

A particular highlight is the chapter which treats considerations in planning exponentials. The experience of all the laboratories is drawn upon, and the planning of exponentials is discussed in a manner that will be very helpful to new workers in the field. In the theoretical interpretation of the experimental data, it is assumed that the reader has a knowledge of elementary reactor theory; consequently, this is not a book for beginners. At the end of each chapter, a list of pertinent references is included. This monograph will be a useful addition to the libraries of reactor physicists and engineers.

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Lithium and Sodium

Mellor's Comprehensive Treatise on Inorganic and Theoretical Chemistry, Supplement. vol. 2, suppl. 2, *The Alkali Metals*, pt. 1, *Lithium and Sodium*. Wiley, New York, 1961. xxxix + 1458 pp. Illus. \$45, until 31 May 1962; \$55.

The tremendous rate of growth of the body of chemical knowledge is illustrated by the difference between supplement 2 to volume 2 of *Mellor's Comprehensive Treatise on Inorganic and Theoretical Chemistry* and the original volume 2, published 40 years ago and covering the halogens and the alkali metals in 894 pages. The present part 1 of volume 2, supplement 2, covers only lithium and sodium and requires 1458 pages of text to do so. This supplement is the work of 25 contributors, with an editorial board of four, "presenting an enormous mass of information in the form of a collection of monographs having the same general pattern but individual qualities reflecting the author's judgment." The enormous bibliography is distributed among the 41 sections, which list at the bottom of every page the page number of the pertinent reference list. The literature references date largely from the period 1922 to 1952, although some are earlier and a few are as late as 1957.

The few mammoth works of this sort published in the past have tended to be condensed abstracts of literature and compilations of data, often uncritical. The very nature of such a work often renders this difficult to avoid, but the

presentation of the material as a collection of monographs minimizes this tendency and occasionally makes for interesting reading. For example, on page 65, the brief discussion of the atomic weight of lithium and the possible effect on it of slight variation in isotopic composition is extremely interesting. These monographs are systematically selected to give complete and logical coverage, but a more extensive index would increase the utility of the volume.

The binding of the book is substantial, but the printing appears to be a photo-offset reproduction of a type-written manuscript. The spacing is sometimes uneven, and many of the letters, particularly the capitals, are not adequately reproduced in the review copy. However, I will not complain, if the economy practiced in the reproduction of this volume makes available a considerable fraction of its high price for the financial recompense of the many contributors who have toiled long and effectively to make a great body of chemical and physical information more readily available to the scientific public.

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Russian Contributions

Electrochemistry of Fused Salts. I. K. Delimarskii and B. F. Markov. Translated from the Russian by Adam Peiperl. Reuben E. Wood, Ed. Sigma Press, Washington 7, D.C., 1962. xv + 338 pp. Illus. \$12.50.

Interest and activity in the electrochemistry of fused salts have greatly increased in recent years. In this country and abroad, a number of symposia have taken place or are being planned and the corresponding research literature is growing at a fast rate. Comprehensive treatises, however, have been lacking, a situation sadly characteristic of electrochemistry as a whole.

The present work, by two prominent electrochemists from the U.S.S.R. (each author is responsible for about one half of the book), is welcome for several reasons: it fills a real need, it makes available in digest form the abundant Russian contributions and gives access to them through numerous references (grouped at the end of each chapter), while at the same time it

presents what appears to be a fairly complete and comprehensive survey of the non-Russian work. The index of authors looks predominantly Slavic but most of the Western names one would expect to find are there also. The literature is covered to 1958, but there is no explicit indication of the year of publication of the Russian original. The introduction contains an interesting sketch of the history and of the present geographic distribution of Russian research in the field.

All topics are treated on the basis of a pleasant, easily assimilated balance between theory (vigorously and originally presented in most cases), experimentation, and examples (critically selected). Distributed in eight chapters we find, quite thoroughly treated: conductance, transfer, galvanic cells, decomposition and electrode potentials, solubility of metals, electrolysis and polarization, electrode processes, and polarography. Industrial applications are referred to but not considered in any real detail.

The footnotes contributed by the editor are helpful—for example, the addition of fundamental references to tables of thermodynamic properties published in the United States (page 124) and the critical examination of the authors' table of decomposition potentials (pages 125–128).

A subject index would be useful.

In spite of the authors' statement that their book "is not a textbook or a student manual" I suggest it would constitute an excellent point of departure for a graduate course or seminar.

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ACS Monograph Number 152

Crystallization, Theory and Practice.

Andrew van Hook. Reinhold, New York, 1961. ix + 325 pp. Illus. \$12.50.

The first of this book's six chapters is a historical review. With its wealth of literature references, this chapter may be the most valuable in the book, since it brings to the reader's attention things that developed before his time. But at least one of the developments that I recall is handled uncritically. The