

The book is well and clearly printed. Regardless of its merits, the book is a tribute to the energy and faithfulness of the many people who acted as compilers. It is proper that recognition be given to them.

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THERALD MOELLER

**A Short Guide to Chemical Literature.** Second Edition. By G. MALCOLM Dyson, M.A., D.Sc., Ph.D., F.R.I.C., M. I. Chem. E. Longmans, Green and Co., Inc., 119 West 40th Street, New York 18, N. Y. 1958. v + 157 pp. 14.5 × 21.5 cm. Price, \$3.25.

This new edition of a very useful, compact account of methods to examine the chemical literature so that nothing of importance may be overlooked is excellent. Any trained chemist can gain from this book an appreciation of the fundamental requisites for a thorough literature research. The clear directions, suggestions and illustrations are well designed to stimulate the ingenuity and imagination of a research man to investigate the published material in any chemical field.

The greater part of this guide is an annotated bibliography of the different types of chemical literature. This includes the primary and secondary sources which must be consulted to obtain sufficient background for intensive laboratory or theoretical study. The brief descriptions of the contents of the numerous publications will acquaint the reader with the extent and limitations of the material described. This bibliography, which is not intended to be complete, has a noticeable number of British authors and few items published since 1956. Special effort has been made to achieve greater completeness for the lists of treatises, encyclopedias and important journals. An unusual feature is a chapter on medical chemical publications.

The appendix contains valuable information about old and obsolete journals with their often unfamiliar abbreviations. It includes a series of tables to indicate the year and volume number of the most frequently consulted periodicals. A detailed example of an organic literature research problem which shows the many ramifications of such work which are often not realized by a beginner, is instructive. This small volume is likely to be a revelation even to an experienced chemist and a vital aid to the novice in the use of a chemical library.

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VIRGINIA BARTOW

**Advances in Protein Chemistry.** Volume XIII. Edited by C. B. ANFINSEN, JR., Laboratory of Cellular Physiology, National Heart Institute, Bethesda, Maryland, M. L. ANSON, London, England, KENNETH BAILEY, University of Cambridge, Cambridge, England, and JOHN T. EDSALL, Biological Laboratories, Harvard University, Cambridge, Massachusetts. Academic Press Inc., 111 Fifth Avenue, New York 3, N. Y. 1958. x + 524 pp. 16 × 23.5 cm. Price, \$13.80.

As pointed out by the editors in the preface this volume is unusual in that it contains only four review articles, three of them comprising some 440 pages. They take pains, however, to assure the reader that this type of issue does not represent a trend to be followed in the future. It is to be hoped that this is true, since one of the most appealing features of this series has been the incisive character of its reviews. Too great a length not only cuts down the variety of material which can be presented, but acts as a deterrent to the complete reading of individual articles.

The initial article on "Immunochemical Methods in Studies on Proteins" by P. Grabar is very short and has as its aim the suggestion of possible applications of immunochemical methods to important problems in protein structure as well as a means of identification and classification. Immunochemical methods and their limitations are briefly discussed.

Protein-carbohydrate complexes are discussed by F. R. Bettelheim-Jevons. Loose and non-specific protein-carbohydrate complexes are included as well as mucoproteins and

mucopolysaccharides. The subject is first taken up in a general way with a discussion of methods and of the structure and chemistry of the carbohydrate ingredients of the protein-carbohydrate complexes. The latter two-thirds of the article are devoted to individual discussion of mucoproteins and mucopolysaccharides from a very wide variety of sources. Most of the work presented has appeared since the previous review of Meyer (*Adv. Prot. Chem.*, 2, 249 (1945)).

The third article on the silk fibroins is by Lucas, Shaw and Smith. It not only contains a comprehensive review of the chemistry, physico-chemical properties and structure of the fibroins themselves, but a considerable amount of material on the natural history and biology of silkworms, the spinning process and silk technology in general. Emphasis is given to the problem of degradation in the discussion of silk fibroin in solutions.

The last article deals with the synthesis and chemical properties of poly- $\alpha$ -amino acids. It is a measure of the advances which have been made in this field in the past ten years that, though Katchalski and Sela exclude at the outset a systematic discussion of either the physico-chemical or the biological properties of synthetic polypeptides, there is still material enough to provide one of the longest reviews in the series. Typical topics presented are the synthesis and properties of the N-carboxy acid anhydrides, the mechanism and kinetics of polymerization, and the purification and characterization of the resulting polypeptides. A large number of individual polypeptides are discussed as well as copolymers, multichain polyamino acids and polymers which utilize carboxyl and amino groups other than those on the  $\alpha$ -carbon atom. There is little doubt but that this will be the key reference in this subject for some time.

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**Steroids.** By LOUIS F. FIESER, Sheldon Emery Professor of Organic Chemistry, Harvard University, and MARY FIESER, Research Fellow in Chemistry, Harvard University. Reinhold Publishing Corporation, 430 Park Avenue, New York 22, N. Y. 1959. xvii + 945 pp. 16.5 × 24 cm. Price, \$18.00.

The proverbial and rather overworked ending of book reviews "This book belongs on the shelf of every... chemist" applies to such an extent in this instance that I would like to start with this recommendation. I am not referring to the industrial or academic specialist in the steroid field, because he has almost certainly already purchased this book, but rather to the large number of chemical virgins in the steroid territory. I am addressing this recommendation to the physical-organic chemist who, out of laziness or fear, has not gone to the trouble of looking at the steroid literature and thus has missed a veritable gold mine of marvelous experimental substrates and challenging theoretical problems; to the synthetic organic chemist who can learn what stereospecificity and synthetic selectivity really mean; to the physical and instrumental chemist, who is interested in the general problem of applications of physical tools and measurements to organic chemistry—this being practiced to a wider and more refined extent with steroids than any other type of organic compound. Finally and perhaps most importantly, it is addressed to the chemistry student and his "non-steroid" professor because of the superb pedagogic value of steroid chemistry with all of its glamor and subtlety. The entire spectrum of organic chemistry—mechanism, stereochemistry, synthesis and structure proof—is placed before him in a unified whole with the additional bonus of extremely interesting biological and biochemical implications. This is what "Steroids" means and the Fiesers have painted this picture in the most brilliant colors possible. The question appearing in THIS JOURNAL, 80, 5007 (1958), "When is the next edition of Fieser and Fieser's steroid book coming out" has indeed been answered in triumphant fashion.

The presentation of the material differs considerably from that encountered in the usual steroid books including the third edition (1949) of "Natural Products Related to Phenanthrene" by the same authors. The new approach is best illustrated by listing the headings of the 22 chapters of the book: 1. Orienting Survey; 2. Investigation of Cho-