

it aspires to be. But chapters concerning this field also appear in series such as "Advances in Physical Organic Chemistry" (Academic Press), "Advances in Organic Chemistry" (Wiley), "Progress in Stereochemistry" (Butterworths), "Advances in Heterocyclic Chemistry" (Academic Press), and "Advances in Organometallic Chemistry" (Academic Press), as well as in monographs such as Katritzky's "Physical Methods in Heterocyclic Chemistry" (Academic Press) and de Mayo's "Molecular Rearrangements" (Wiley). These volumes are mostly high priced, and few individuals in, say, a university chemistry department are sufficiently affluent and/or interested to purchase private copies of any of them. Consequently, only one to three copies of any book may be extant in the department: the library copy and one or two on professors' shelves. If the library copy is out, none may be available to the graduate student immediately on inquiry. Thus the potential readership for these volumes is not well served, nor are the authors whose contributions fail to be widely read.

It is regrettable that the tradition of publishing excellent review articles in nonprofit review journals such as *Chemical Reviews* has withered in recent years. Such a journal, which in principle can reach the desk of every graduate student as a private subscription copy, can far better serve for the purpose of communication, which is the real purpose of publication.

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**Fatty Acid Metabolism in Microorganisms.** By KLAUS HOFMANN, Professor of Biochemistry, University of Pittsburgh School of Medicine. John Wiley and Sons, Inc., 605 Third Ave., New York, N. Y. 1963. xii + 78 pp. 13 × 19 cm. Price, \$3.25.

The material of this book is essentially that presented by Professor Hofmann in the Squibb Lectures at the Institute of Microbiology, Rutgers, in late 1962. The three chapters, "Lactobacillic Acid, A Novel Microbial Metabolite," "Biosynthesis of Cyclopropane Fatty Acids," and "Biosynthesis of Monounsaturated Fatty Acids by Microorganisms" presumably follow the order of the lectures.

In a series of invited lectures it may be assumed that the speaker will discuss principally the results of his own investigations; hence, a book taken directly from the lectures will also deal predominantly with the author's research. This is the case with the present volume, which provides a lucid, detailed review of the very considerable contributions of Professor Hofmann and his group to an understanding of the structure and biosynthesis of the cyclopropanoid and other unusual fatty acids found in microorganisms. These contributions include the determination of the structure of lactobacillic acid, studies of the synthesis of cyclopropanoid acids, a demonstration of the biological conversion of *cis*-olefinic acids to cyclopropanoid acids, and studies of the chain extension of lower molecular weight unsaturated acids to give vaccenic and oleic acids. Earlier portions of the studies dealing with lactobacillic acid have been reviewed elsewhere [*Record Chem. Progr.* (Kresge-Hooker Sci. Lib.), 14, 7 (1953)], but the present volume paints a more contemporary scene.

The author notes in the preface that, "No attempt is made to provide a comprehensive summary of the literature, and . . . contributions have been omitted." This is understandable in a lecture series, but it is also regrettable, since it prevents an author from viewing the field with the sharpest perspective. For example, the ingenious one-step synthesis of *cis*-cyclopropanoid fatty acids by the Simmons and Smith route involving methylene iodide and a zinc-copper couple rates only five lines and no equations, while the vastly more laborious earlier sequence is accorded four pages. Applications of mass spectrometry and nuclear magnetic resonance to proofs of structure of branched-chain, cyclopropanoid and cyclopropanoid fatty acids are not mentioned. The whole subject of fatty acids from *Mycobacterium tuberculosis* is omitted and the chapters dealing with fatty acid biosynthesis in microorganisms neglect recent work of Bloch, Lennarz, Law, and Kodicek. More references to the recent literature would, in general, have been welcome; only six papers appear from 1962.

A minor complaint is that some of the figures and tables are confusing, partly because the same Roman numerals are used

for different compounds in different figures, partly because of space limitations, partly because Table I.3 belongs near p. 28, not on p. 21. The few typographical errors will be apparent to the reader.

This monograph is a very useful summation of the author's work in an active field, but an outstanding book might have resulted from a more comprehensive coverage.

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**Reaction Mechanisms in Organic Chemistry. A Series of Monographs.** Edited by E. D. HUGHES. **Elimination Reactions.** By D. V. BANTHORPE, Ph.D., Lecturer in Chemistry, University College, London. American Elsevier Publishing Co., Inc., 52 Vanderbilt Ave., New York 17, N. Y. 1963. viii + 215 pp. 14.5 × 21.5 cm. Price, \$8.00.

The idea of a series of monographs, each covering a particular type of reaction mechanism, is a very good one indeed. It is a great pity that Professor Hughes did not live to see the completion of his venture. The quality of the present volume and the caliber of the authors doing the remaining ones make it likely that the series will meet high standards.

Dr. Banthorpe gives very thorough and up-to-date coverage. There are nearly 500 references, many of them as recent as 1962. He covers first the usual E1 and E2 mechanisms, including extended discussions of the effect of structure and environment on rates and product proportions. Following this basic material are chapters on the less usual mechanisms, eliminations in cyclic systems, and other elimination processes such as dehalogenation, alcohol dehydration, and deamination. The book concludes with a long chapter on pyrolytic eliminations.

The general viewpoint is that of the English school, though the ideas of others are, in my opinion, given coverage in reasonable proportion to their importance. There is, for instance, a long discussion of H. C. Brown's steric theories of orientation in eliminations. The conclusions are not sympathetic to Brown, but the facts are there. The presentation is generally clear and well organized. In a few cases too much material is compressed into too little space for the explanations to be sufficiently clear (for example, the paragraph at the bottom of p. 144 on vinylic halides in aprotic media), but such cases are not numerous.

This volume can be recommended warmly to all with a professional interest in elimination reactions, as well as to the general reader who wants a more detailed and critical coverage than is available in the usual textbooks on reaction mechanisms. The size is convenient and the price not unreasonable, though scarcely at the bargain level. If the price could be substantially reduced, a paperback edition of this series should have a wide market among students.

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**Die Rohstoffe des Pflanzenreichs. 2. Lieferung: Antibiotiques**  
By JULIUS VON WIESNER and CONSTANTIN VON REGEL. Verlag von J. Cramer, 694 Weinheim, Germany. 1963. 272 pp. 16 × 24 cm. Price, F 370.

This survey is a handy, quick reference source for currently known antibiotics, especially for those who read French. The product of a Franco-German effort, the book lists several hundred antibiotics with praiseworthy objectivity. The emphasis given each antibiotic is in reasonable proportion to its clinical or scientific importance while the over-all presentation is a well-balanced one.

The book lists the antibiotics in four classes: those of microbial origin; antibiotics from *Actinomyces*; those derived from fungi; and, finally, those obtained from lichens, plants, or molds. This classification, together with the further listing of individual antibiotics in alphabetical order, leaves much to be desired. One had wished to see antibiotics of one family (tetracyclines, macrolides, peptide-type antibiotics, etc.) listed together as has been the system in other monographs of this type.

The book is obviously intended as a reference source, and it does not intend to present a critical evaluation of the chemical,