Mössbauer spectroscopy (D. B. Brown) and other spectroscopic methods (J. H. Clark). Finally, the fourth part is devoted to different classes of mixed-valence materials and their importance for various fields of research. Here the significance of mixed-valency concepts in the chemistry and physics of inorganic and organic linear-chain compounds or of clusters and polymetallic centres, which are also of interest for biologists, is emphasized. The importance of mixed-valence properties with respect to the colour and the electronic spectra is reviewed in two chapters on mixed-valence minerals and heteropoly blues.

The most important aspects of mixed valency in theory and applications are well documented and represented in the four parts of the Proceedings. Though the quality of the articles is not equally high in all cases the reviewer considers the book comprehensive and very useful. It can be warmly recommended not only to those who are directly involved in mixed-valence chemistry but also to those who want to become acquainted with this interesting and promising field of research.

D. REINEN

Fachbereich Chemie
Universität Marburg
D-3550 *Marburg*
Federal Republic of Germany

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Fiber diffraction methods. Edited by A. D. FRENCH and K. C. H. GARDNER. Pp. 518. American Chemical Society, 1980. Price US $35.50.

Although this book is a collection of papers presented at a symposium, *Diffraction Methods for Structural Determination of Fibrous Polymers*, held during the 178th Meeting of the American Chemical Society (September, 1979), it seems to cover most of the current problems in the field making it a state-of-the-art volume. A thorough treatment of fiber diffraction theory by S. Arnott, given in the first chapter, constitutes a good introduction for readers with other backgrounds. Volumes of this kind are particularly welcome since relatively few such publications appear in this field.

While Vainshtein's well known book *Diffraction of X-rays by Chain Molecules* (Elsevier, 1966) mainly dealt with the theoretical aspects, the present volume gives much space to the technological aspects. This seems to be quite relevant since the last 15 years have seen much progress in the methodology (owing to innovations in instrumentation and computers), including the use of the two-dimensional film scanner in assessing the diffraction intensity, the sophisticated simulation of diffraction patterns taking even the disorder of the object into consideration, and various techniques of refining molecular structures against diffraction intensity, all of which are treated in this book. The latter half of this book is devoted to studies on individual polymers. These include poly(*p*-phenylene), cellulose, chitin, poly(tetramethylene terephthalate), α-1,3-D-glucan, curdlan, (bacterial) polysaccharides, amylose and polynucleotides (both synthetic and natural). Another volume dealing with more biological objects including fibrous organellas is perhaps needed.

Because of the flourishing of protein single-crystal crystallography, the role of fiber crystallography, especially in the field of biopolymers, tends to be underestimated. However, by considering just the recent heated arguments on the extent of the structural variety (including the reversed hand of the screw sense!) that DNA can accommodate (treated by S. Arnott) and dynamical studies of fiber diffraction using synchrotron radiation (not treated), the lasting value of this older field of diffraction is clear and I wish to express my appreciation of the serious and painstaking efforts made by such people as the authors of this volume who remained in this field despite the vogue to escape to other fields. The book is well produced and easy to read, despite being the reproduction of the camera-ready forms submitted by the authors.

Y. MITSUI

Faculty of Pharmaceutical Sciences
University of Tokyo
Bunkyo-ku
Tokyo 113
Japan

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Books Received

The following books have been received by the Editor. Brief and generally uncritical notices are given of works of marginal crystallographic interest; occasionally a book of fundamental interest is included under this heading because of difficulty in finding a suitable reviewer without great delay.

Electrical transport in solids, with particular reference to organic semiconductors. By K. C. KAO and W. HWANG. Pp. xx + 663. Oxford: Pergamon Press, 1981. Price £50·00, US$120.00. A review of this book, by D. D. Eley, has been published in the January 1982 issue of *Acta Crystallographic*, Section A, page 174.

The analytic theory of point systems. By J. D. BERNAL. Pp. xiv + 135, 1923. Published in facsimile and available at £2·50 + postage (30p in the UK) from A. L. Mackay, Dept of Crystallography, Birkbeck College, London WC1E 7HX, England. The name of J. D. Bernal requires no introduction to crystallographers. What is not so well known is that Bernal's first scientific paper was never published. It was written when J. D. was a student – and a rather shy one – at Emmanuel College, Cambridge. Considered to be too long for publication, it did earn him a £30 prize and, more important, a post with Sir W. H. Bragg, which set him on his crystallographic career. This paper, once surviving at Birkbeck College only as a single copy, has now been duplicated and is available, as above, through Dr A. L. Mackay. Introductory notes, by Dr Mackay and by Professor R. Schwarzenberger, are included.