

Book Reviews

The Chemistry of Natural Products. Volume VI, The Chemistry of the Vitamins. By S. F. DYKE. Interscience Publishers, Inc., New York, N. Y. 1965. x + 363 pp. 15.5 × 23.5 cm. \$10.00.

In his third contribution to the growing series, "The Chemistry of Natural Products," S. F. Dyke provides an up-to-date comprehensive review of the organic chemistry of vitamins. In addition to currently accepted members of the group such as those of the vitamin B complex, ascorbic acid, and the fat-soluble vitamins A, D, E, and K, the author has included chapters on lipoic acid, the essential fatty acids, and *meso*-inositol. According to the preface, the author sought to treat the subject largely on chemical grounds and to take an occasional brief excursion into biochemistry where appropriate. By doing so, he has produced a fitting companion for the other volumes of this series but, on the basis of the direction of emphasis being given to vitamins today, the need for such a restricted treatment might be challenged.

Approximately 80% of the manuscript is devoted to a review of the elucidation of structure, synthesis, and reactions of the vitamins. These sections are well written and profusely illustrated with structural formulas and flow charts, printed whenever possible on the page facing the appropriate text to provide maximum reader assistance. This useful device of printing text on the left-hand page and corresponding graphic aids on the right-hand page might have been further improved by the occasional use of a few well-placed rules to delineate the several groups of illustrations on a given page. This, however, is a minor criticism. Also in the sections on structure determination are plots of ultraviolet absorption spectra of the parent vitamin and key degradation products. Following the sections on synthesis are briefer discussions of unique chemical reactions of the compound. By and large, these sections are the strong point of the book.

The sections devoted to biochemistry are modest in length and scope and are written from an organic chemical rather than biochemical point of view. The treatment is generally restricted to a brief summary of the biosynthetic pathway and a discussion of the metabolic role of the vitamin in its coenzyme form. Here too, maximum reader assistance is provided in the form of flow charts and plots of ultraviolet absorption spectra. The usefulness of these sections is limited by their brevity.

A short introductory chapter summarizes the nomenclature of vitamins, and the individual chapters offer one-or-two sentence paragraphs on the topics of occurrence, deficiency disease, and daily requirement.

Over-all, the book is accurate, reasonably documented, and well written, and the printing, illustrations, and binding are excellent. Literature citations are found alphabetically arranged at the end of each chapter; there is a modest subject index but no author index.

This book will find a limited audience because of the predominant organic chemical treatment of a field currently more concerned with biochemistry and physiological chemistry. However, it is a welcome addition to "The Chemistry of Natural Products" and should be warmly received by those primarily interested in organic chemistry.

MERCK SHARP & DOHME
RESEARCH LABORATORIES
DIVISION OF MERCK & CO., INC.
RAHWAY, NEW JERSEY

ARTHUR F. WAGNER

Animals Parasitic in Man. By GEOFFREY LAPAGE. Revised Edition. Dover Publications, Inc., New York, N. Y. 1963. 320 pp with 81 illustrations. 13.5 × 21.5 cm. \$1.85.

This book, written for the layman, medical student, physician, biologist, and chemist, is a well-balanced account of the various animal parasites that affect man. The text is organized on a biological basis and includes chapters on: (I) what is a parasite; (II) the kinds of parasites; (III and IV) parasites with direct life cycles such as intestinal protozoa and intestinal nematodes;

(V and VI) parasites with one intermediate host such as intestinal and liver flukes, blood flukes, filarial worms, and some tapeworms; (VII) parasites with two intermediate hosts such as the fish tapeworm and some liver, intestinal, and lung flukes; (VIII) malarial parasites; (IX) trypanosomes; (X) parasites which live in or on the skin such as leeches, insects, ticks, and mites; (XI) structural and physiological changes that parasites have undergone; and (XII) tissue reactions, immunity, and control of parasites.

Organization of the book on a biological basis rather than a taxonomic one is stimulating but may cause some confusion in comparing related organisms with dissimilar life histories. Very little information on chemotherapy is included.

The book is well written in a nontechnical fashion which makes it very easy to read. The illustrations are good as is the index. For those interested in a very readable description of the principles of parasitology and the biology of parasites causing disease in man, this inexpensive book can be highly recommended.

PARKE, DAVIS AND CO.
ANN ARBOR, MICHIGAN

J. ALLAN WAITZ

International Series of Monographs on Child Psychiatry. Volume III. Drug Addiction in Youth. Edited by ERNEST HARMS. Pergamon Press Ltd., London. 1965. xviii + 210 pp.

In this the third of a series of monographs on child psychiatry the editor has undertaken to present information on all the major aspects of juvenile (up to 20 years of age) drug addiction and to summarize the present status of our knowledge in this area. With the aid of 14 able contributors of practical experience in dealing with drug-dependent adolescents, he has succeeded reasonably well in presenting a total, if sketchy, picture. Particularly interesting, informative, and intelligible to almost all readers are the chapters on Drug Addiction in Greater New York (Ernest Harms), Development of Narcotics Addiction among the Newborn (Theodore Rosenthal, Sherman W. Patrick, and Donald C. Krug), Marihuana Use by Young People (Charles Winick), "Psychopathology" of Narcotic Addiction: A New Point of View (Lonnie Macdonald), Institutional Treatment of the Juvenile Narcotics User (Sherman W. Patrick), The Withdrawal Treatment of Addicts (Marie Nyswander), Group Therapy with Adolescent Addicts (Stanley Einstein and Ferdinand Jones), A Short History of Narcotics Anonymous, Inc. (Sherman W. Patrick), After-Care Rehabilitation (Leon Brill), Adolescent Addiction and Religion (Lynn Hageman), and Addiction Research Program in Puerto Rico (Sherman W. Patrick). Those chapters on Psychological Characteristics of the Adolescent Addict (David Laskowitz), Authority among Adolescent Drug Addicts (Stanley Einstein and David Laskowitz), Future Time Perspective of the Adolescent Narcotic Addict (Stanley Einstein), and A Comparison of the Rohrschach Behavior of Adolescent Addicts who Have Died of an Overdose with Addict Controls (David Laskowitz and Ferdinand Jones), will be of interest to a select and specialized group, principally psychologists and psychiatrists. The chapter, Inhalation of Commercial Solvents: A Form of Deviance Among Adolescents (Donald C. Krug, Jacob Sokol, and Ingvar Nylander), does not seem to belong in this monograph, as it has little, if any, relevance to drug dependence of the morphine type as do all other contributions.

The pessimism and complaints of lack of cooperation from "official American administrative and research circles" expressed by the editor in the introduction and again in the last chapter (Summary and Outlook), while perhaps justified, detract some from the value and intrigue of the book. It is unfortunate, too, that the World Health Organization recommended terminology of *drug dependence* of this or that type [N. B. Eddy, H. Halbach, H. Isbell, and M. H. Seevers, *Bull. World Health Organ.*, **32**, 721 (1965)] could not be substituted for addiction habituation, etc., terms that are used rather loosely.

The editor's dissatisfaction with the incompleteness of the material presented, his hope of providing the stimulus for a more thorough effort with the aim of determining the roots of the

"addictive desire," and his impassioned plea for elimination of primitive attitudes with the full use of medical and psychiatric treatment and reeducation are to be commended.

The print and paper are of good quality and typographical errors are minimal. Dilaudid and Demerol are each misspelled twice in Chapter I. This book should create fairly widespread interest.

NATIONAL INSTITUTES OF HEALTH
BETHESDA, MARYLAND 20014

EVEBETTE L. MAY

The United States Pharmacopeia. Seventeenth Revision. Published by the United States Pharmacopeial Convention, Inc., 1965. Distributed by Mack Publishing Co., Easton, Pa. lxvi + 1156 pp. \$12.50 (domestic), \$13.00 (foreign).

This latest revision which became official on September 1, 1965, shows changes in the use of medicinal substances since publication of the sixteenth revision in 1960. A total of 898 monographs are presented, of which 156 are new to this revision, while 201 articles formerly carried have been omitted as not meeting U.S.P. requirements for listing. Of the 156 new monographs, 76 represent basic drugs new to this compendium. The new drugs included and those deleted reflect the emphasis on efficacy and safety dictated by the Federal drug amendments of 1962.

The monographs illustrate the continued search for adequate standards for the purposes of regulatory agencies. Hence, spectrophotometric procedures are based upon first obtaining a good sample free of all potentially interfering substances. The second step of the procedure usually involves comparison against a U.S.P. reference standard. Most monographs specify an assay procedure and changes in procedures have been incorporated where greater specificity of new techniques or instrumentation have become available.

Synonyms have, because of federal laws, been eliminated from monographs but a separate section carries names under which the various substances included have been known. The concern of the U.S.P. for determination of the extent to which active medicinals are taken up by the body from various dosage forms is heartening. Although the present revision gives no standards of physiological availability, it is to be hoped that the problem of developing suitable procedures for determinations of this sort can be solved in the not too distant future.

Aside from several new tests specified in the section on general tests, processes, and apparatus, a separate listing of articles by pharmacologic category or pharmaceutical utility is newly added. Other features of the U.S.P. include sections on reagents, molecular formulas and weights of all chemicals used, tablets of thermometric equivalents, and revised atomic weights.

In general, chemists will be interested in the U.S.P. if they are involved in drug standards and quality control. The book also gives a good picture of the basic medicinal substances considered to be of greatest therapeutic use and value at this time. Organic chemists will find *Chemical Abstracts* names for all drugs that can be appropriately given a chemical name. Altogether this latest U.S.P. follows its traditional format and maintains a rather constant look of usual familiarity.

MEDICAL COLLEGE OF VIRGINIA
RICHMOND, VIRGINIA

WARREN E. WEAVER

Evaluation of Drug Activities: Pharmacometrics. Edited by D. R. LAWRENCE and A. L. BACHARACH with 57 Contributors. Academic Press Inc., London. 1964. 23.5 × 16.5 cm. Vol. I, xvii + 456 pp, 95 shillings. Vol. II, vii + 441 pp, 90 shillings (\$14.00).

These two volumes, used as a unit, constitute the pioneering attempt to present comprehensively, on a scientific basis, the background and the working methods of the study and evaluation of the activity of pharmacological agents. Drugs used in anti-microbial chemotherapy have not been included.

The reader is put in the right mood by being started off with a chapter on the first clinical trials of potential drugs; after all, the pharmacologist is less concerned about the tranquilization of a neurotic mouse than about the carry-over to the clinical problem. Then follow several general chapters. The experimental pharmacologist is given a review of planning and programming his testing procedures, of choosing his objectives and approaches to complex problems. This is followed by a superb chapter on the design, the statistical analysis, and interpretation of pharmacological experiments, and by discussions of strain and sex differences in response to drugs, and species differences. A very good survey of toxicity tests includes all aspects and stages of such runs, including carcinogenicity and teratogenicity. A timely synopsis of drug dependence and drug abuse closes the general introduction (166 pp).

There are 33 chapters on specific drug types and their evaluation. No laboratory cook-book directions are given, but rather intelligent and, in most cases, searching discussions of the physiologic, biochemical, and pharmacologic fundamentals underlying the test methods. No effort has been spared to make these books interesting to the student of pharmacology and the experienced pharmacologist alike.

Neither of the two volumes has an index. A subminimal guide to chapter contents does not substitute for the lack of an index. This should be corrected in future editions. With this exception the two books constitute what is probably the best approach to, and the most adequate coverage of, the field of pharmacological evaluation of drugs.

UNIVERSITY OF VIRGINIA
CHARLOTTESVILLE, VIRGINIA

ALFRED BURGER

Progress in Medicinal Chemistry. Volume 4. Edited by G. P. ELLIS and G. B. WEST. Butterworth Inc., Washington, D. C. 1965. ix + 221 pp. 16 × 25.5 cm. \$13.25.

The fourth volume of this series features five chapters: Experimental Hypersensitivity Reactions, by P. S. J. Spencer and G. B. West; Mechanisms of Toxic Action, by J. M. Barnes and G. E. Paget; Drug Receptor Interactions, by E. W. Gill; Polypeptides of Medicinal Interest, by H. D. Law; and Analgesics and Their Antagonists: Biochemical Aspects and Structure-Activity Relationships, by A. H. Beckett and A. F. Casy. The first of these articles is pharmacologic only; the chapter on toxicity mechanisms attempts to interpret these as biochemical disturbances, and if carried beyond a cautious threshold, may have achieved more of its purpose. Caution becomes more advisable in Gill's review of drug-receptor interactions. The shadowy concept of receptors is discussed on the basis of complementary molecular surfaces to which the receptors must fit. One welcomes the careful and extensive analysis of conformations of simple molecules which contain flexible chains; these factual data will be of real help in limiting the many speculations which dot the medicinal literature, especially in the cholinergic area. This chapter represents excellently the current state of our knowledge of receptors, even though deplorably small, and in need of new ideas.

The attempts to define protein structure in respect to drug interaction are brought into focus in Law's chapter on medicinally interesting polypeptides. This is a chapter that chemists will enjoy since it reviews structural and synthetic work as well as biological aspects of polypeptides. Curiously, peptide antibiotics are not mentioned.

The chapter by Beckett and Casy updates similar earlier reviews by the same authors, and expands the topic by including considerably more biochemistry. The exceptions to Beckett's stereochemical theories in the field of analgesics are set forth although not explained.

On the whole, this is by far the best volume this series has produced, and it should contribute materially to the interest in drug research which is now growing in so many areas.

UNIVERSITY OF VIRGINIA
CHARLOTTESVILLE, VIRGINIA

ALFRED BURGER