

## Book Reviews

*Works intended for notice in this column should be sent direct to the Editor (A. J. C. Wilson, Department of Physics, University College, Cathays Park, Cardiff, Great Britain). As far as practicable books will be reviewed in a country different from that of publication.*

**Elektronenbeugung.** By ERNST BAUER. Pp. 240 with 120 illustrations. Verlag Moderne Industrie, München 2, 1958. Price DM 32.00.

This well written book of an author known for his sound work on epitaxial growth (*Z. Kristallogr.* (1956), 107) presents a survey of the theory, the instrumentation, and the application of electron diffraction, with a view of facilitating its use in industrial and other laboratories. The style is clear and condensed, adapted to a readership of full-fledged physicists or engineers who seek information on the merits of various instruments, on the advantages and limitation of electron *versus* X-ray diffraction, on the combination of electron diffraction and microscopy, and similar topics. (The instruments discussed are mainly those of Metrovick, Trüb-Täuber, RCA, and Hitachi.) The first 40 pages give a brief introduction to the theory, stressing the analogy with the theories of X-ray diffraction. This makes good reading to those who have the latter theory as a background, since it wastes no words. The various stages of approximation in the theories are well characterized (both for X-rays and electrons) with a view to showing where the validity of each step for the interpretation of observations ends. A valuable part of the book are the nearly 600 references to original papers (including many Russian and Japanese ones) in which points discussed in the text are more fully discussed. A short but well-balanced list of suppliers and a copious index conclude this useful book.

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### Boron - Synthesis, Structure and Properties.

Edited by J. A. KOHN, W. F. NYE and G. K. GAULÉ.  
Pp. xiv + 189. New York: Plenum Press, 1960. Price \$ 8.50.

This book contains 21 papers, sometimes revised in the light of discussion, presented at a conference held under U.S. Army auspices on 18 and 19 September 1959. They fall into three groups: Crystallization, purification and crystal growth; Crystal structure and bonding; and Fundamental physical properties; roughly in the proportions 2:1:1. The title of the book is somewhat misleading, in that many alloys of the  $MB_{12}$  type and some other compounds are included.

The structural papers include two on elemental boron, one by J. L. Hoard and another, describing a new tetragonal modification, by C. P. Talley, B. Post and S. La Placa. Alloys of the type  $MB_{12}$  and  $ReB_2$  are described by I. Binder, S. La Placa and B. Post, and five Al-B phases by J. A. Kohn. The interesting boron suboxide  $B_{12}(OBO)$  was found to occur in oxidation of B above 1100 °C. (H. F. Rizzo).

The book is photographically reproduced, with very satisfactory results for the typescript. The quality of reproduction of the many graphs and photographs varies; some are rather poor. One graph (Fig. [11] on p. 126) is without a legend and is turned through a right angle from its correct position. As with so many conference reports published by the Plenum Press, there is no index.

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**Advances in X-ray Analysis.** Edited by W. M. MUELLER. Three volumes. [x] + 494; 359; viii + 376. New York: Plenum Press, 1960. Prices \$ 8.50 (U.S.A.), \$ 10.00 (elsewhere); \$ 8.50 (U.S.A.), \$ 10.00 (elsewhere); \$ 12.00 (U.S.A. and elsewhere).

These volumes contain the text of most of the papers presented at the sixth (1957), seventh (1958) and eighth (1959) annual conferences on applications of X-ray analysis held in Denver, Colorado. Each volume contains about thirty papers on a wide variety of subjects, ranging from 'Project Vanguard' by H. W. Merrill in volume 1 to 'The Application of X-ray Diffraction to Medical Problems' by Jonathan Parsons in volume 3. Identification, fluorescence analysis, and stress analysis are perhaps the most popular topics.

Many of the individual papers are of great interest, and have not been fully published elsewhere. For those who have not attended the conferences, however, their usefulness is decreased almost to the vanishing point by the entire absence of indexes. Perhaps volume 5 could contain cumulative author and subject indexes?

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**Petrographie (Gesteinkunde).** By W. BRUHNS and P. RAMDOHR. (Sammlung Göschen, Band 173). Fifth enlarged edition, paper bound, pp. 141. Berlin: Walter de Gruyter and Co., 1960. Price DM 3.60.

This revised edition of a well-known work maintains the standard of the Göschen series. It would form a good introduction to the subject, or a good review for examination purposes, or (for non-German readers) a good method of learning the technical vocabulary. There is no strictly crystallographic material.

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