changes have been made. A separate chapter has been devoted to the relationship of optical properties to crystal structure with expansion of the subject matter and inclusion of laboratory experiments. The chapter on refractive index determination has been moved to follow the chapter on the study of materials by means of the polarizing microscope which is a more logical sequence of presentation than appeared in previous editions. The chapter on the polarizing microscope has been expanded to include a discussion and illustrations of the ellipsoids of revolution for the wave fronts and refractive indices of uniaxial and biaxial materials which are essential for an understanding of the interference phenomena observed with conoscopic polarized light. Also included is a colored reproduction of the Michel-Levy chart for birefringence.

The chapter on ultramicroscopy has been revised and enlarged to conform to the modern understanding of colloidal phenomena with emphasis on the continuity of colloid chemistry with surface chemistry. Laboratory experiments are included to emphasize this point.

Extensive reference is made throughout the text to the application of the electron microscope to the solution of chemical problems. The separate new chapter on the electron microscope, while it will give the student an appreciation for this field, unfortunately overemphasizes both the difficulties encountered in the use of the electron microscope as well as the difficulties in the interpretation of the results, which may discourage the student from a more serious look at this important tool.

The author has excellently integrated all of the recent developments in both instrumentation and methodology into this well-established "Handbook of Chemical Microscopy." The book is well indexed and referenced for background reading and, as a result of the extensive revisions made, will be even more considered the Bible of the student of chemical microscopy than its predecessors.

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Synthetic Methods of Organic Chemistry. Volume 12

W. Theilheimer. Interscience Publishers, Inc., New York, 1958. xvi + 546 pp. 16.5 × 23.5 cm. $22.25.

The preface to preceding volumes states the purpose of this annual publication: "New methods for the synthesis of organic compounds, improvements of known methods, and also old proved methods scattered in periodicals, are being recorded continuously in this book series." The usage of reaction symbols is defended on the basis of systematic classification without reference to trivial and author names.

Volume 12 lists 965 abstracts of organic syntheses which appeared between 1955 and 1957. A survey of the total references (1549) showed that the origins of the abstracts paralleled those presented for Volume 7 (THIS JOURNAL, **32**, 222 (1955)). They are as follows: (the percentages from Volume 7, from a sample of 250 abstracts, are given in parentheses) 56% American (60); 17.5% British (17); 12.7% German (9); 3.9% Swiss (5); 3.6% Russian (2); 2.2% French (4); 1.3% Czech (0); 0.5% Scandinavian (2); and 2.0% others (1). The others are from Belgium, India, China, Japan, etc.

"Synthetic Methods of Organic Chemistry" represents a valuable systematic survey for the professional organic chemist. Outstanding features include an index with excellent cross-references, a systematic survey of reaction symbols for Volumes 11 and 12, together with supplementary references to Volumes 11 and 12 and a subdivision of reagents. Volume 12 also includes a review, Trends in Synthetic Organic Chemistry, 1958, which is of great value to the seasoned organic chemist.

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The Theory of the Properties of Metals and Alloys

N. F. Mott and *H. Jones.* Dover Publications, Inc., New York, 1959. xiii + 319 pp. 108 figs. 14.5 × 21.5 cm. Paper bound. $1.85.

Elasticity, Plasticity, and Structure of Matter

R. Houwink. Dover Publications, Inc., New York, 1959. xviii + 368 pp. 214 figs. 40 tables. 14 × 20.5 cm. Paper bound. $2.45.

These classic works have been reissued in paper back. Anyone presuming to have a modern view of the solid state knows how valuable these books are. Worn out copies can now be replaced and many copies can be added to personal libraries. Thanks, Dover!

W. F. K.

Conference on Extremely High Temperatures

Edited by *Heinz Fischer* and *Lawrence C. Mansur,* Air Force Cambridge Research Center. John Wiley & Sons, Inc., New York, 1958. xi + 258 pp. Many figs. and tables. 22.5 × 28.5 cm. $9.75.

This book is apparently taken verbatim from tape recordings of a conference held March 18 to 19, 1958, in Boston, Massachusetts, judging from such sentences as the opening one "Good morning, I am Dr. Hollingsworth." It therefore suffers from all of the deficiencies of such literal transcriptions.

On the other hand, the illustrations are well done and many in number, the speakers are the top authorities in their respective fields, and their remarks, though disjointed and hard for a non-expert in the field to comprehend, are authoritative.

The book is divided into four sections: (A) The Production of Extremely High Temperatures, (B) Methods of Temperature Measurement—Optical Radiation, (C) Plasma Analysis, (D) Applications. Five or six papers are included in each division.

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The Infrared Spectra of Complex Molecules

L. J. Bellamy, Senior Principal Officer, Ministry of Supply, London. 2nd ed. John Wiley & Sons, Inc., New York. 1958. 30 Figs. xvii + 425 pp. 15 × 22 cm. $8.

Only four years have elapsed since the first edition of this book. The present edition is about 100 pages longer than the first; this is due in part to a new chapter on the origin of group frequency shifts, and part to more information put in the older chapters. Out of some 250 sections discussing specific group frequency and intensity shifts, twenty are new. The brief correlation tables have, in spite of this, been scarcely affected. The 30 figures are identical with the first edition.

In bringing the literature up to date, the author states he has added over 700 new references. A breakdown of this increase shows the greatest activity in carbonyl correlations, followed by the chapter on amides, proteins, and polypeptides. Discussion of other nitrogen compounds has been significantly expanded.

Many people will find the new chapter the most valuable addition, though it will surely generate debate; others will find the recent literature addition most helpful. While the first edition is not obsolete, most of those who purchased it will need to have the second.

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An Introduction to the Chemistry of Fats and Fatty Acids

F. D. Gunstone, Lecturer in Chemistry, The University of St. Andrews. John Wiley & Sons, Inc., New York, 1958. x + 161 pp. 16 × 25 cm. $6.

In this brief but fairly comprehensive treatment of the basic aspects of the chemistry of naturally-occurring fats and fatty acids, the needs of advanced undergraduate and beginning graduate students have been kept primarily in mind. It is assumed that the reader has a fundamental working knowledge of organic chemistry, but most of the more specialized reactions

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