

"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.

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**The United States Pharmacopeia.** Seventeenth Revision. Published by the United States Pharmacopoeial 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.

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**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.

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**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.

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