

day knowledge of crystal structures. This book provides such an early account in the English language, as its purpose at the time was to provide an English language source of much that had been published in German or other languages.

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Crystallographic Data on Metal and Alloy Structures. Compiled by A. TAYLOR and BRENDA J. KAGLE. Dover Publications, Inc., 180 Varick St., New York 14, N. Y. 1963. 263 pp. 13.5 × 20.3 cm. Price, \$2.25.

In reviewing this compilation of crystallographic data, it is natural to compare it with the contents of Pearson's "Handbook of Lattice Spacings and Structures of Metals and Alloys" upon which it is heavily based. The new compilation presents only the structure type, space group, cell dimensions, and for some phases the three prominent *d*-spacings and the relative line intensities from the ASTM Powder Data File. References, atom positional parameters, and other experimental details are not given. Hence, the compilation is an updated version of Tables 7, 8, and 9 from Pearson's book.

A spot comparison made at several randomly selected points in the book revealed that Pearson's data compilation had been extended by some 10 to 20%. Errors were detected, however, in this relatively small sample. For example: AgGaTe₂, with *a* listed as 6.288 kX. in Pearson, is converted to 6.3007 Å., giving the impression of added precision which is unjustified. The conversion of kX. to Å. of *c* for the tetragonal form of AgInS₂ seems to be in error. The data on β-AgMg also disagree. Again, an error seems to have been made in the conversion of *a* for CePt₂. Pearson gives 7.714 kX., but Taylor and Kagle list 7.188. (This latter appears to be the conversion of 7.174.) Since it is unlikely that the few randomly sampled pages contain the only errors in the book, the user must beware in placing too much reliance on the values given.

The phases are not listed in a completely alphabetical fashion. As a result, any given phase must be searched for under all of its components. It would have been more useful to replace the catalog of Dover books at the end of the book with a summary of the atom positions and typical parameters of the various structure types.

The authors' intent of a compact low-cost summary of intermetallic phase data was an admirable one. It is too bad that it was defeated by errors and poor arrangement of data.

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Physical Inorganic Chemistry. By MICHELL J. SIENKO and ROBERT A. PLANE. W. A. Benjamin, Inc., 2465 Broadway, New York 25, N. Y. 1963. ix + 166 pp. 15 × 22.7 cm. Price, cloth, \$7; paperback, \$3.95.

This small book is one of the latest additions to the growing list of inorganic texts and monographs which have appeared in the past several years. Its purpose is evidently to present the basic principles of inorganic chemistry by applying physical concepts to inorganic systems. The list of topics covered—atomic and molecular structure, solid state chemistry, liquids and solutions, chemical kinetics and mechanisms—justifies the title. The coverage of all of these topics is very brief, in fact too brief to allow this book to have any real value as either a text for beginners or a reference for those who have only rudimentary knowledge of these topics and desire a somewhat more detailed presentation. Indeed, the principal question which has remained with

this reader after completing the book relates to its real utility and purpose. Judging from the Preface the function of this book is to serve as a general introduction for topics which have been or will be covered in specialized monographs in the Benjamin Physical Inorganic Chemistry Series. Considering those several monographs currently available in relation to the coverage of the appropriate topics in this volume, there seems to be no point in consulting this volume in the first place. In summary, the brevity and lack of depth apparent in the exposition of the above topics renders this book unsatisfactory as a textual source for these topics, which are covered on an introductory or advanced level far more satisfactorily elsewhere.

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RICHARD H. HOLM

The Chemistry of the Lanthanides. By T. MOELLER. Reinhold Publishing Corporation, 430 Park Ave., New York 22, N. Y. 1963. ix + 109 pp. 12 × 18.5 cm. Price, \$1.95.

The value of this paper-backed monograph is rather difficult to assess. Certainly its five chapters contain a wealth of essential facts of interest to most chemists, and it is written in a clear, concise, and interesting manner. The specialist in the lanthanide series will, however, be disappointed in its lack of depth, since it embodies only that information one would expect, but does not always find, in a general treatise on inorganic chemistry. Perhaps this is exactly what the author had in mind. In view of a rapidly developing technical interest in applications of rare earths, all candidates for the Ph.D. degree in chemistry should be informed regarding rare earths to approximately the level indicated in this booklet.

At the end of the monograph, the author has appended a 14-page account of the actinide elements which appears to be entirely proper and of some merit.

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BOOKS RECEIVED

May, 1964

HOWARD STEINBERG. "Organoboron Chemistry." Volume 1. John Wiley and Sons, Inc., 605 Third Ave., New York 16, N. Y. 1964. xxxii + 950 pp. \$33.

KAZUNOBU KODAMA. "Methods of Quantitative Inorganic Analysis." John Wiley and Sons, Inc., 605 Third Ave., New York 16, N. Y. 1964. xiv + 507 pp. \$22.

F. C. PHILLIPS. "An Introduction to Crystallography." 3rd Ed. John Wiley and Sons, Inc., 605 Third Ave., New York 16, N. Y. 1964. 340 pp. \$6.

J. W. MELLOR. "Supplement to Mellor's Comprehensive Treatise on Inorganic and Theoretical Chemistry, Volume 8, Supplement 1, Nitrogen Part 1." John Wiley and Sons, Inc., 605 Third Ave., New York 16, N. Y. 1964. lxxviii + 619 pp. \$50.

GIUSEPPE BRUNI. "Chimica Generale e Inorganica." 12th Ed. Tamburini Editore, Milan, Italy. 1964. xxii + 724 pp.

CLARENCE A. DISCHER. "Modern Inorganic Pharmaceutical Chemistry." John Wiley and Sons, Inc., 605 Third Ave., New York 16, N. Y. 1964. xii + 636 pp. \$12.

WILLEM BROUWER. "Matrix Methods in Optical Instrument Design." W. A. Benjamin, Inc., 2465 Broadway, New York 25, N. Y. 1964. xi + 290 pp. Clothbound, \$9; paperback, \$5.95.