

search. They are of particular interest to physicians, pharmacologists, and toxicologists involved in clinical pharmacology and toxicology. Volume 3, "Platelets, Thrombosis and Drugs," will conclude the "Cardiovascular Drugs" series.

Reviewed by William P. Heilman
Life Science Division
T. R. Evans Research Center
Diamond Shamrock Corporation
Painesville, OH 44077

Quantitative Drug Design: A Critical Introduction. Medicinal Research Series Vol. 8. By YVONNE CONNOLLY MARTIN. Dekker, 270 Madison Ave., New York, NY 10016. 1978. 425 pp. 15 × 23 cm. Price \$38.50.

This "how to do it" text is a must for anyone interested in the application of quantitative structure-activity relationship methods to molecular design. It will introduce the concepts to the beginner, guide the efforts of the intermediate, and provide convenient reference material for the professional.

The introduction gives the topics covered and emphasizes the steps in drug design: (a) find a lead, (b) synthesize and test an exploratory series, (c) develop quantitative structure-activity relationship models, and (d) optimize the lead with quantitative structure-activity relationships. The author then plunges into the "guts and workings" of quantitative structure-activity relationships. Some topics covered are: extrathermodynamic and *de novo* approaches, noncovalent interactions, physical properties, biological data, equations relating potency and physical properties, regression analysis, statistical evaluation, and a detailed example of extrathermodynamic calculations.

The text is well written, clear, easy to follow, current, well illustrated, and well referenced. Of particular importance are the treatment of statistics, the detailed examples, the discussion of biological data, and the very practical discussion in Chapter 11, Synthesis to Follow up a Lead: How to Start and When to Stop. The Appendixes, which are very useful, contain equations and definitions, substituent constants, Wiswesser line notation, and sources of computer programs and data bases.

This book was much needed and has come at a time when the field is exploding. It is highly recommended for those interested in quantitative structure-activity relationships who want to find out what can and cannot be done with the methods and for those working every day with quantitative structure-activity relationships who want most of the information in one handy place.

Reviewed by William P. Purcell
Drug Design Laboratory
University of Tennessee Center
for the Health Sciences
Memphis, TN 38103

Marihuana Research Findings: 1976. NIDA Research Monograph 14. Edited by ROBERT C. PETERSEN. National Institute on Drug Abuse, 11400 Rockville Pike, Rockville, MD 20852. 1977. 251 pp. 15 × 23 cm.

The National Institute on Drug Abuse (NIDA) regularly publishes research monographs on various aspects of abused drugs. This book, like many of its predecessors, is useful to workers in the area or those contemplating future endeavors in that area. The book contains nine chapters, each representing an area of research interest that in general reflects NIDA grant activity in marihuana research. Most chapters have been written by experts in the field. A preliminary summary of marihuana findings by the editor is quite readable and was the text for the sixth edition of the *Marihuana and Health Report*.

Chapter 1, written by William McGlothlin, gives an excellent overview on the epidemiological research findings with marihuana usage during the past 10 years, with emphasis on recent findings. Chapters 2 and 3, by Ralph Karler, cover the chemistry, metabolism, toxicology, and pharmacology of marihuana. These chapters appear to be the weakest in the book. The reader has considerable difficulty following the text without benefit of chemical structures. Particularly was this problem true with the synthetic analogs of marihuana. Surprisingly, there was no

mention in Chapter 2 of the NIDA-sponsored symposium on marihuana assays in humans detailed in Monograph 7. (In the summary by the editor, *cf.*, p 12, this symposium was referenced.)

Chapters 4-6, by Douglas Peter Ferraro, cover the research on behavioral effects, most of which comes from animal studies. Chapter 7, by Reese Jones, is the best organized and perhaps the most useful to researchers starting in this area. This chapter covers the myriad of human effects known to occur from marihuana smoking or administration of individual cannabinoids. Chapter 8, by Steven Matsuyama and Lissy Javrick, details the rather limited knowledge available on genetic and immune responses in animals and humans. The final chapter, by Sidney Cohen, takes a sort of anecdotal approach to therapeutic aspects of marihuana use. Sections on intraocular pressure reduction, bronchodilation, and anticonvulsant work certainly emphasized some positive effects found for various cannabinoids which are not necessarily found in marihuana.

The book is an excellent source for recent references in the marihuana area and is recommended mainly for that reason. Yet the newcomer in marihuana research should be forewarned that this short thesis cannot completely cover the vast literature of this field.

Reviewed by Jimmie L. Valentine
BioAnalytic Laboratory
School of Pharmacy
University of Missouri-Kansas City
Kansas City, MO 64108

Aliphatic Chemistry, Vol. 5, A Specialist Periodical Report. Edited by A. McKILLOP *et al.* The Chemical Society, Burlington House, London W1V 0BN, England. 1977. xii + 337 pp. 14.5 × 22 cm. Price \$47.00. Available from Special Issues Sales, American Chemical Society, 1155 Sixteenth St., N.W., Washington, DC 20036.

In the fifth volume of the Specialist Periodical Reports on aliphatic chemistry, the authors and editor maintain the excellent quality and the well-organized format of the previous volumes. This volume is composed of four chapters that survey the literature published during 1975 and one chapter (Chapter 5) that summarizes the literature for the 2-year period of 1974-1975.

The literature dealing with alkanes, acetylenes, allenes, and olefins was contributed by J. C. Saunders and B. P. Swann, who were also coauthors of the corresponding chapter in Volume 4. The task of compiling Chapter 2—by far the longest in this volume—on compounds with other functional groups (carboxylic acids and their derivatives, nitriles and isocyanides, aldehydes and ketones, alcohols, amines, alkyl halides, ethers, and other types of aliphatic compounds) was performed by E. F. V. Scriven. Dr. Scriven maintains the high standards set by E. W. Colvin, who so ably contributed the analogous chapters in all of the preceding volumes.

Progress in the areas of naturally occurring polyolefinic and polyacetylenic compounds (Chapter 3) is reviewed for the fourth consecutive year by G. Pattenden. This chapter summarizes reports dealing with detection and isolation, structure elucidation, and syntheses of these unsaturated natural products. Included are not only open-chain, alicyclic, and simple heterocyclic natural products containing polyolefinic and polyacetylenic moieties but also more complex compounds, such as the macrolide and ansamycin antibiotics. The view, formerly held, that halogen-containing compounds are rare in nature is refuted by this chapter and its predecessors in earlier volumes, particularly by the sections that treat compounds from marine sources.

Chapter 4 on prostaglandins by K. W. Mollion reflects a resurgence of interest in syntheses of prostaglandins and their analogs. Synthesis routes are amply illustrated with structures and schemes. In Chapter 5, F. D. Gunstone surveys the literature of 1974 and 1975 on the biology, chemistry, and biochemistry of fatty acids and related compounds.

It is becoming difficult to review the volumes of this series without becoming repetitiously laudatory. The fact remains that this volume and its predecessors provide admirable surveys of the annual literature in the specified areas; collectively, they constitute valuable reviews of the recent literature (1970-1975) of these areas. It is still a marvel that such comprehensive coverage of specific (Chapters 3-5) and general (Chapters 1-2) topics is presented in a concise, informative, and well-organized style.

Reviewed by Y. F. Shealy
Southern Research Institute
Birmingham, AL 35205