

American tone of the book generally must reduce its usefulness outside the United States. The presentation of the encyclopaedia is pleasing, but that of the dictionary is not, and although the editors have clearly done wonders in saving space, unfortunately this is at the expense of the layout. One criticism of the encyclopaedia is that no bibliography is appended to any of the articles, though this would considerably increase the usefulness of the volume. However, these two books together make an excellent standard reference for chemists of all leanings.

A. M. MARSHALL

FOUNDATIONS OF GEOLOGY

Principles of Lithogenesis

Volume 1. By N. M. Strakhov. Translated by J. Paul Fitzsimmons. Edited by S. I. Tomkeieff and J. E. Hemingway. Pp. vii+245. (New York: Consultants Bureau; Edinburgh and London: Oliver and Boyd, Ltd., 1967.) 120s.

MAINLY for political and linguistic reasons, the development of scientific ideas in the Soviet Union has followed a course somewhat different from that in the west. The appearance in English translation of a geological book widely influential over the past five years in its own country is therefore an event to be welcomed by all engaged on research in sedimentary geology, no matter how one eventually judges Strakhov's evidence and theses. Strakhov subordinates to climate all other factors which can be shown to exert an influence on the characteristics of sediments and sedimentary formations. The present volume—the first of three—introduces his ideas on the production, transportation and deposition of sediments under different climatic regimens. In the final chapter of the volume a sketch is given of the changing distribution of climate through Phanerozoic time. The sweep of Strakhov's ideas cannot but excite admiration for their author. His development of them is, however, perhaps too diffuse and dogmatic, as well as wanting in seemingly decisive evidence, to have aroused conviction in me. Nevertheless, a reading of this book provided a stimulating exercise in the comparative methodology of the study of sedimentary rocks. One looks forward to the two later volumes.

The translator has served Academician Strakhov well. The editors might have included, with enormous advantage to the reader, an outline geological map of the Soviet Union and an index map of the places referred to, while a glossary of terms would also have helped. Many of the figures would have been improved by redrawing, and they often lack any indication of scale. There are some annoying typographical errors and blemishes. The price is considerable for a book of 245 pages. J. R. L. ALLEN

PETROLEUM GEOLOGY

Géologie du Pétrole

By Alain Perrodon. (Bibliothèque de l'Ingénieur-Géologue.) Pp. viii+440. (Paris: Presses Universitaires de France, 1966.) n.p.

THE North Sea has yielded up some of its hidden treasures in the way of the recent gas discoveries. The drill has not only tapped the underground reservoirs, but has also checked the forecasts of those geologists who have, since the subject began, studied the sedimentary rocks of the North-West Europe geological province. This checking of hypotheses and adding to the existing fund of knowledge are part of the service provided by oil companies all over the world. This service is a *quid pro quo* for the valuable preliminary information provided by those teaching

geologists who study their own local problems. It is advantageous for the oil geologist to have his fellows at the university aware of his needs, and a comprehensive work such as that written by Dr. Perrodon serves this purpose well.

Oil is mostly formed in shallow marine conditions, and therefore its geological association is with sedimentary rocks. The study of oil formation has led to research in geochemistry, and the oil companies have pioneered such powerful geochemical tools as the gas chromatograph. The behaviour of oil in its reservoir rock poses problems similar to those met in hydrological studies. There are many other ways in which commercial searching for petroleum impinges on geological subjects and they are well set out in this book.

The four main sections of the book cover (a) the reservoir rocks; (b) petroleum, its formation, migration and change of character; (c) the typical oil traps and estimation of reserves of oil and gas; and (d) the petroliferous areas of the world and their geological characteristics. The last section is a dangerous one; there are many parts of the world, such as Kuwait, Bahrain or Saudi Arabia, which were turned down by expert opinion in the past. This author, however, provides a most interesting approach to the world distribution of oil.

There are many good books on petroleum geology in English, so that it is possible that this one does not warrant an English translation. It will, however, be invaluable in those new oil areas which were part of the old French colonial empire. T. F. GASKELL

CONSIDERING DRIFT

Continental Drift

Edited by G. D. Garland. (The Royal Society of Canada Special Publications, No. 9.) Pp. 140. (Toronto: University of Toronto Press; London: Oxford University Press, 1966.) 48s. net.

THIS volume consists of nine chapters, each based on a paper given at the meeting of the Royal Society of Canada at Charlottetown in 1964. The first five bear on general ideas of continental drift; the last four are detailed papers on aspects of the Arctic and eastern seaboard areas of Canada.

The first paper is a review by J. Tuzo Wilson of some rules for continental drift. It has the piquancy one associates with the author, who for long opposed the idea of drift because his own early field-work in the Canadian shield did not suggest anything other than long stability and continuity. This chapter is deliberately limited in its aims; those who seek an exhaustive critique may be somewhat disappointed, but all who are concerned with continental drift will find much to stimulate thought in Wilson's consideration of grabens, rifts, mid-ocean ridges and large transcurrent faults. G. F. Macdonald follows with a chapter on mantle properties and continental drift, in which he discusses some of the contradictory views that may be held about the mantle, and in particular about long- and short-term "strength", mantle-crust decoupling and mantle correction, and the interpretation of heat-flow measurements. He is a well known opponent of the mantle convection explanation for continental drift, and his clearly stated arguments are most valuable to the general discussion. His emphasis on the likelihood of creep-strength in the outer mantle being relatively low, and on the dynamic consequences, is very strong. The palaeomagnetic evidence is discussed by E. R. Deutsch in a concise and useful way. The possibilities arising from polar wandering, from continental drift, and from combinations of these are explored, and the use of palaeomagnetic evidence to test ideas of an expanding earth (in which the continental crust does not