

decrease in the chemical literature in this area.

As in the preceding volumes, the emphasis is on syntheses and reactions of the various classes of compounds. The liberal use of structural formulas and reaction schemes is an invaluable aid to the user of these volumes. Like its predecessors, this volume serves as a well-organized source of much valuable information on general aliphatic chemistry and on aliphatic natural products.

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**Physiologic Disposition of Drugs of Abuse.** By LOUIS LEMBERGER and ALAN RUBIN. Halsted, 605 Third Ave., New York, NY 10016, 1976. 401 pp. 16 × 23.5 cm. Price \$29.50.

This book contains 10 chapters. The first chapter describes the fundamental principles of drug disposition. The absorption, distribution, and *in vivo* and *in vitro* metabolism of drugs of abuse are described in Chapters 2-9. The 10th chapter deals with the phenomenon and mechanism of tolerance.

The drugs of abuse discussed include amphetamine, mescaline and related phenylalkylamines, LSD and related indolealkylamines, morphine, morphine substitutes, barbiturates, methaqualone, caffeine, nicotine, alcohol, the cannabinoids, cocaine, and miscellaneous drugs including volatile solvents.

Numerous scattered papers and reviews concerning the physiologic disposition of drugs of abuse are summarized in the book. Chemical structural illustrations are used to demonstrate the metabolic pathways of drugs. These illustrations help readers to understand the process of biotransformation of the drug. There is no doubt in the reviewer's mind that this book will be of value and benefit to pharmacologists, psychiatrists, psychologists, and those in basic and clinical fields, especially graduate students and research associates beginning research in fields related to drugs of abuse. The extensive, up-to-date bibliography is very helpful.

It would be nice if a chapter on tranquilizers, especially benzodiazepams, was incorporated in this book.

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**Drug Regulation and Innovation: Empirical Evidence and Policy Options.** By HENRY G. GRABOWSKI. American Enterprise Institute for Public Policy Research, 1150 17th Street, N. W., Washington, DC 20036, 1976. 82 pp. 15 × 23 cm. Price \$3.00.

This book sets out to prove that there is a drug lag in the United States due to governmental regulation of the pharmaceutical industry. It must be seen as an attempt to convince readers of this lag by citing portions of several economic studies. The first five chapters examine various aspects of the effects of regulation on the pharmaceutical industry, and the final chapter presents some suggested policy modifications to rectify the supposed "drug lag."

The book, which is very one-sided, failed to convince the reviewer of the seriousness, or even existence, of the problem. There is a citation that U.S. doctors sent patients abroad for treatment in order to use a drug not available here. This statement is supported by a single citation indicating TWO such examples.

The tone of the work is evident in a quotation from the forward, written by Professor Yale Brozen: "A small step in this direction would be to eliminate the FDA's power to require substantial evidence of effectiveness" (p. 7). Essentially, the argument is made that the United States is falling behind in the number of new chemical entities first developed and/or introduced in this country and that this problem is related to the 1962 amendments to the Federal Food, Drug, and Cosmetics Act. Arguments for the value of some drugs include their sales and market share abroad. The market test is hardly a valid indicator of the value of a product, and it is perplexing that economists choose to use this argument. No one would deny that each of 80 different penicillin derivatives could be useful individually, but more subject to controversy is whether

we have a "drug lag" at all if analogs of existing products are not on the U.S. market.

It is argued that the 1962 amendments will decrease U.S. prestige, harm our foreign balance of payments, and decrease support of academic pharmacology. Yet these arguments are unsupported. Surely the author must have considered factors encouraging foreign research such as the corporate tax structure, foreign profit repatriation rules, and relative labor costs. We come across the statement that the pharmaceutical industry is of above-average riskiness (p. 40). While this may be so for individual products, Barges and Hickey and others have refuted this argument. Easing of FDA regulation and earlier releasing of drugs with greater surveillance after marketing are proposed.

It is no great shock to this reviewer to see that researchers and investors in foreign lands have had successes as we have had. Also, one might argue that the availability of fewer new products is less potentially confusing to prescribers and that competition from products having expired patent protection should help to reduce prices. It seems that in this book conclusions are made repeatedly that are far broader than merited by the findings. The author dismisses arguments about decreases in the number of new product introductions in other countries and points made by government officials if they do not coincide with his hypothesis. This reviewer was expecting a much more even-handed treatment of the subject than he found.

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**Antibiotics. A Critical Review.** Edited by W. KURYLOWICZ. Polish Medical Publishers, Warsaw, Poland. Distributed by the American Society for Microbiology, 1913 I St., N.W., Washington, DC 20006, 1976. 204 pp. 17 × 24.5 cm. Price \$6.00.

This book by four Polish authorities in the field attempts to compress the subject of antibiotics into about 200 pages. There is a short introduction as well as a brief section on classification, but the bulk of the book is devoted to two sections. Antibiotics in Microbial Metabolism deals with the biosynthesis and mode of action of antibiotics, and Antibiotics as Therapeutic Agents discusses the pharmacology and therapeutics. A great deal of condensed information is included in this book, which is both its strength and its weakness.

The section Antibiotics in Microbial Metabolism is the most useful. Structural formulas and diagrams are plentifully used in a valuable overview of this complex area. The section Antibiotics as Therapeutic Agents is less successful. Here the abridgement combined with the desire to be comprehensive, even to the point of presenting the principles of drug-protein binding and pharmacokinetics, each in a few pages, creates significant problems. A large number of drugs, some of only minor clinical interest in the United States, are dealt with summarily and important omissions occur. There is no mention, for instance, of colitis as a toxic side effect of clindamycin or of cardiomyopathy as a toxicity of the anthracycline antibiotics.

The book contains a substantial number of misprints, most of which are trivial, but some are more problematic; for instance, on page 97 there is a reference to Table 1 which, I think, though I cannot be sure, is a reference to Table 4-3.

In summary, I feel that these authors have made an admirable attempt to review an enormous amount of information in a small book. The result is a valuable introduction to the subject of antibiotics and a useful adjunct to other texts, but it would be unwise to rely on it as a sole source of information about these compounds.

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**Lipid Chromatographic Analysis. Vol. 2.** Edited by GUIDO V. MARINETTI. Dekker, 270 Madison Avenue, New York, NY 10016, 1976. 400 pp. 15 × 23.5 cm. Price \$34.50.

This text contains five chapters covering compounds that, in the broadest sense, can be considered as lipids. The chapters cover TLC of sterols and steroids, GLC of bile acids, chromatography of prostaglandins,

GLC of carbohydrate glycolipids, and GLC of long chain nitrogen bases.

The chapter on sterols and steroids (139 pages) deals primarily with TLC, and data are presented clearly in tabular form for a most comprehensive list including many steroids currently on the market. The chapter on bile acids (130 pages) provides a highly detailed description of GLC methodology including experimental methodology for "Filling of Columns" and "Formation of Derivatives." The chapter on prostaglandins (51 pages) succinctly covers all chromatographic methods with emphasis on metabolites and extraction. The section on carbohydrate glycolipid GLC (37 pages) includes many common sugars as well as detailed methodology for synthesizing derivatives. The section on long chain nitrogen bases (11 pages) provides detailed procedures for cleavage, derivative formation, and GLC.

Knowledge of chromatographic methodology is often critical in many pharmaceutical, biological, and synthetic research projects. The detailed information and experimental methodology presented in this book should provide a most useful source to the pharmaceutical scientist. It is highly recommended to those involved in research as well as development of compounds in the classes covered.

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**Pharmacology of Marihuana. Vols. 1 and 2.** Edited by MONIQUE C. BRAUDE and STEPHEN SZARA. Raven, 1140 Avenue of the Americas, New York, NY 10036, 1976. 458 pp. 16.5 × 24.5 cm. Price \$50.00 (two volumes).

This two-volume set represents the proceedings of the International Conference sponsored by the National Institute on Drug Abuse in Savannah, Ga., December 3-6, 1974.

These books contain a total of nine parts. The first part offers general background information, and the last part deals with the therapeutic potential. In the remaining seven parts, comprehensive research data are presented, including chemical and metabolic aspects; cellular, immunological, hormonal, autonomic, and neuropharmacological effects; behavioral pharmacology; related drug interactions; effects on genetics and reproduction; and the long-term effects of marihuana.

The data from both preclinical and clinical research are presented. Respiratory and cardiovascular effects are discussed in Part IV under Autonomic Effects. It is rather surprising that only a small portion of the text is devoted to these aspects, considering the complex effects of  $\Delta^9$ -tetrahydrocannabinol on the cardiovascular and respiratory systems, including interference with the reflexogenic mechanisms. The discussion on p. 287, Cardiovascular Effects, has very little to do with the cardiovascular system and deals mostly with bronchodilator effects.

The primary means of self-administration of marihuana is by inhalation, but little information is presented in these texts concerning its acute and/or chronic effects on pulmonary hemodynamics. Such information would have been useful, especially since therapeutic value has been implicated for marihuana in bronchial asthma. These limitations perhaps emphasize the urgent need for further research in these areas. In this respect, these books serve a useful purpose in documenting what is known and what is not.

Marihuana and its constituents are highly complex and possess numerous pharmacological properties; the National Institute on Drug Abuse performed an extremely useful service in comprehensively presenting this material. Dr. Braude and Dr. Szara should be commended for excellence in designing the symposium and editing the proceedings. These books will be extremely useful for researchers and clinicians concerned with research on marihuana.

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## NOTICES

*Kremers and Urdang's History of Pharmacy. Fourth Ed.* Revised by GLENN SONNEDECKER. J. B. Lippincott, East Washington Square, Philadelphia, PA 19105, 1976. 571 pp. 19.5 × 24 cm. Price \$24.00.

*Methods in Receptor Research. Part 1.* Edited by MELVIN BLECHER. Dekker, 270 Madison Ave., New York, NY 10016, 1976. 383 pp. 15.5 × 23.5 cm. Price \$36.50.

*Drugs and Therapy. A Psychotherapist's Handbook of Psychotropic Drugs.* By ALVIN K. SWONGER and LARRY L. CONSTANTINE. Little, Brown, 34 Beacon St., Boston, MA 02106, 1976. 292 pp. 14.5 × 22 cm. Price \$8.95.

*Fluorocarbon and Related Chemistry. Vol. 3.* Edited by R. E. BANKS, M.G. BARLOW, et al. The Chemical Society, Burlington House, London W1V 0BN, England, 1976. 491 pp. 14.5 × 22.5 cm. Price £35.00.

*Stylebook/Editorial Manual of the AMA. 6th Ed.* By the Scientific Publications Division, American Medical Assn. Publishing Sciences Group, 162 Great Rd., Acton, MA 01720, 1976. 161 pp. 13.5 × 21.5 cm. Price \$6.50.

*Handbook of Basic Pharmacokinetics.* By W. A. RITSCHER. Drug Intelligence Publications, Hamilton, IL 62341, 1976. 370 pp. 11.5 × 19.5 cm. Price \$16.00.

*Aminergic Hypotheses of Behavior: Reality or Cliche? National Institute on Drug Abuse Research Monograph Series 3.* Edited by BRUCE K. BERNARD. National Institute on Drug Abuse, 11400 Rockville Pike, Rockville, MD 20852, 1975. 148 pp. 20.5 × 27 cm. Price \$6.75.

*Handbook of Intermediary Metabolism of Aromatic Compounds.* By B. L. GOODWIN. Halsted, 605 Third Ave., New York, NY 10016, 1976. 25.5 × 20 cm. Price \$75.00.

*Frontiers of Pharmacology. Journal of Pharmacy and Pharmacology: Special Supplement.* Edited by B. A. CALLINGHAM, M. A. SIMMONDS, and D. W. STRAUGHAN. The Pharmaceutical Press, 17 Bloomsbury Square, London, WC1A 2NN, England, 1976. 405 pp. 18 × 25.5 cm. Price £2.50.

*Dimethyl Sulphoxide.* By DIETER MARTIN and HERMANN G. HAUTHAL. Halsted, 605 Third Ave., New York, NY 10016, 1975. 500 pp. 16 × 25 cm.

*Organic Chemistry, Series Two. Vol. 3: Aromatic Compounds.* Edited by H. ZOLLINGER. Butterworth, Borough Green, NR Sevenoaks, Kent, England, 1976. 350 pp. 16 × 24 cm. Price £13.45.

*Organic Chemistry, Series Two. Vol. 4: Heterocyclic Compounds.* Edited by K. SCHOFIELD. Butterworth, Borough Green, NR Sevenoaks, Kent, England, 1976. 392 pp. 16 × 24 cm. Price £13.45.

*Lung Liquids. Ciba Foundation Symposium 38 (new series).* CIBA Pharmaceutical Co. Elsevier, 52 Vanderbilt Ave., New York, NY 10017, 1976. 330 pp. 17 × 24.5 cm.

*Narcolepsy. (Advances in Sleep Research. Vol. 3)* Edited by C. GUILLEMINAULT, C. DEMENT, and P. PASSOUANT. Halsted, 605 Third Ave., New York, NY 10016, 1976. 689 pp. 16 × 23.5 cm. Price \$40.00.

*Organophosphorus Chemistry. Vol. 7.* Edited by S. TRIPPETT et al. The Chemical Society, Burlington House, London, W1V 0BN, England, 1976. 285 pp. 14.5 × 22.5 cm. Price \$55.00.

*Pharmacology of Behavior and Memory.* By R. YU. II'YUCHENOK. Halsted, 605 Third Ave., New York, NY 10016, 1976. 216 pp. 16 × 23.5 cm. Price \$22.50.

*Photochemistry. Vol. 7.* Edited by D. BRYCE-SMITH et al. The Chemical Society, Burlington House, London, W1V 0BN, England, 1976. 617 pp. 14.5 × 22.5 cm. Price £32.00.

*Psychotropic Action of Hormones.* Edited by T. M. ITIL, G. LAUDAHN, and W. M. HERRMANN. Halsted, 605 Third Ave., New York, NY 10016, 1976. 248 pp. 16 × 23.5 cm. Price \$25.00.

*Separation and Purification Methods. Vol. 4.* Edited by E. S. PERRY, C. J. van OSS, and E. GRUSHKA. Dekker, 270 Madison Ave., New York, NY 10016, 1976. 413 pp. 16 × 23.5 cm. Price \$32.50.

*Drug Misuse . . . Human Abuse.* By HELEN I. GREEN and MICHAEL H. LEVY. Dekker, 270 Madison Ave., New York, NY 10016, 1976. 566 pp. 18.5 × 26 cm. Price \$19.75.

*Basic Neurochemistry. Second Ed.* Edited by GEORGE J. SIEGEL et al. Little, Brown, 34 Beacon St., Boston, MA 02106, 1976. 825 pp. 15.5 × 23.5 cm. Price \$15.00.

*Genetic and Biochemical Aspects of the Development of Datura. Monographs in Developmental Biology. Vol. 12.* By MARIE E. CONKLIN. S. Karger AG., Arnold-Bocklin-Strasse 25, CH-4011 Basel, Switzerland, 1976. 170 pp. 15.5 × 22.5 cm. Price \$30.50.