

reviews

A (highly) intelligent school leaver about to take up an appointment as an X-ray crystallographer in a biochemical laboratory and wrecked on a desert island on his way, would find the present volume invaluable in equipping him for his new post by the time of his rescue. Dr Sherwood takes the reader in a methodical way through all the necessary steps to the solution of an unknown crystal structure. He starts with an explanation of the fundamentals of crystallography, of wave motion, of diffraction and Fourier transform theory and develops the necessary mathematical methods on the way. He then deals with the theory and practice of crystallographic structure determination—intensity measurement, extinction, Patterson methods, phase determination, refinement and direct methods are dealt with in successive chapters. The final section deals with biopolymers and diffraction by helical structures. In spite of the title, the chapter on protein crystallography as such is the least adequately covered. An appendix discusses a practical example of the solution of an

Desert island crystallography

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Crystals, X Rays and Proteins. By Dennis Sherwood. Pp. xxii+702. (Longman: London, January 1976.) £12.50.

organic structure.

The presentation is clear and fairly mathematical although it is a little doubtful whether it could be followed in its entirety by a reader who had not met any of the concepts before reading this volume. The author adheres throughout to a treatment in which he first states what he is going to say, then says it and finally discusses what he has said. The chapter summaries, in particular, are useful. Other good features are the annotated bibliography and the glossary and

index. References are mostly to monographs and reviews, rather than to original papers. The illustrations are plentiful and informative, although more modern X-ray photographs of biological materials might have been chosen. The text seems reasonably free of errors and misprints. It is a little strange to find within the same covers an illustration of wave interference in a ripple tank and a derivation of the Harker-Kaspar inequalities, but the author has fulfilled his stated intention of saying something of use for every class of reader in every section. Although the coverage of the theory of X-ray crystallography is fairly complete the reader will have to look elsewhere for a description of experimental methods.

This is a book to keep at home or in the office far from the departmental library, to read up on or verify X-ray crystallographic theory. It is of less value in a library since all the topics which the book covers can be found in readily available standard textbooks, although quite a number of separate ones may have to be consulted.

HAVING recently returned to academic life after several years in the oil industry, Dr Selley has obviously seen the need for a textbook on sedimentology with a distinct emphasis on the more practical and economic aspects of the subject, particularly in its application to petroleum geology. As indicated in the preface, the book presents an overview of the more important fields of sedimentology in an attempt to satisfy the needs and interests of students and practising geologists. It should of course be remembered that sedimentology has evolved rapidly over the past few decades, and presenting an overview must therefore necessarily involve concentrating on concepts rather than detailed analysis. Consequently, this book should be regarded strictly as a basic introduction to sedimentology in which subject matter is discussed at a very general level; but one which should also provide the reader with a reasonable background knowledge of the subject. The practising petroleum geologist may well have appreciated a more advanced treatment.

The text is presented according to a logical format, commencing with the now familiar summary of the textural characteristics of sediments, including

Do-it-yourself sedimentology

Brian Waugh

An Introduction to Sedimentology. By Richard C. Selley. Pp. xi+408. (Academic: London, New York and San Francisco, January 1976.) £5.90; \$14.75.

a valuable section on porosity and permeability. A short chapter on weathering is very disappointing, leaving the reader with little more than an elementary understanding of weathering and soil-forming processes. The sedimentary rocks themselves are covered in two chapters on allochthonous and autochthonous sediments, each major rock type being described with respect to classification, petrography and, where relevant, the relationship between diagenesis and porosity development. The sections on carbonates and evaporites are particularly useful summaries, although coverage of the other rock types suffers an inevitable brevity. Physical aspects

of transportation and sedimentation are qualitatively reviewed, followed logically by a discussion of the morphology and origin of biogenic and inorganic sedimentary structures. A major section is devoted to a study of sedimentary facies and environments, on the basis of which the author erects a series of informative sedimentary models. Sedimentary basins, their origin, structure and evolution are discussed, including a few short case histories illustrating the sequence and variety of basin fill deposits. The final chapter deals specifically with applied sedimentology, highlighting the role of sedimentological knowledge in the exploration and exploitation of hydrocarbons, together with a tantalisingly brief discussion of sedimentary ores.

The book is written in a very informal style, a feature which should appeal to the student reader at least, and the diagrams are on the whole clearly presented and informative. The major criticism of the book—that is, that too much has perhaps been attempted in this overview with the result that many topics are not discussed to any great depth—is perhaps counterbalanced, certainly for the more specialist reader, by the inclusion of most comprehensive reference lists.