

volume. Present-day insect physiology, biochemistry, genetics, and the research on pesticides require experimental colonies of insects and related arthropods, and how to establish and maintain such colonies constitutes a major part of the book. The rearing of more than 50 different species is discussed in detail by scientists who have had often life-long experience in propagation and handling of insects.

Two final sections are devoted to rearing and mass production of insects which at least in one respect can be called beneficial: they either attack other insects (parasites and predators) or they can be used to destroy their own species (sterile insect release method). In distinction to insect colonies for research purposes, parasites, predators, and sterile insects have to be reared in tremendous quantities and formidable obstacles had to be overcome before the first "insect factory" became operational. In the successful campaign of eradication of the screw-worm fly by means of sexually sterile adults of the same species up to 150 million flies had to be reared, sterilized, and liberated every week. Although no other insects have ever been released in such numbers, the success of the sterility control method demonstrated the need for research on large-scale rearing of other insects. Procedures for mass rearing of screw-worm flies, tephritid fruit flies, and yellow fever mosquitoes are included in special chapters but the possibility of extending the scale of laboratory rearing of house flies, codling moths, pink bollworms, boll weevils, and cabbage loopers to mass proportions is mentioned in chapters on colonization of these insects.

Control of insects by artificially induced diseases or with specific toxins derived from insect pathogens requires mass rearing of a different nature. Insect viruses which cannot be cultivated in nonliving media need live insects for their propagation and a special chapter on this problem has been included.

This book is a required reading for all entomologists and biologists engaged in rearing of insects but it also provides a valuable support for the proponents of control and eradication methods involving mass rearing and release of insects.

U. S. DEPARTMENT OF AGRICULTURE      ALEXEI B. BOŽKOVIC  
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**Handbook of Non-Prescription Drugs.** Edited by GEORGE B. GRIFFENHAGEN. American Pharmaceutical Association, Washington, D. C. 1967. 108 pp. 28.5 × 22 cm. Paperback, \$4.00.

This handbook is to give pharmacists an insight into the composition of over-the-counter drug products, more than 1000 being listed. There are 22 categories according to use, and 2 pages of product index. For many, but not all, materials, generic and trade names and manufacturers are listed. The articles about each category were written, for the most part, by staff members of colleges of pharmacy and include hints concerning uses and recommendations to both pharmacist and patient.

UNIVERSITY OF VIRGINIA      ALFRED BURGER  
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**Mass Spectrometry of Organic Compounds.** By HERBERT BUDZIKIEWICZ, Technische Hochschule, Braunschweig, CARL DJERASSI, Stanford University, and DUDLEY H. WILLIAMS, Cambridge University. Holden-Day, Inc., San Francisco, Calif. 1967. vii + 690 pp. 18.5 × 25.5 cm. \$17.95.

The importance of mass spectrometry as an analytical tool for the organic chemist practicing his craft in these exciting days cannot be overemphasized. The near future will certainly accentuate this condition to the extent that a working knowledge of the elements of mass spectrometry will be considered an essential skill possessed by all organic chemists regardless of when their formal training was completed.

This book serves an important purpose in presenting a clear, complete, and timely account of what can be expected from mass spectral analysis of a wide variety of organic compounds. The general format is for each chapter (there are twenty-seven) to deal with a certain functional group in respect to modes and rationalizations of the major fragmentation processes. The types

of compounds discussed include all of the common functionalities plus oxygen, nitrogen, and sulfur heterocycles and organophosphorus and organometallic compounds. The Introduction (49 pages) is excellent in its presentation of the basics of organic mass spectrometry, what to look for, and the need for caution in interpretation.

An admirable feature of this book, as in others in the Holden-Day series, is the short period of time between completion of the manuscript and publication. In this case, the manuscript was completed in April 1967 and the book published in August 1967. The text, photographed directly from the typescript, is large and easy to read, the diagrams are clear, and the book is free from typographical errors. There are abundant references to the original literature and the copious use of bar-graphic representations of the data is effective.

All organic chemists should be familiar with this book. It is a bargain at \$17.95 and well worth owning.

DEPARTMENT OF CHEMISTRY      FRANCIS A. CAREY  
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**1,4-Cycloaddition Reactions. The Diels-Alder Reaction in Heterocyclic Syntheses.** Edited by JAN HAMER, Department of Chemistry, Tulane University, New Orleans, La. Academic Press Inc., New York, N. Y. 1967. xii + 500 pp. 16 × 23.5 cm. \$22.00.

This book, representing Volume 8 in the generally excellent series "Organic Chemistry—A Series of Monographs," edited by Alfred T. Blomquist, is not up to the standards of its predecessors. Part of the trouble appears to be faults common to multi-author works dealing with a narrow field. One of these is for topics to overlap so that one gets a feeling of *déjà vu* in going from one chapter to the next. A second failing is the enormous amount of time required to prod authors to complete their manuscripts (there are thirteen chapters and seventeen authors), collect, edit, and publish the manuscripts as a readable book. In this case there are no references later than 1964; the book was published in March 1967. This is not acceptable for a book at any price, and especially so for one as expensive as this.

Finally, a very subjective criticism: I did not think some of the subject matter either urgent or interesting enough to warrant review at this time.

DEPARTMENT OF CHEMISTRY      FRANCIS A. CAREY  
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**Lipids and Lipidoses.** Edited by G. SCHETTLE. Springer-Verlag, Inc., New York, N. Y. 1967. xiv + 622 pp. 17 × 25 cm. \$30.00.

This volume has its origins in the desire of the editor and a group of distinguished contributors to present an up to date, comprehensive review of the lipidoses, defined as hereditary disorders of lipid metabolism, in conjunction with an account of the current development of lipid chemistry and biochemistry pertinent to understanding these complex disease states. On the whole, the authors have admirably succeeded in presenting a readable and interesting account, which covers the subject in reasonable depth and/or provides ample references to original sources.

Part I, sub-edited by W. Stoffel and designated "Lipids" contains chapters entitled The Chemistry of Mammalian Lipids (W. Stoffel), Biochemistry of Triglycerides (B. Shapiro), Biochemistry of Steroids (D. Kritchevsky), Biochemistry of Phosphatides (R. J. Rossiter), Biochemistry of Sphingosine Containing Lipids (R. M. Burton), Lipoproteins (D. G. Cornwell), and Methods for Separation and Determination of Lipids (H. Wagener). This section, by far of greatest practical interest to the medicinal chemist, comprises less than half the book (210 pp).

The treatment of subject matter in these chapters ranges from what amounts to a cataloging of structures with brief commentary in the Chemistry of Mammalian Lipids chapter (*e.g.*, total of one

page on prostaglandins, which includes seven structural formulas), through quite thorough chapters by Kritchevsky and Shapiro, to a very extensive discussion of sphingosine-type biochemistry by Burton. The methods chapter by Wagener is particularly appropriate in this account of subject matter so fraught with experimental difficulty.

Part II, termed "Lipidoses," is larger, covering 318 pp. It is written in the style of a modern medical text and gives unusual, but proper, emphasis to the biochemical as well as the clinical and pathological aspects of the disease state. Three chapters entitled Gangliosidoses, Gaucher's Disease, and Niemann-Pick Disease were prepared by G. Schettler and W. Kahlke. Another set, Metachromatic Leucodystrophy, Angiokeratoma Corporis Diffusum (Fabry's Disease), Heredopathia Atactica Polyneuriformis (Refsum's Disease), A- $\beta$ -Lipoproteinemia, and Tangier Disease, was authored by W. Kahlke alone with the balance done as follows: Essential Hypercholesterolemia (G. Schettler, W. Kahlke, G. Schlierf), Essential Hyperlipemia (L. W. Kinsell, G. Schlierf, W. Kahlke, G. Schettler), and Genetic Aspects of Lipidoses (W. Fuhrmann). One is astounded at the extensive study that has been devoted to several of these rather rare and tragic, but extremely interesting, disease states. Even so, each of these fascinating chapters should provide a stimulus to further investigations in its area. Unfortunately, the preparation of text on Refsum's disease preceded the recent elegant work of Steinberg, *et al.*, that finally elucidated the specific nature of the genetic defect. However, one can assume that this vigorous group of authors will not fail to include such important developments in the next printing or edition of the book.

The balance of the volume is devoted to a very useful and thorough set of author and subject indexes (93 pp). These indexes complement the extensive use of citations to original literature and review articles, which allowed the authors to maintain the readability and reference aspects of the book while containing it within a reasonable size. By supplementing any of the chapters with even a portion of the references cited, one should be able to enter rapidly the mainstream of current research in any of these areas.

Throughout the text there are minor errors in spelling, perhaps attributable to foreign production. It is nicely printed, although on an odd mixture of two grades of paper, and contains a number of beautiful illustrations in color.

This work will be a useful purchase for all medically and biochemically oriented libraries as well as for specialists in lipid research. Individuals with more general interests in medicinal chemistry will want to have access to it and be familiar with the contents, particularly Part I, but are unlikely to have a consistent need sufficient to justify the cost of a personal copy.

SMITH KLINE AND FRENCH  
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PHILADELPHIA, PENNSYLVANIA

JERRY A. WEISBACH

**Annual Reports of Medicinal Chemistry, 1966.** Sponsored by the Division of Medicinal Chemistry, American Chemical Society. Edited by CORNELIUS K. CAIN. Academic Press Inc., New York, N. Y. 1967. x + 368 pp. 26  $\times$  18 cm. Paperback, \$7.95.

Medicinal chemistry has now reached a stage where there are more reports and reviews than new ideas. The publication of half a dozen annual or biennial review series has led to an overlap of the topics under consideration, and it is no longer unusual to find the same subject treated in several simultaneous books from almost the same point of view. This imposes on the various editors a necessity to exert considerable effort in corraling knowledgeable contributors. Loyalty to an organization with which one has grown up may be the decisive factor for an author in choosing an affiliation with one of these monograph series. The Division of Medicinal Chemistry of the American Chemical Society has been a vehicle for American medicinal chemists for exchanging ideas, acquiring and meeting like-minded friends, and for presenting and listening to the development of our field at its many symposia. It is, thus, only natural that many of the best experts, mostly in the pharmaceutical industry and in some university departments, could be drafted to review in depth the significant events in their specialty during the last year. The present annual report volume covers virtually all aspects of medicinal research, from highly speculative and theoretical ideas

to the more earthly motions of molecular modifications. The reports are written well and clearly, carefully referenced, and carefully edited. The type-offset process by which the book has been printed is not unattractive and has made possible a low price.

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ALFRED BURGER

**Biosynthetic Patterns in Microorganisms and Higher Plants.**

By H. GRISEBACH. John Wiley and Sons, Inc., New York, N. Y. 1967. xi + 110 pp. 14  $\times$  19 cm. \$7.95

This booklet deals with the biosynthesis of three classes of compounds: the flavonoids, macrolide antibiotics, and branched-chain carbohydrates. Each topic is introduced with a skeleton survey of the chemistry of the compounds under discussion and then goes quickly into the consideration of biosynthetic pathways. Reliance is placed on evidence from isotopically labeled precursors and reaction products, but predictions based on reasonable hypotheses are also mentioned. This reviewer enjoyed the chapter on branched carbohydrates, with its tabulations of structures and sources compiled for the first time.

The reference lists and the index are adequate, and print and paper are unusually good. The E. R. Squibb Lecture Series at Rutgers, the State University of New Jersey, deserves credit for arranging for this valuable and attractive publication.

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ALFRED BURGER

**New Drugs.** Evaluated by the A. M. A. COUNCIL ON DRUGS. American Medical Association, Chicago, Ill. 1967. xiii + 591 pp. 16  $\times$  24 cm. \$3.50.

The 1967 edition of this annual compendium is addressed, as were its precursors, to the physician; it provides an authoritative compilation of carefully worded brief introductions to 51 classes of drugs, and within each class gives a monograph on those compounds marketed in the United States during the decade, 1957-1966. A total of 256 drugs are dealt with, listing the actions, uses and adverse reactions of each specific agent, contraindications, precautions, dosages and routes of administration, structural formulas, generic names, and the most common proprietary names with the sources of each drug.

The impartiality with which the advantages and disadvantages of each drug and class of drugs are presented should help the physician to form his own opinion above and beyond the recommendations of the detail men whom he has to see every day. Indeed, he will have to make up his own mind about using a given drug since the book does not tell him whether the AMA Council on Drugs favors or disfavors the agent. However, he can assume that the extensive remarks about efficacy and adverse reactions reflect the opinion of the Council and its consultants. The index gives the physician a chance to learn the generic (nonproprietary) names which, in the years to come, he will have to use more and more in prescriptions.

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ALFRED BURGER

**Química Farmacéutica.** By QUINTINO MINGOIA. Edições Melhoramentos, São Paulo, Brasil. 1967. 787 pp. 23.5  $\times$  16.3 cm. Paperback.

Although not many American chemists can read Portuguese, they should, like this reviewer, be able to gather the principal scientific data from a book in their own discipline. A little background in French or Spanish should guide any medicinal chemist through the present volume. They will be glad to see that a modern approach to our subject has been adopted in Latin America and is being taught to students in the good universities there. The arrangement of topics follows almost to the letter that chosen by this reviewer in an earlier book ("Medicinal Chemistry," A. Burger, Ed., Interscience Publishers, Inc., New York.