New Books

L.A. Witting and J.F. Gerecht, Book Review Editors

Alycyclic Chemistry, Vol. 5, Senior Reporter: W. Parker (The Chemical Society, Burlington House, London, 1977, 439 p., $56).

As in the case of the previous volumes, the Specialist Periodical Report entitled "Alycyclic Chemistry," Volume 5, maintains the same high standards of the previous four volumes. Volume 5 covers the literature published during 1975; a random check of both well-known and obscure papers published during that year revealed quite adequate descriptions of the contents of the papers that were looked for and no omissions were noted. One of the excellent features of this and the previous volumes is adequate detail in reaction pathways and/or mechanisms. Again, the Senior Reporter, W. Parker, deserves our thanks for an excellent job. The scope of Volume 5 can best be described by indicating the chapter titles:

Chapter 1: Three-membered Rings (B. Halton)
Chapter 2: Four-membered Rings (I. Watt)
Chapter 3: Five- and Six-membered Rings and Related Fused Systems (N.M.D. Brown and D.J. Cowley)
Chapter 4: Medium- and Large-ring Compounds (E.J. Thomas)
Chapter 5: Bridged Carbocyclics (G.B. Gill)

As in the past, there has been no attempt to emphasize publications in the lipid field, but so many of the publications are relevant to lipids that this book should be part of the library of every organization concerned with the organic chemistry of lipids and related compounds. Unfortunately, there is no detailed subject index and the reason for such an omission is explained in the Introduction by the Senior Reporter. Perhaps consideration should be given to a Subject Index instead of, but preferably in addition to, the Author Index. The volume is remarkably free of typographical errors, the text, formulas, and references are extremely clear, and the final product clearly shows the care that was taken in the preparation of this volume. Volume 5, as in the case of the previous volumes, is strongly recommended for purchase.

DANIEL SWERN
Temple University
Philadelphia, PA 19122

Biochemistry of Lipids II, International Review of Biochemistry, Vol. 14, Edited by T.W. Goodwin (University Park Press, Baltimore, MD, 1977, 386 p., $29.50).

It is the stated purpose of the publishers to present a comprehensive review series for established scientists and advanced graduate students with volumes appearing on each of at least 12 topic areas in biochemistry at two-year intervals. Corresponding series in physiology, inorganic chemistry, physical chemistry, and organic chemistry also appear with University Park Press and Butterworth as joint publishers. The current volume contains seven reviews; Biochemistry of Regulatory Lipids and Sterols in Insects, by L.T. Gilbert, W. Goodman, and W.E. Bollenbacher; C_{30} Carotenoids, by B.H. Davies; Sterols in Cell Membranes and Model Membrane Systems, by C. Green; Terpernoids in Marine Invertebrates, by J.F. Pennock; Lipid Biosynthesis in Higher Plants, by P.K. Stumpf; Newer Aspects of the Chemistry and Biology of Bacterial Lipopolysaccharides, with Special Reference to the Lipid A Component, by C. Galanes, O. Lüderitz, E.T. Reitschel, and O. Westphal; and Fatty Acid Metabolism in Ruminants, by G.A. Garton.

The various other review series regularly focusing on lipids, "Progress in the Chemistry of Fats and Other Lipids" and the now defunct "Topics in Lipid Chemistry" have each, on balance through the years, tended to be characterized by rather distinctly different emphases. According to the editor, topics in Volume I were selected to illustrate the wide ramifications of lipid research in the 1970s. Biochemistry of Lipids I published in 1974 contained reviews on: "Enzymes of Sterol Biosynthesis"; "Lipids in Glycon Biosynthesis"; "Biosynthesis of Saturated Fatty Acids"; "The Dynamic Role of Lipids in the Nervous System"; "The Biosynthesis of Unsaturated Fatty Acids"; "The Prostaglandins"; and "The Halogenated Sulphatides." Topics in Vol. II emphasize comparative aspects of lipid biochemistry. An investigator concerned entirely with lipid biochemistry in man or conventional laboratory animals may, at first glance, find some of the reviews dealing with insects, bacteria, plants, marine invertebrates, and ruminants a bit obscure. The C_{30} carotenoids for instance are currently known to occur in only three bacterial species. Experience has shown, however, that significant progress frequently arises from studies of systems where "normal" biochemical reactions proceed at an "abnormal" manner. Our present knowledge of sterol biosynthesis, for instance, owes much to the discovery of mevalonic acid as a bacterial growth factor. Similarly, certain soluble enzyme systems have proved to be much more amenable to study than the corresponding multienzyme complexes from mammalian sources. Reviews of comparative aspects of lipid biochemistry provide excellent access to such information. It will be interesting to see the course taken by future volumes of this series.

The book is clearly printed on a good grade of paper and appears to have been carefully proofread. There has been a significant price increase ($29.50 vs. $19.50) since Volume I appeared, but this is not out of line with other technical book costs.

LLOYD A. WITTING
Supelco, Inc.
Bellefonte, PA 16823

Fungicide and Nematicide Tests, Vol. 32, Edited by Charles W. Averre (American Phytopathological Society, c/o Dr. Arthur W. Engelhard, Agr. Res. & Educ. Ctr., Univ. of Florida, 5007-60th St. East, Bradenton, FL 33505, 1977, 286 p., paperback, $5).

This volume contains the results of 392 field tests of fungicides and nematicides conducted by plant pathologists throughout the world during 1976. Published in March of each year, the volumes in this series present new data for potential application during the approaching crop season. Statistical data are presented but no specific recommendations are included. Individual sections deal with pome fruits, stone fruits, small fruits and nut crops, vegetable crops, field and cereal crops, ornamentals, trees and turf, tropical and miscellaneous crops, seed treatments (all crops) and nemanticides (all crops), materials available for testing in 1977, materials under trial, and

special reports. Previous volumes are available at nominal prices.

Typical reports include studies of foliar fungicides on soybeans conducted in South Carolina, Kentucky, Illinois, Tennessee, Brazil, and the Phillipines or on peanuts in Georgia, Texas, and Florida. Each report is quite brief, one to two paragraphs plus one table. The format is clear and easily followed. While the annual volumes are probably of limited general interest, the oilseed processor should have a keen interest in factors which may improve crop yield by improving plant disease control. On second thought, at this price the series may be of interest to the serious home gardener.

LLOYD A. WITTING
Supelco, Inc.
Bellefonte, PA 16823

Lipid Absorption: Biochemical and Clinical Aspects, Edited by K. Rommel and H. Goebell, co-editor: R. Bohmer (University Park Press, Baltimore, MD, 1976, 352 p., $29.50).

This is a hard cover book reporting the proceedings of a conference held at Titisee, The Black Forest, Germany, May 1975. The papers presented were grouped into four general parts with the following subheadings: (1) Principles of Lipid Absorption; fat digestion, the lipase-colipase system and properties of cell membranes relative to penetration by lipids; (2) Normal Aspects of Lipid Absorption; fatty acids and monoglycerides, phospholipids, cholesterol, triglyceride biosynthesis in the intestinal nurcosa, chylomicron formation and ultracellular aspects of the latter, (3) Aspects of Lipid Absorption in Disease States; lipase and bile deficiency, A-beta-lipoproteinemia, diarrhea, lipid digestion and absorption in the ruminant (a disease state?) and diagnosis, and (4) Short Communications; colipase, lipases in human milk, cholesterol absorption, action of deoxycholate on a viral membrane, protein requirements of patients with jejunoileal bypass, and studies on isolated epithelial cells from the small intestine.

Most of the papers were delivered by investigators who are well known in these fields and each paper is followed by a section of questions, answers, and opinions.

The book should be useful to biochemists, nutritionists, and clinicians, who are interested in the absorption, malabsorption, and intestinal metabolism of lipids. I thought that parts (1) and (2) were particularly good, containing among other excellent sections, lucid discussions of the physical chemistry of fat digestion by A.F. Hofmann and of the lipase-colipase system by P. Desnuelle. These comments are not intended to denigrate the contribution of the other authors which were of equally high quality including that of A.K. Lough on digestion and absorption of lipids in the ruminant which was unaccountably placed in part (3).

The papers in part (4) are a mixed lot, with the one of most interest to me being that of Olivecrona and Hernell, who asked the important question, "Are the lipases in human milk important for the fat digestion in the newborn?"

This book belongs in the relevant personal and institutional libraries including those in medical schools where the stray and curious physician or student could obtain useful information.

ROBERT G. JENSEN
University of Connecticut
Storrs, CT 06268

Progress in the Chemistry of Fats and Other Lipids, Vol. 15, Edited by Ralph T. Holman (Pergamon Press, Oxford, England, 1977, No. 1, 95 p. No. 2, 71 p.; $34/yr., published quarterly).

Since 1952 this review series has appeared at somewhat erratic intervals. Bound volumes gave way to soft cover sections about the time of Volume 8, with bits and pieces of two or three volumes appearing simultaneously between 1966 and 1970. Now another transition has occurred – from review series to international review journal. A new member of the Editorial Advisory Board, Frank Gunstone, has brought with him the unpublished manuscripts intended for the now defunct review series "Topics in Lipid Chemistry" (Logos Press).

Parts one and two of Volume 15 include reviews on six topics including palm oil and palm kernel oil by J.A. Cornelius, docosenoic acids in dietary fats by J.A. Beare-Rogers, lipids of olives by E. Fedeli, books and reviews on lipids by F. Gunstone, cyanolipids by K.L. Mikolajczak and plant lipoxygenases by G.A. Veldink, J.F.G. Vliegenthart, and J. Boldingh. The international character of the journal is quite clear with reviews originating from England, Canada, Italy, United States, and The Netherlands.

The first three reviews, while each dealing with a major source of edible oil, take drastically different approaches. Cornelius deals almost exclusively with commercial production of palm oil and palm kernel oil. Fedeli focuses on the nontriglyceride components of olive oil and flavor components. The review by Joyce Beare-Rogers, while touching on hydrogenated marine oils, is concerned primarily with pathological tissue changes related to the ingestion of rapeseed oil or erucic acid. Mikolajczak's review on cyanolipids appears to be a continuation of the Northern Regional Research Lab's tour de force through the plant kingdom. The cyanolipids seem to be restricted to seed oils of sapindaceous plants. Emphasis has been placed on detection, isolation, analysis, and chemistry of these strange lipids.

While concentrating on soybean lipoxygenases the Dutch group also touches on the enzymes from peas, corn, and potato. This is an interesting area from both the biochemical and flavor stability points of view.

Gunstone's index of books and reviews on lipids appearing between 1960 or 1961 and 1974 or 1975 contains 328 entries. Since the volumes of the major review series, PCFOL, Adv. Lipid Res., and Topics in Lipid Chemistry are treated as single entries as are the lists of the various annual chapters in Ann. Rev. Biochem. and several similar publications, the total number of reviews indexed is considerably higher. Coverage is somewhat spotty since some symposium volumes are included while others, particularly in neurochemistry, are not.

Conversion of this review series to a review journal may simplify acquisition of succeeding issues. Pergamon Press has done an atrocious job in the past in promoting and distributing this series and at times has seemed almost to have gone out of their way to avoid sales. This reviewer tried for over 15 years to establish a standing order for the series without success. It is not generally the policy of a book review column to review journals. However, in the case of a series which is indispensable to lipid chemists, it seems desirable to use this forum to call attention to the transition from book series to journal.

Volume 16 will contain a collection of reviews contributed by former associates of the Stenhagens and Volume 17 will be devoted to "Lipid Metabolism in Ruminant Animals."

LLOYD A. WITTING
Supelco, Inc.
Bellefonte, PA 16823