

constants in substantial agreement with the values W. Voigt obtained laboriously from about 15,000 single measurements on a multitude of oriented sections of many individual crystals. The theory of the effect is a beautiful combination of crystal dynamics and diffraction; it is closely related to L. Brillouin's theory of thermal scattering of X-rays, and it also is reminiscent of the dynamical theory of X-ray diffraction, especially in operating with surfaces in Fourier space for the study of simultaneous diffraction of light by several systems of elastic waves in the crystal. The essential ideas and results of the theory are explained in the book, but details have to be read in the original papers.

Bergmann's treatment is biased towards the experimental side. While the gist of the explanations of the phenomena is well given, the presentation is often not mathematical enough in detail to admit a quantitative understanding. Unfortunately, this holds also for the (new) Chapter 1 on the physics of the ultrasonic field; this should be thoroughly overhauled for the next edition so as to make it a fool-proof introduction worthy of the high standard of the book.

P. P. EWALD

*Polytechnic Institute
Brooklyn 1, N.Y., U.S.A.*

Structure Reports for 1945-1946. Edited by A. J. C. WILSON, C. S. BARRETT, J. M. BIJVOET and J. M. ROBERTSON. Pp. viii+325 with many figs. Published for the International Union of Crystallography. Utrecht: N.V. A. Oosthoek's Uitgevers Mij. 1953. Price 45 Dutch florins.

Volume 10 of *Structure Reports* covers the years 1945-6 and its late appearance is in accord with the scheme for progressively closing the gap with the old *Strukturbericht*, working at the same time backward and forwards. There is little to be said about the actual presentation of the material that has not already been said about Volumes 11 and 12 (*Acta Cryst.* (1952), 5, 299; (1953), 6, 671). The standard of coverage and the clarity of description has been well maintained. The main criticism lies in the very difficult problem of order and ease of reference.

As to the first, it is probable that little can be done in the absence of a really systematic crystal chemistry to improve on the frankly arbitrary method employed: purely alphabetical in the metal section, conventional chemical in the rest. This results, however, in separating, often widely, substances of intrinsically similar structures, as for instance Al_2Br_6 on p. 104 and KFeS_2 on p. 124. It further ensures that these volumes cannot be read, but must be treated as for reference only. Here the indexes, particularly the formula index, have come in for some criticism. It is not difficult to use, but the chemists have a strong case for the use of a scheme with which they are already familiar, for after all the users of the index will largely be chemists. Crystallographers will find what they want by looking through the sections. I may say that I have, myself, used this and other volumes of the reports for more than one systematic search, and though I have been a little irritated by the order have always succeeded in finding what I wanted.

The value of the reports will only fully be realized when the whole series is completed and the gap of the war years is filled up. Then it should form an essential basis of systematic crystal chemistry. The structures available in one year do not form a unity. Two years are covered by Volume 10 but the years 1945-6 were necessarily poor years, largely presenting structure investigations undertaken during or even before the war. The fact that much time has elapsed since then has ensured that the important results have already become familiar to crystallographers and little would be gained by discussing them again here. The period was a transitional one just entering into the modern phase of three-dimensional refined analysis, as exemplified by the classical exact determination of geranylamine hydrochloride (p. 218) and the three-dimensional analysis of camphor and cholesteryl iodide (p. 288). Among inorganic compounds the most interesting were the multi-metal complexes of Al_2Br_6 (p. 104) and of Mo_6Cl_8 (p. 132), while in the metallic section we find an extensive study of NiAs-type structures (p. 26) and of high-melting-point carbides (p. 38).

J. D. BERNAL

*Birkbeck College
London W.C. 1
England*

Books Received

The undermentioned works have been received by the Editors. Mention here does not preclude review at a later date.

The Theory of Cohesion. By M. A. JASWON. Pp. viii+245 with 42 figs. London: Pergamon Press. 1954. Price 37s.6d.

Structure Reports for 1950. Edited by A. J. C. WILSON, N. C. BAENZIGER, J. M. BIJVOET and J. M. ROBERTSON. Pp. 643 with many figs. Published for the International Union of Crystallography. Utrecht: N.V. A. Oosthoek's Uitgevers Mij. 1954. Price 80 Dutch florins.

Einige Fragen zur Theorie der Lumineszenz der Kristalle. By E. I. ADIROWITSCH. (Translated from the Russian by H. Vogel.) Pp. 298 with 123 figs. Berlin: Akademie-Verlag. 1953. Price DM. 19.

Untersuchungen über die Elektronentheorie der Kristalle. By S. I. PEKAR. (Translated from the Russian by H. Vogel.) Pp. viii+184. Berlin: Akademie-Verlag. 1954.