

more diverse range of topics, and the treatment is necessarily more fragmented. The authors have successfully attempted to maintain perspective and to interrelate sections where possible. Topics covered include alcohol dehydration (homogeneous and heterogeneous conditions), deamination, dehalogenation, pyrolytic eliminations of halides, esters, xanthates, and the like, alkyne-forming eliminations, α - and γ -eliminations, fragmentation, and photochemical eliminations. The coverage is still comprehensive and authoritative.

Except for the subject index the pages have been directly reproduced from a typescript, which has avoided some of the publication delays that one has unfortunately become accustomed to. References are given at the ends of the chapters. No author index is provided.

University libraries require this book, and it should appear on the shelves of all researchers and teachers concerned with heterolytic reaction mechanisms. It is too specialized to serve as a text for advanced courses in organic mechanisms, but relevant chapters can be assigned as ancillary reading. The synthetic chemist who wants to find the best reagent and conditions for introducing unsaturation into a given molecule will have to look elsewhere, as the book has not been aimed in that direction. He or she would be wise, however, to obtain more than just a passing acquaintance with the contents. Mechanistic studies of olefin-forming β -eliminations in particular have in many cases provided extremely useful synthetic guidelines, and problems associated with orientation and stereochemistry cannot be appreciated without a firm mechanistic background.

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Sedimentation

Depositional Sedimentary Environments. With Reference to Terrigenous Clastics. H.-E. REINECK and I. B. SINGH. Springer-Verlag, New York, 1973. xvi, 440 pp., illus. \$41.60.

This volume is the first major attempt since 1932 to summarize in English work on modern sedimentary environments. This itself is surprising: the concept of sedimentary environments is of crucial importance for

geologists because the properties of environments control most aspects ("facies") of the sedimentary rocks that originate in them. Sedimentologists, stratigraphers, and petroleum geologists who try to reconstruct geological history from sedimentary rocks recognize that sedimentary environments, and therefore sedimentary facies, are not infinite in number or random in pattern and that the surest way to recognize and interpret past facies patterns is by using "facies models" based upon the study of modern environments.

The Senckenberg Institute at Wilhelmshaven, where for over 20 years Hans-Erich Reineck and his colleagues have been studying the nearshore and intertidal environments of the North Sea, was founded in 1929 by the paleontologist Rudolf Richter. A long series of papers, almost all published in German, have established the high reputation of the institute, but the language barrier has made the work itself inaccessible to all but a handful of American workers. The present volume will therefore be welcomed on two counts: it provides a long-needed summary in English of German studies on sedimentary environments, and it is a contribution to the elaboration of a comprehensive, synthetic system of modern models for the interpretation of ancient sedimentary facies.

Regrettably, the book can be welcomed only with strong reservations. The authors limit their discussion to physical and biological aspects of sedimentary environments, neglecting chemical aspects. More than 100 pages are devoted to a review of sedimentary structures and textures, topics already adequately discussed in several other books. There remain some 250 pages devoted to a series of systematic reviews of sedimentation in modern glacial, desert, lake, fluvial, deltaic, coastal, and marine environments. The reviews are valuable summaries of a large literature and are amply illustrated and documented, but they could have been improved by careful editing. One can only be grateful that the book is written in English, but its quality is erratic, to say the least. The illustrations are abundant, well chosen, and of excellent quality, but many of them are insufficiently discussed in the text and contain symbols that are not explained in the legends.

Each section of the book ends with a single paragraph listing examples of sedimentary formations deposited in the corresponding environment in the

geological past; none of these examples is discussed at length. Relatively little effort has been made to generalize the mass of observations into simplified models suitable for use by geologists who work mainly with ancient sedimentary rocks. The book can hardly be recommended for students, but professional stratigraphers and petroleum geologists will still find it a worthwhile investment of their time and money.

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