

Glossary of Primary Sedimentary Structures, Prof. F. J. Pettijohn and Prof. P. E. Potter make a notable addition to the resources of undergraduates reading earth science and of teachers in the field of soft-rock geology. The *Atlas* will also be valued by those professionals whose work lies largely outside the stratigraphical and sedimentological fields.

Most of the book is taken up with 198 photographic plates illustrating many different kinds of sedimentary structure, the majority of which are dependent on current action or on deformation of the sediment prior to lithification. Most of the plates represent natural or artificial rock-exposures, but twenty-nine come from the field of present-day sedimentary environments. The plates are preceded by a brief statement in which primary sedimentary structures are defined and classified. After the plates comes a glossary of names and terms commonly applied to sedimentary structures. The text and descriptions of the plates are also given in German, French and Spanish.

The scope of the book is a very fair measure of the advances in descriptive knowledge of sedimentary structures made since Sorby, in Britain, and Hall, in the United States, began work in this field more than a century ago. The authors' aim is descriptive and the adopted classification of structures logical within the self-imposed limitations of a field guide. Notwithstanding, a classification based on genesis of the higher ranks of structure will be regarded by many teachers as equally valid within these same limitations, on the grounds that the description and analysis of a body of rock should be so arranged as to provide the most direct path to an interpretation. Thus, for example, load casts were perhaps better illustrated with ball-and-pillow, ripple marks with cross-stratification, and current crescents with flute marks, than with the structures chosen as immediate neighbours for them in the *Atlas*.

Although the book is wide in scope there are important omissions. Aeolian dunes and related phenomena are treated very sketchily, although a wealth of photographic data exists for this important group of structures in both North America and Europe. A much fuller treatment of trace fossils could have been given without the authors having risked over-specialization. Many teachers will regret that there is no discussion of the limitations of rock-exposures as evidence of the complete form of sedimentary structures. In the case of cross-stratification, for example, surely some of the many plates used to illustrate this structure could have come from outcrops that provided more than one plane of section. Such evidence is all too rare, but because three-dimensional views are provided is to be valued the more highly.

The *Atlas* is well produced and the publishers are to be congratulated. The plates are excellent technically, if over-abundant in the case of certain structures, and the number of printer's errors is relatively small. However, it is a pity that a text is not provided in Russian, in view of the large amount of sedimentological work published by Soviet scientists in recent years. None the less, Profs. Pettijohn and Potter have performed a notable service, and their book is to be warmly recommended to teachers and students alike.

J. R. L. ALLEN

A JOURNEY THROUGH MODERN BIOCHEMISTRY

Essays in Biochemistry

Vol. 1. Edited by P. N. Campbell and G. D. Greville. Pp. xi+170. (Published for The Biochemical Society by Academic Press, London and New York, 1965.) 18s. 6d.

THE major purpose of *Essays in Biochemistry* is to provide the advanced student with an annual group of essays, less detailed than the usual specialist reviews, at a price that is within the scope of students' budgets.

In addition, the editors hope the essays will be helpful to teachers and research workers as a vehicle to transport them to sectors of the biochemical front where they are not personally engaged. With the ever-increasing diversification and pace of biochemical research, the second objective seems at least as important as the first.

Volume I opens with an account by H. G. Wood and M. F. Utter of the role of carbon-dioxide fixation in metabolism. The three main mechanisms of carbon-dioxide fixation, which involve formation of carbon-carbon bonds, are described and the metabolic significance of such reactions in gluconeogenesis, fatty acid synthesis and metabolism of propionate is critically assessed. The second essay, by R. E. Davies, describes the gradual elucidation of the mechanism of muscular contraction. Although the author begins with the ancient Greeks, he rapidly progresses through the important pre-war work of R. Hill, K. Lohmann, W. A. Engelhardt and others to the massive effort which has been undertaken in the past two decades and finally to his own detailed theory. One is left with the impression that the time is ripe for a determined effort to investigate the mechanism of muscular contraction at a molecular level. The important problem of determining nucleotide sequences in nucleic acids has been surveyed by K. Burton. After describing the analytical methods used for the separation and determination of fragments of nucleic acids, the author discusses enzymatic and chemical methods of degrading nucleic acids and determining the sequence of oligonucleotides. The prediction that the complete sequence of transfer ribonucleic acids will soon be known has already been vindicated by Holley *et al.* (*Science*, 147, 1462; 1965). The remaining articles on oxidative phosphorylation (D. E. Griffiths) and the photosynthetic electron transport chain in plants (R. Hill) are closely related. These are difficult subjects, both for the student and the research worker, and the authors have produced excellent accounts of them by leaving out a lot of detail and work which is of nebulous significance at the present state of our knowledge. The final article in particular is written in a refreshing style; it requires considerable courage to summarize a lifetime's work in a few pages and devote a significant proportion of the available space to indicate the problems that remain to be solved. R. Hill's account of the knowledge that accrued from his early work on haematin and haemoglobin should be an object-lesson to young research workers to familiarize themselves with work that is proceeding in fields contiguous to their own.

For me, it has been a rewarding experience to journey through these carefully distilled accounts of present-day important topics to within sight of our present horizons.

D. T. ELMORE

ENGLER REVISED

Syllabus der Pflanzenfamilien

Von A. Engler. II Band: Angiospermen-Ubersicht über die Florengebiete der Erde. Zwölfte völlig neugestaltete Auflage. Herausgegeben von Prof. Hans Melchior. Pp. 666. (Berlin-Nikolassee: Gebrüder Borntraeger, 1964.) 110 D.M.

ENGLER'S *Syllabus* has been a valued work of reference for systematic botanists since its first publication in 1892. With the appearance of the present volume covering the angiosperms the twelfth edition is completed, the volume dealing with the wide range of organisms from bacteria to gymnosperms having been published eleven years ago.

The volume has been completely rewritten by eleven contributors, the whole being edited by Prof. Hans Melchior. The numerous illustrations are all new, the old blocks having been destroyed during the Second World War. Many of the well-known, one may almost say