidal flats seems to me the best of the lot. The Persian Gulf flats are described too briefly, considering the scientific and economic importance of this example. There are two papers on Shark Bay, our third major area of modern carbonate intertidal deposits, but neither seems to pack in quite as much information as Ginsburg and Hardie manage in their eight pages.

Of the modern siliciclastic papers the most informative are by Graham Evans on the Wash, and by Claude Larssonneur on Mont Saint-Michel; there are also useful papers on the German flats, the Dutch inshore subtidal, the Colorado delta and Laguna Madre (Texas).

The Canadian contribution is strong and includes papers by John Knight and Bob Dalrymple on the modern macrotidal deposits of Cobequid Bay (N.S.); by Roger Walker and John Harms on the Devonian Catskill delta; by Lubomir Jansa on the Monkman, an Ordovician quartzite from B.C.; by Paul Hoffman on the cyclic, stromatolytic Rocknest, in the Proterozoic of the Coronation geosyncline; by Frank Beales and G. P. Lozej on a most unusual Ordovician example from the Brent meteorite crater; by Paul Schenk on the Windsor Group in the Maritimes; and by Eric Mountjoy on tidal deposits in Devonian buildups in Alberta. This list well displays the Canadian strength in ancient and relative weakness in modern sediment studies, though the organizers might have added a paper from the U.B.C. group that has studied tidal deposits in the Fraser delta. Are there any Archean tidal deposits ("tidalites")? At any rate, not in this book.

The book is beautifully illustrated and well-edited both scientifically and technically. Buy a copy, and see if you can find an Archean tidalite!

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