spin. Chapter 6, "Elements of Hydrodynamics", is on relativistic hydrodynamics. The final chapter on "Spinors", is the longest one in the book and introduces spinors from the point of view of the unimodular group, connects this with the Lorentz group, generalizes to spinor-tensors, considers irreducible representations of the Lorentz group specializing finally to the Dirac case.

It is clear from this description that the author intends to provide a background for the many applications of relativity theory but most particularly for the application to the theory of elementary particles and quantum field theory. The development is entirely formal in both tone and approach. Generally topics are introduced in terms of a possible mathematical system, the connection to physics being made afterwards. With the exception of the Michelson-Morley experiment, the experimental side of the subject is not considered. In a certain sense the text treats the special theory of relativity as a branch of mathematics with physical overtones. This is a possible point of view but one which does not appeal to this reviewer since he feels that the relation of the theory to experiment is of central importance and from a more didactic point of view that physical intuition is so useful in providing motivation and illuminating methods. However, within the framework of the author's philosophy, his exposition is on the whole, careful and lucid. It is of course interesting to see how far one can go with a formal approach.

Optical Crystallography: With Particular Reference to the Use and Theory of the Polarizing Microscope (3rd Revised Ed.). By Ernest E. Wahlstrom. 356 pp. John Wiley & Sons, Inc., New York, 1960. $8.50. *Reviewed by I. Fankuchen, Polytechnic Institute of Brooklyn.*

A BOOK on so restricted and specialized a subject as optical crystallography must serve a real need if a third edition appears after a lapse of about fifteen years from the first edition. It is certainly the case with this manual on how to look at crystals, particularly in polarized light. The book is profusely illustrated with beautiful drawings; approximately one hundred new ones appear in this edition. Yet it was this very overwhelming supply of diagrams, the very great attention to detail, which made this book unusually difficult for this reviewer to comprehend. Inevitably the reviewer was led to compare it with another recent book on the same subject, i.e., the third edition of *Crystals and the Polarizing Microscope* by Hartshorne and Stuart. By comparison, Wahlstrom's book suffered. The two books overlap considerably. Where this happens, it is so much easier to dig out the desired information from the Hartshorne-Stuart book.

Professor Wahlstrom is a geologist; he is interested in minerals and the book therefore reflects his preoccupation with using data so obtained as an identifying tool. For him, this is why one looks at crystals. But surely this book would have been a more stimulating one if the author had troubled to point out that the

refractive indexes of crystals are not accidentally what they are, that indeed they derive from the internal arrangement of the atoms. Surely it would not hurt students of mineralogy to be prodded into wondering why quartz is optically positive and calcite negative! Despite these criticisms this book is a real contribution to the art of optical crystallography. If you use a polarizing microscope you should also have this book.

High Temperature Technology: Symp. Proc. (Asilomar Conf. Grounds, Calif., Oct. 1959). Edited by N. Hiester and D. Cubicotti. Arranged by Stanford Research Inst. 348 pp. McGraw-Hill Book Co., Inc., New York, 1960. $15.00. *Reviewed by Joseph Katz, University of Chicago.*

HIGH-TEMPERATURE chemistry and physics are currently in vogue. To the increasingly large number of scientists becoming interested in problems at elevated temperatures, this book, which is a collection of review papers on the techniques and measurements, the materials, the processes, and the behavior of materials at elevated temperatures, will be very useful. In the technique and material section, for instance, there are, among others, excellent articles on the precision and accuracy of temperature measurements above 1000°K and on image furnace research. In the materials section the articles deal mainly with refractory materials such as refractory metals, graphite, carbide, nitride, and sulfide refractories, etc. The section on processes has articles on high-pressure methods, fused salt chemistry, pyrometallurgy, condensed state reactions, and high-temperature chemical synthesis. The review article by Janz on fused salt chemistry is an excellent introduction and survey of the present model theories and experiments. One should bear in mind that the articles in this book are reviews. As such they are an invaluable introduction but due to limitations of time and space they are only introductions (with, fortunately, very extensive lists of references). In addition, this book contains a large section on high-temperature research abroad, covering the United Kingdom, France, Germany, Japan, and Scandinavia. This reviewer feels that a review of the high-temperature research in the Soviet Union would also have been of value.

Progress in Cryogenics, Volume 1. Edited by K. Mendelssohn. 259 pp. Academic Press Inc., New York, 1959. $11.00. *Reviewed by Robert L. Sproull, Cornell University.*

A NEW "Progress" series is initiated with this volume. Dr. Mendelssohn explains in his preface: "The aim of the present series is to provide summarizing articles on the whole field of low-temperature methods, as distinguished from low-temperature physics or chemistry. The ground to be covered ranges from the production, maintenance, and measurement of low