also includes a condensed review of elementary genetics and cytogenetics, as well as long chapters on nonhereditary variation. The explanation may be inferred from the last chapter. Here the author, although fully aware of the genetical study of evolution and its results, confesses rather cautiously, reiterating that most evolutionists will not follow him, that he is not satisfied with modern evolutionary ideas. He still thinks that a modified kind of doctrine of inheritance of acquired characters of the type proposed by Baldwin and Schmalhausen will be needed, and he feels the additional need, expressed in a noble spirit of self-criticism, for a finalistic philosophy in order to understand evolution.

In these days of standardization of scientific ideas it is wholesome to listen, at least occasionally, to different views if presented so well by a first-rate scholar.

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Selected Topics in X-Ray Crystallography from the Delft X-Ray Institutes. J. Bouman, Ed. Amsterdam: North-Holland Pub.; New York: Interscience, 1951. 375 pp. $11.00.

The Delft X-Ray Institutes, located at the Technical University of Delft, comprise three x-ray laboratories with a total of 62 years of experience in fundamental research and in the application of x-ray structure determination to metallography, biology, and rubber. Although each laboratory has its own special interests, results are mutually exchanged, and this cooperation is clearly reflected in the present publication, which consists principally of reports of research carried out during the past decade. The subject matter is divided into a series of eight interrelated monographs, each of which is complete in itself. Credit for authorship goes chiefly to J. Bouman, but many others, including W. G. Burgers, J. M. Goppel, and J. A. Prins, have contributed major sections.

The volume is primarily concerned with the study of materials in which deviations from the ideal lattice structure occur, rather than with the direct investigation of crystal structure. Nevertheless, Part A is devoted to the latter problem and briefly discusses pertinent points, such as termination effects in Fourier syntheses and the increase in breadth of Debye-Scherrer lines produced by small crystal particle size. The subject of lattice distortions is first approached by a study of the results of metallographic investigations (Parts B and C), and a general theory is presented to explain the decrease of intensity and broadening of the lines in powder films. Macromolecular substances with lattice deviations, such as rubber, waxes, and starch, are examined in Parts G and H, where new data is presented to discount Fields' original work on rubber. Controversial problems still persist in these two fields, and satisfactory correlation between the results from different methods are difficult to obtain. Part H, on biological compounds, contains a well-detailed account of a micromethod for x-ray diffraction.

Applications of chemical interest are included in Part D, dealing with the photographic process, and in Part F, where an exhaustive account of quantitative analysis by x-rays is given. Part E, concerned with problems relating to liquids, glasses, and amorphous substances, is the most readable section, probably because of the fine sense of humor portrayed by the author.

Because of the wide diversity of topics presented, each monograph is necessarily concise, but nevertheless surprisingly complete—as a critical survey of contemporary developments is generally included along with a number of well-chosen references for those who wish to pursue the subject further. Although much of the material has been published previously, it was in various European journals not readily accessible during the war. This is corrected in the present volume. In addition, later data and new aspects have been included, particularly in the sections on the investigations of rubber and biological compounds.

Being a first edition, the book contains a number of misprints and notations that are inadequately defined. There are also spellings and abbreviations that will be unfamiliar to the American reader. This is not surprising for a book printed in the Netherlands. Nevertheless, these do not impair the usefulness of the volume to those who wish to broaden their concepts and increase their knowledge of the applications of x-ray techniques. This comprehensive book will add to the fame of the Delft X-Ray Institutes.

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Scientific Book Register

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