

of fluorescence and phosphorescence. The final chapter is a general description of applications, followed by tables listing literature conditions for the fluorometric and phosphorimetric analyses of selected compounds of biological interest as well as a table summarizing literature fluorometric analyses of inorganic ions.

In the opinion of this reviewer, Chapters I and II best meet the needs of analytical chemists and biologists as described in the preface. They should serve the beginning investigator well and act as a bridge to the more advanced treatments of these subjects. To a lesser extent, this is also true for the chapter on instrumentation. However, this information is also readily available, with at least equal clarity, in the well-established texts on fluorometry as well as from the instrument manufacturers. The chapter on applications is very limited, and even the novice would be better served by using general texts on fluorescence assays.

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Medical Botany: Plants Affecting Man's Health. By WALTER H. LEWIS and MEMORY P. F. ELVIN-LEWIS. Wiley, 605 Third Ave., New York, NY 10016. 1977. xii + 515 pp. 17 × 25 cm. Price \$27.50.

Divided into three sections, this book covers injurious, remedial, and psychoactive plants. The authors use an effective style, arranging drugs by therapeutic use with descriptions of various diseases for which there are plant remedies. This style is suitable for a pharmacognosy textbook for beginning students who have not yet been introduced to disease states. The plant drugs are compared with drugs of synthetic origin. There is extensive use of charts and graphs.

The book is blighted by errors, only a sampling of which could be included here. Errors of grammar, spelling, or typesetting should have been prevented by proofreading, e.g., an illustration of a beech tree is listed as *Sorbus aucuparia*. Some errors result from individuals writing on topics outside their expertise, e.g., psyllium seed is listed under "Bulk Purgatives." Psyllium seed may fill up the large intestine so normal stools can be formed but has no purgative action. Some errors result from a lack of recognition of clinical significance, e.g., purslane is included under "Internal Poisons." Although this information appears to be copied from Kingsbury, the evidence is based on a single report of sheep poisoning from Australia. Purslane is one of the safest of the wild edible plants.

Under "Mutagens," a list includes broccoli, brussel sprouts, cabbage, cauliflower, and kale. We are not told whether the other plants listed as mutagens are as safe as these vegetables or that the vegetables are dangerous mutagens. Errors also result from failure to distinguish between folk tales and modern medical practice. An unsuspecting reader may assume that the generous space devoted to garlic and bloodroot indicate that they are efficacious cancer remedies while, in reality, there is little justification for assuming that either is useful.

Errors of fact are also included, e.g., "... methaqualone, a barbiturate addictive depressant . . ." Methaqualone is not a barbiturate, nor does it induce addiction to barbiturates. "Separate in the female, the urethra . . ." Whatever this means, the urethra is not separate in the female. "Symptoms of primary and secondary syphilis can resolve themselves naturally. . . ." These symptoms may go away, but the problem is not resolved. *Cannabis sativa* has only one name listed as a vernacular name, bhang. I have never heard that word used, but I have frequently heard of marijuana, grass, or joints.

Much of the information seems unrelated to the people for whom the book is written, undergraduate students as well as physicians. There are 21 pages of tables of "Chewing sticks for cleaning teeth" and "Plants used to relieve toothache." Few items listed are of significance in world medicine, and only one drug is important in the U.S. Most illustrations are stylized drawings from herbals published centuries ago. They are useful only as illustrations of old herbals.

This book is filled with fascinating information—the authors have undoubtedly done a lot of reading to come up with the amount of accurate information included. The name "Medical Botany" is not appropriate because a large percentage of the space is not occupied with botany and much of it is of little significance to medicine. The errors spoil the book. I can recommend it for professionals who are already knowledgeable about medicine or medical botany but who want historical and anthro-

pological information, are interested in folklore, or who are doing research on plant remedies passed over (in many cases without having been adequately tested) by modern medicine.

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Clofibrate and Related Analogs. A Comprehensive Review. Medicinal Research Series, Vol. 7. By DONALD T. WITIAK, HOWARD A. I. NEWMAN, and DENNIS R. FELLER. Dekker, 270 Madison Ave., New York, NY 10016. 1977. 287 pp. 15 × 23 cm. Price \$27.50.

This monograph presents a concise and comprehensive review of the clinical and pharmacological studies of clofibrate and structurally related analogs. As a major prototype drug used in the treatment of hyperlipoproteinemia, a recognized risk factor associated with atherosclerotic lesions in coronary artery disease, clofibrate has captivated the imagination of many scientists working in this field. Sections of the book are devoted to clinical drug trials, clofibrate activity in various animal models of hyperlipidemia, structure-activity relationships of clofibrate-related analogs, proposed mechanisms of hypolipidemic action, drug-induced metabolic effects, and pharmacokinetic studies.

The clinical trials section reviews data concerning the efficacy of clofibrate in lowering serum lipid levels, reducing coronary artery damage, reversing cerebrovascular disease, eruptive xanthomas, hyperinsulinemia, diabetic retinopathy, Type I glycogen storage disease, and the symptoms of gout and diabetes insipidus. The pharmacological section summarizes the effects of clofibrate on the metabolism and distribution of free fatty acids, triglycerides, cholesterol, and lipoproteins, as well as effects on lipoprotein lipase activity and lipolysis in adipose tissue.

Other metabolic effects, not directly associated with the hypolipemic action of clofibrate, are also summarized. These topics include the effects of clofibrate on mitochondrial enzymes, liver peroxisomes, and hepatic enzyme induction. The book integrates the numerous findings from both human patients and experimental animal models and emphasizes the relationship between the hypolipidemic properties of these agents and their usefulness in the treatment of coronary artery disease.

This book also contains a useful Glossary of Selected Terms pertaining to coronary artery disease and its therapy. Containing 774 references, this well-written and comprehensive review is an excellent reference source and guide for clinicians and basic scientists in biochemistry, medicinal chemistry, pharmacology, physiology, and toxicology. It is of particular interest to scientists dedicated to the elucidation of the biological mechanisms of action and design of hypolipidemic agents.

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Terpenoids and Steroids, Vol. 7. A Specialist Periodical Report.

Edited by J. R. HANSON *et al.* The Chemical Society, Burlington House, London W1V 0BN, England. 1977. 359 pp. 15 × 22 cm. Price \$50.00. Available from Special Issues Sales, American Chemical Society, 1155 Sixteenth Street, N.W., Washington, DC 20036.

This book is the seventh volume of terpenoids and steroids in a valuable series first published 6 years ago. Hanson has maintained the high standards set by K. H. Overton, editor of earlier volumes. The aim of each series of Specialist Periodical Reports is to provide a systematic comprehensive and critical review of progress in the major areas of chemical research. The various series, which now total 36, are being published annually or biennially on such topics as The Alkaloids; Amino-Acids, Peptides and Proteins; Biosynthesis; Carbohydrate Chemistry; Environmental Chemistry; Foreign Compound Metabolism in Mammals; and Photochemistry.

This volume does not contain a subject index but is organized in a systematic manner which facilitates finding any information being sought. The six pages in the Table of Contents outline this volume in detail. The chapters are divided into many sections, which are identified

in boldface type in the text as well as in the Table of Contents. These sections are further divided into subsections. Chapter titles are found at the top of every second page of the text. The author index of 3500 names is helpful to those following the research of a given individual.

This review is illustrated with 2000 chemical structures. It is documented with 1900 references, most of which are listed at the bottom of the page of each chapter where first cited.

Part I, which covers the terpenoids, is divided into chapters including Monoterpenoids, Sesquiterpenoids, Diterpenoids, Triterpenoids, Carotenoids and Polyterpenoids, and Biosynthesis of Terpenoids and Steroids. Part II, which covers steroids, is divided into two large chapters entitled Steroid Properties, Reactions and Partial Synthesis and Steroid Total Synthesis. The omission of a compilation of references to review articles on subjects related to terpenoids or steroids is the only disappointment. Such compilations were included in most previous volumes of this series.

The biochemist will find the 50 pages on Biosynthesis and subsection on Steroid Radioimmunoassay and Labelled Steroids very useful.

This volume was prepared by nine reporters in addition to the editor. Chemists interested in terpenoids or steroids should have access to this volume and others in the series. They are valuable in reviewing any topic in these subject areas, in developing new ideas and in identifying references for consultation. I highly recommend this series.

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NOTICES

Drug Design and Adverse Reactions. Edited by HANS BUNDEGAARD, PER JUUL, and HELMER KOFOD. Academic, 111 Fifth Ave., New York, NY 10003. 1977. 382 pp. 16 × 24.5 cm.

This book contains a collection of 25 papers presented at the 10th Alfred Benzon Symposium held in Copenhagen on May 17–20, 1976, on drug design, with particular emphasis on the safety of pharmaceutical products and their ethical standards. These papers are grouped into four general areas: (a) damaging effects at tissue, cellular, and molecular levels, (b) allergic and immunological reactions, (c) molecular aspects of drug toxicity, and (d) status and perspectives.

In the first area, drug-induced lipidosis, ultrastructural evaluation of drug-induced cellular injury, neurocytochemistry of guanethidine, cytotoxicity of guanidines, lysosomotropic chemotherapy and applications to neoplastic and parasitic diseases, liver toxicity of isoniazid analogs, acetaminophen (paracetamol) hepatotoxicity, and prediction of local damage by intramuscular injection are discussed. The second general area includes discussions of assessment of the immune response to drugs, immunological aspects to drugs, antigenic determinants in drug allergy, allergic reactions to impurities and drug metabolites, penicillin antigenicity, hapten and immune response, and correlation of drug structure and toxicity mediated by both immune and nonimmune mechanisms.

The third general area, which shifts the attention from biology to chemistry, is composed of the following six topics: adverse reactions and chemical structure, structure-activity relationships of carcinogenic drugs, carcinogenicity of benzo[a]pyrene, metabolites of estrogens and gastagens, differential metabolism of enantiomers, and molecular structures with inherent toxicity. The remaining four presentations, chemical structure and toxic action, protein binding and adverse reactions, chemically reactive metabolites and toxicity, and drug delivery considerations, comprise the final general area of status and perspectives.

The ultimate goal of every medicinal chemist in drug design is to find useful drugs with specific action without uncontrollable toxicity. To achieve this goal, an understanding in many basic disciplines of science, including organic chemistry, analytical chemistry, physical chemistry, biochemistry, microbiology, molecular biology, pharmacology, toxicology, and immunology, is required. A correlation of the compounded knowledge to appreciate the chemical and biological mechanisms of drug action is also necessary. This book, which accumulates the presentations of "a mixed party attacking a complicated subject matter from different expert angles" (H. Kofod, opening remarks), is an attempt in this direction. Although, in general, many topics of discussion seem somewhat scattered and not closely interrelated, it is the consequence of a worthwhile attempt to study the problem of drug toxicity.

The participants, who are well established in their own field of study, tried their best to unveil the urgent problems, to point out the pitfalls,

to align certain common factors and principles they observed, and to make suggestions. Here, a word of caution may be added. In this almost virgin field of drug design, suggestions and recommendations should only be made in the pretext of working hypotheses, and each should be treated with respect and used with caution. For example, if not the drug but one of its metabolites is responsible for the therapeutic action, the use of that metabolite or derivatives as a therapeutic agent was suggested. With due respect, this reviewer believes that the suggestion may not be adequate. Often a metabolite formed *in vivo* may be unstable or exist only with a short half-life. Even if the metabolite is stable and can be properly characterized and synthesized in the laboratory, one should also consider the problems of solubility, transport, absorption, etc., which may be quite different from those of the original drug. Remember the story of the Trojan horse? The "metabolites" or "active species" are the soldiers inside; to eliminate the problem of transport, the entire Trojan horse, the original drug, may be needed.

At the end of this book, there is only an index of invited authors and discussants. This index may be useful for the meeting participants but is of little use to others. Perhaps the editors should consider installing a general subject index for the forthcoming meeting proceedings. This book is recommended as general reading to all scientists interested in the problem of drug design.

Drug Dependence. Current Problems and Issues. Edited by M. M. GLATT. University Park Press, Chamber of Commerce Bldg., Baltimore, MD 21202. 1977. 332 pp. 14 × 22 cm. Price \$28.50.

The Science and Technology of Gelatin. Edited by A. G. WARD and A. COURTS. Academic, 111 Fifth Ave., New York, NY 10003. 1977. 564 pp. 15 × 23 cm. Price \$39.50.

Case Studies In Medical Physiology. By ROBERT S. ALEXANDER. Little Brown, 34 Beacon St., Boston. MA 02106. 1977. 170 pp. 13 × 22 cm. Price \$6.95.

Health Organizations of the United States, Canada, and Internationally. 4th Ed. Edited by PAUL WASSERMAN and JANE K. BOS-SART. Edwards Brothers, 2500 S. State St., Ann Arbor, MI 48104. 1977. 327 pp. 21 × 28 cm.

Haemostatic Drugs: A Critical Appraisal. By M. VERSTRAETE. Martinus Nijhoff, Lange Voorhout 9-11/P. O. Box 269, The Netherlands. 1977. 155 pp. 15 × 23 cm.

Molecular Biology, Biochemistry, and Biophysics 23: Secondary Metabolism and Cell Differentiation. By MARTIN LUCKNER, LUTZ NOVER, and HARTMUT BÖHM. Springer-Verlag, 175 Fifth Ave., New York, NY 10010. 1977. 130 pp. 19 × 24 cm. Price \$21.00.

Medication Guide For Patient Counseling. 1st Ed. by DOROTHY L. SMITH. Lea & Febinger, 600 Washington Square, Philadelphia, PA 19106. 1977. 15 × 23 cm. Price \$12.00.

Pharmacie. 5th Ed. Edited by YVAN TOUITOU. Masson, 14 E. 60th St., New York, NY 10022. 1977. 340 pp. 13 × 21 cm.

Chemotherapy of Solid Tumours. Report on a WHO Expert Committee. World Health Organization, 1211 Geneva 27, Switzerland. 1977. 106 pp. 14 × 20 cm. Price \$4.00.

Drugs and Driving. NIDA Research Monograph 11. Edited by ROBERT E. WILLETTE. National Institute on Drug Abuse, 11400 Rockville Pike, Rockville, MD 20852. 1977. 15 × 23.5 cm. 137 pp. Price \$1.70. Available from Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

Chemotherapy of Infection. By WILLIAM B. PRATT. Oxford University Press, 200 Madison Ave., New York, NY 10016. 1977. 462 pp. 15 × 23 cm. Price \$9.95.

Topics in Antibiotic Chemistry, Vol. 1. Edited by P. G. SAMMES. Halsted, 605 Third Ave., New York, NY 10016. 1977. 217 pp. 16 × 24 cm. Price \$28.50.

Herbicides and Fungicides—Factors Affecting Their Activity. Edited by N. R. McFARLANE. The Chemical Society, Burlington House, London, W1V 0BN, England, 1977. 141 pp. 12 × 22 cm. Price \$15.00.