

**Advances in Geophysics**

Edited by H. E. Landsberg. Vol. 3. Pp. x+378. (New York: Academic Press, Inc.; London: Academic Books, Ltd., 1956.) 8.80 dollars.

THE term geophysics has become synonymous with the study of all physical aspects of the Earth. There is no better indication of this than in this series of "Advances in Geophysics" with its wide range of subjects. The third volume includes a preliminary account by A. P. Crary on Arctic ice-land research, in particular Fletcher's Ice Island (T3), occupied during 1952-54. Byerly contributes an excellent article on crustal structure based on seismic evidence, reviewing all work from 1900 to the present day. His discussion of the peculiarities of travel-time curves is warmly recommended to all seismologists. A third article, contributed by Bullard, Maxwell and Revelle, summarizes the progress of heat-flow measurements through the oceans' floors. One cannot avoid a sense of wonder that it is possible to measure heat-flows as small as 0.5 microcalorie per square centimetre per second at such remote places. The thermal properties of the Earth are treated on a broader basis by Jacobs in an article on the interior of the Earth. Well-logging methods, in so far as they assist in the search for ground-water, are treated in outline by Jones and Skibitzke. This article, the first of its kind in book form on the application of geophysics to hydrology, discusses the self-potential, resistivity and radioactivity logging instruments and the important part they play in ground-water investigations in the United States. There is a contribution by Sekera on the polarization of light in the atmosphere and, of current interest, an account by Singer of the experimental possibilities of artificial Earth satellites. Each author has supplied an ample bibliography with his contribution and at the conclusion of the article presents a list of the symbols used together with their explanation—a debatable practice. A number of typographical and grammatical errors occur in the text.

S. H. HALL

**Supplement to Mellor's Comprehensive Treatise on Inorganic and Theoretical Chemistry**

Prepared under the direction of an Editorial Board. Supplement 2, Part 1: F, Cl, Br, I, At, including the Radiochemistry and Radiation Chemistry of the Halogens. Pp. lii+1153. (London and New York: Longmans, Green and Co., Ltd., 1956.) 170s. net.

THE first edition of the handbook of chemistry by Leopold Gmelin appeared in 1817, and the latest edition is at present in course of publication. Whether its English counterpart, the treatise of Mellor, will have such a long life, only the future can show. In most editions of Gmelin, a new one was begun before the preceding one was completed, but the editors of Mellor have adopted what is probably a better plan, of issuing supplementary volumes to bring the whole work up to date. The first of these has now been published. Although on the same plan as the original, it has some better features. Instead of the solid blocks of literature references, without any apparent organization, the present volume has numbered references to fairly short sequences, the page references to which are given at the foot of each page of the text. This makes the book very easy to use. The text is obviously based on a careful study of original sources and is more critical than Mellor's, although this has not been overdone; 'obsolete' material has a habit of coming

to life again in inorganic chemistry. Numerical data, curves, and diagrams of structures are freely given, and the descriptions of experimental methods are adequate. It can safely be said that if later volumes are as good as this one, the book will be worthy of Mellor's work. The volume is quite indispensable in all chemical libraries.

J. R. PARTINGTON

**Solvents**

By Dr. Thomas H. Durrans. Seventh edition, revised. (Volume 4 of a Series of Monographs on Applied Chemistry.) Pp. xv+244. (London: Chapman and Hall, Ltd., 1957.) 30s. net.

THIS is the well-known monograph to which one instinctively turns when seeking information on solvents. First published in 1930, it has now reached its seventh edition, which is sufficient indication of its usefulness and of the determination of its author and publishers to keep it up to date. The present edition retains the same general structure as its forerunners. The first part discusses the more theoretical aspects of the subject with chapters on solvent action, solvent power, plasticizing solvents, solvent balance, viscosity, vapour pressure, inflammability and toxicity; while the nine chapters in the second part deal in detail with the characteristics and uses of the individual solvents and plasticizers. Very useful appendixes give a comprehensive list of trade names with probable compositions, solubility tables and plasticizer proportions. The list of trade names now runs to more than six hundred entries and the solubility tables give information on the solubility of twenty-seven different substances such as cellulose acetate, rubber, gums and oils in more than a hundred different solvents. The volume is of convenient size and well produced.

E. H. NURSE

**Extraction and Refining of the Rarer Metals**

Proceedings of a Symposium on Extraction Metallurgy of some of the Less Common Metals arranged by the Institution of Mining and Metallurgy, held on 22nd and 23rd March 1956, at the Royal Society of Arts, London. Pp. xviii+444+14 plates. (London: Institution of Mining and Metallurgy, 1957.) 60s.; 8.50 dollars.

THE subject-matter of this Symposium is one in which considerable developments are occurring, but known only to a limited number. The Institution of Mining and Metallurgy is, therefore, to be congratulated on presenting these papers and discussion to a wider audience. The papers deal with eleven of the less common metals, but uranium, vanadium, niobium and beryllium are the ones receiving most attention. Broadly, two kinds of information are to be obtained from the proceedings. On one hand, as is to be expected, there are details of processes for specific metals; on the other, there is considerable information in more general terms on the principles of various techniques, including a number of new methods, such as ion-exchange and solvent extraction for the claiming of values from leach liquors. Although the theme is predominantly chemical, there is some reference to the physical processes of ore-dressing. Apart from this specific technical matter there is revealed in a general way the considerable stimulus and development in extractive metallurgy brought about by the need for some of the newer metals and principally uranium. Moreover, it is edifying to see the position which has already been reached.

A. R. BAILEY