

Book Reviews

Index-Handbook of Cardiovascular Agents, Vol. 2 (1951-55), by Isaac D. Welt. Publ. 821, National Academy of Sciences, National Research Council, Washington, D.C., 1960. Part I and II, lv+1568 pp.

In the introduction, Dr. Welt describes the examination of some 400 medical and scientific periodicals for articles on cardiovascular agents. From these journals 13,400 articles were classified as to the various drugs used in each article. Each title has been expanded in order to give the reader an indication not only of the drugs used but also the species of the test animal and the results. Many cross-references are given in the text. These volumes, covering the literature on this subject from 1951 to 1955, will be followed by similar volumes covering 1931 to 1950 and from 1956 to the present. In the text the titles are listed by number, by author's name and by subject. These volumes will be very useful to any research worker in cardiovascular research or related fields. It is hoped that Vol. 3 will appear soon, for the value of this *Handbook* will be greatly increased when the coverage is brought up to the present time.

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Annual Review of Pharmacology, Vol. 1, edited by Windsor C. Cutting, Robert H. Dreisbach, and Henry W. Elliott. Annual Reviews, Inc., Palo Alto, California, 1961. 15×22 cm. vii+479 pp. \$7.00.

The first volume of this series has been expected eagerly by pharmacologists all over the world. Although reviews in depth of more limited fields are ably presented in *Pharmacological Reviews*, broad periodic reviews of the most active areas in pharmacology have been missing, and will fill an ever increasing need in the mushrooming specialized literature of pharmacology. Care has been taken to avoid duplication of topics of the two series.

The volume is given a Bon Voyage greeting in an informal personalized and retrospective article by Torald Sollmann. The first three reviews

survey highlights in pharmacology in Japan (H. Kumagai and H. Yamada), in Latin America (E. G. Pardo and R. Vargas), and in the U.S.S.R. (S. V. Anichkov). The mechanisms of drug transport and metabolism are ably reviewed by L. S. Schanker and by E. W. Maynert, and effects of temperature on the action of drugs are discussed by G. J. and F. A. Fuhrman. Readers of this journal will be especially interested in the excellent review on biochemical effects of drugs by J. J. Burns and P. A. Shore. V. Erspamer has critically presented a comprehensive synopsis of pharmacologically active substances of mammalian origin, including biogenic amines, polypeptides and lipids. Other topics, well surveyed by prominent authors, include clinical studies on hypersensitivity to drugs and the use of drugs in allergy (E. A. Carr, Jr. and G. A. Aste); behavioural effects of drugs (H. F. Hunt; and P. B. Dews and W. H. Morse); two articles on neuropharmacology (U. Trendelenburg; D. Grob); cardiovascular pharmacology (M. deV. Cotten and N. O. Moran), renal pharmacology (J. Orloff and R. W. Berliner); endocrine pharmacology (P. L. Munson); the action of drugs on the skin (A. Herxheimer); bone seekers (P. S. Chen, Jr., A. R. Terepka and H. C. Hodge); industrial toxicology (E. Browning), and a review of recent reviews by C. D. Leake. Author and subject indexes are provided; the paper is fair, but the print is small.

It is hard to conceive how pharmacologists and medicinal chemists have got along without these reviews, and the topics listed for Vol. 2 (1962) assure us that this series will be found on the shelf of all working investigators who no longer can read the multitude of journals which pour into their libraries. The editors and authors of the new series deserve the gratitude of these readers.

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Russian Drug Index, compiled by Stanley Jablonski and Robert M. Leonard. National Library of Medicine, U.S. Dept. of Health, Education and Welfare, Public Health Service, Washington, D.C., 1961. Foreword by Chauncey D. Leake. Public Health Service Publication No. 814, U.S. Printing Office, Washington 25, D.C. 19½ × 26 cm. vi + 103 pp. Price 60 cents.

Biologists, chemists, and medical scientists who encounter drug names in the Russian literature will be relieved to learn of this authoritative and inexpensive compilation of drugs used in the U.S.S.R. The information stems from a systematic scanning of the principal pharmacological and medical Russian monographs and journals from 1950 to 1960. In the

Subject Section (77 pages), drugs are arranged alphabetically under headings representing broad biological functions. The anglicized name of the drug, a transliterated Russian name, the chemical formula or composition, a structural formula, a short description of the drug's properties, a Russian source, and an American reference, when available, are given. The Index Section lists all names and numbers of coded drugs in alphabetical order.

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Treatise on Analytical Chemistry, Vol. 3, Part II, edited by I. M. Kolthoff and P. J. Elving, with the assistance of E. B. Sandell. Interscience Publishers, Inc., New York and London, 1961. 17 × 24 cm. xvii + 380 pp. \$13.25 (\$12.00 on subscription)

The *Treatise* is planned for publication in three parts: Part I, Theory and Practice; Part II, Analytical Chemistry of the Elements; and Part III, the Analytical Chemistry of Industrial Materials. The editors state that Part II 'critically reviews the analytical chemistry, inorganic and organic, of all the elements.' The present volume, dealing with copper, magnesium, zinc, cadmium, mercury, and tin, is the first of Part II.

All the reviews are presented in uniform fashion; the history of each element, its chemical and physical properties, and methods of separation, of detection, and of quantitative determination are discussed in that order. Several of the authors have included sections on sampling and/or solution of samples; it is unfortunate that not all chapters have such sections. Each review concludes with critically selected laboratory procedures for the determination of the element.

The material reviewed is extensive; over 1400 literature references are given. There are some omissions. For example, X-ray emission spectroscopy, though becoming increasingly important, is not included in all the reviews. In general, the material is adequately covered and beautifully set, and lives up to the reputation of the editors and publishers. Of particular note are sixty tables carefully denoting the chemical and physical properties of these six elements.

Of interest to medicinal chemists is the inclusion of references to the analysis for these elements in biological samples. More recognition is given to the growing importance of trace quantities of these elements in biological systems.

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Chemia Leków (The Chemistry of Drugs), by Franciszek Adamanis, Professor of Pharmaceutical Chemistry, Medical Academy, Poznań, Poland. 3rd edition. PZWL, Warsaw, 1961. 839 pp., 17 × 24 cm. Price zł. 58.

A review of this book is offered because of present interest in international educational methods. While the division of drugs is primarily based on their pharmacological action, their chemical structure is the basis in subclassification. Usually, brief comment on the physiology of each organ is followed by systematic discussion of the drugs. Given in order are: the Polish generic name, Latin name, various trade names, systematic chemical name, structural formula, molecular formula, properties, synthesis (often with history) and medicinal application. The many formulas are clear and well spaced, and the book is well printed.

After a brief foreword, the author enters into a discussion of hormones, vitamins and enzymes, followed by a discussion of the Mendeleev Periodic System from the standpoint of biological activity. Calcium and phosphate metabolism lead to discussion of vitamin D, to coagulants, blood substitutes, blood-forming elements, cardiac drugs, and diuretics. In the discussion of the GI tract the stomach is treated as follows: drugs that increase secretion, increase and decrease acidity of gastric juice, emetics, anti-emetics and expectorants; then the intestine: cathartics, constipating agents, adsorbents, cholereitics and cholagogues. This leads to a section on diagnostic agents for X-ray visualization of various organs.

In the organization of the CNS the large sections are A, C, D and E; B apparently being missing. In section A are drugs which decrease excitability, in Section C anticonvulsants, in Section D sedatives and Section E analgesics. A separate chapter follows, devoted to stimulants of the CNS, which might well have been included herewith as a section.

The section on the autonomic nervous system ends with a discussion of ganglionic blocking agents. This leads logically to the section on hypotensives. Hypotensive alkaloids of *Rauwolfia* form the bridge to psychopharmacologicals. The relaxant meprobamate introduces the reader to muscle relaxants and curareform drugs. The action of curare on the peripheral nervous system leads to the local anaesthetics, divided according to chemical classification, as usual.

Chemotherapeutics start with metallo-organic compounds of arsenic, antimony and bismuth, followed by sulphonamides, antibiotics, tuberculostatics and antimalarials.

Under cancer therapy are discussed some aspects of the etiology of cancer and carcinogenic processes brought about by chemicals. The available therapeutic methods listed include radiation, hormonal castration, and (under chemotherapeutics) cytostatics, mitotic poisons and antibiotics. Under radiation therapy are discussed in detail the radioisotopes: phosphorus-32, iodine-131, cobalt-60, gold-198, tellurium-170. Hormonal castration is discussed in the treatment of breast and prostate cancer. In

cytostatic poisons one encounters biological antagonists. What we know as alkylating agents are described as 'antagoniści dehydrazy triozaofosfatewej'. These are followed by antifolic acid compounds and antagonists of purines and pyrimidines, the mitotic poisons, colchicine, demecolchin, diethylstilbestrol and derivatives, and the antibiotics azaserine and actinomycin C. The last section of the book is devoted to antiseptics and disinfectants.

All in all, this is as modern a treatment of the subject as one is likely to find in a textbook, and a student completing its study would have a competent grasp of the subject. This review was prepared with the assistance of Dr. Danuta Malejka, to whom I wish to express my thanks.

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Quantitative Methods in Pharmacology, (H. De Jonge, ed.).
North-Holland Publishing Company, Amsterdam (Interscience
Publishers, Inc., New York), 1961. xx and 391 pp., 15 × 22.2 cm.
\$13.25.

This is a collection of 26 rather technical papers presented at a symposium held in Leyden in 1960 to discuss recent advances in the field of statistical methods in pharmacology. The value of the book is enhanced considerably by its appearance within a year of the conference, because the field of biostatistics is advancing so rapidly. In fact some of the authors have made additions to their manuscripts and the literature cited contains numerous references to work published during 1960. Several of the contributions have concise summaries and the discussion following the papers is brief and well edited. In addition to the formal papers, the remarks by the chairmen of most of the sessions have been condensed and included in the appropriate sections and these lend some unity to the work.

The book is divided into six sections. The initial section is devoted to the relatively new techniques which utilize sequential analysis, and not only details the branches of design in which sequential methods have established themselves but also suggests directions in which these techniques may be expected to develop. Another section deals with statistical techniques useful in the standardization of drugs. The third section reviews the choice between parametric and non-parametric (distribution-free) statistical methods, with particular reference to Wilcoxon's two-sample test *versus* the corresponding *t*-test of Student. In a critical and provocative paper, Juvancz openly attacks the use of non-parametric methods in medical

research. He makes a good case for his thesis that non-parametric tests (except for the classical and popular χ^2 -test) are only useful when the data are obtained by weak and questionable experimental techniques. The discussion that follows Juvancz' paper is interesting and lively. Section 4 concerns the screening of drugs and ranges from a sequential procedure useful in screening new drugs to specific problems that arise in screening drugs for pharmacological activity. Brock recommends a therapeutic index different from that customarily used but fails to convince this reviewer that its general acceptance would be advantageous. Drug mixtures are discussed in Section 5. Schild points out that although bioassay of impure drugs is receding in importance as purer preparations become available, the assay of activities of newly discovered drugs in terms of established drugs is increasing and the need for adequate statistical procedures remains great. The final section contains four miscellaneous papers. This volume admirably sums up current knowledge of statistical methods in pharmacology and should certainly be read by all who work in this field.

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Drugs and Behavior, edited by Leonard Uhr and James G. Miller. John Wiley and Sons, Inc., New York, 1960. xix + 617 pp. 14.9 × 22.9 cm. \$10.75.

In the past decade the medical use of drugs to modify broad behaviour patterns, rather than simply to produce local tissue change or affect organ systems, has increased prodigiously. But while prescription of the so-called tranquillizers and energizers has become commonplace to both physician and patient, the precise delineation of the effect of these and other 'psycho-active' drugs has lagged far behind, and the understanding of their mode of action remains elusive. It appears that the filling of these gaps will require the integration of skills and insights from such diverse fields as psychology, psychiatry, neurophysiology, biochemistry, and pharmacology. While it may be expected that appropriate training programmes will eventually evolve for the development of an original breed of psychopharmacologists, fruitful research for the time being must involve cross-communication among representatives of the several specialties. This book attempts to supply some of the background needed by participants in such collaboration.

The fifty-one chapters are arranged in two major groups. The first, extending over some 200 pages, is the more general. It includes an analysis of the kinds of hypothesis to be tested in drug-behavioural research, a summary of possible biochemical and neurophysiological loci of

drug action, a classification of psychoactive drugs, an outline of methodological problems in the design and conduct of experiments, and discussion of the involvement of the clinician in investigation. The chapters in the second part are more specific, describing standard laboratory procedures that have been or might be adapted to the problem, making predictions of measurable drug effects, and in most cases recording experiments already done. A wide variety of assessment techniques are referred to—in animals, the modification of conditioned fear responses, experimental neurosis, patterns of electrical self-stimulation of the brain, discrimination ability, and imprinting; in humans, sensory and psychomotor tests, tests of perception and cognition, situation tests, physiological and electroencephalographic measurements, projective tests, behaviour inventories and other observational techniques, self-ratings, free association, and introspection.

The fact that, of the 63 contributors, psychologists are in the clear majority, backed by a strong contingent of psychiatrists, suggests that the direction of information flow here is more from 'psycho' to 'pharmacology' than the reverse. This is neither surprising nor inappropriate. Whatever the ingenuity exercised in synthesizing new medicinal agents, the final payoff is in the realm of behaviour. It is primarily the psychologist who, over the years, has developed methods for identifying and controlling the multitude of environmental and personal variables that may interact complexly and subtly with chemical substances in altering behaviour. And it is he who can provide measurement techniques for detecting the changes, ameliorative and deleterious, which are the final criteria for evaluating the psychoactive drugs.

With something over 1200 references to the technical literature, *Drugs and Behavior* provides a convenient starting point for study in depth, as well as a balanced overview of this burgeoning discipline.

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Pharmacotherapeutica—1950–1959. Státní Zdravotnické Nakladatelství, Praha, 1961. 437 pp., 20·5 × 14·5 cm.

In this compact paper-bound monograph, a collection of papers presented on the occasion of the 10th anniversary of the Research Institute of Pharmacy and Biochemistry in Prague is presented. After a description of the Institute in both English and Russian, well illustrated with photographs, 23 articles averaging 16–20 pp. each offer reviews of the field of work of the respective authors, and some of them report new data on the topic under discussion. The subjects include: oral antidiabetics; syntheses

and activity in the vitamin K and E series; synthetic models of tubocurarine; chemotherapeutic pyrimidines; new heparinoids; microbiological transformation of steroids; new quaternary disinfectants; 4-hydroxycoumarin anticoagulants; antihistaminics of the basic benzhydryl ether type; methodology of cancer chemotherapy; urinary gastro-intestinal hormones; sulphonium antispasmodics, and the pharmacology of a new pyrazolidinedione. Preparative and manufacturing problems discussed include intermediates in vitamin A synthesis; new indicators in complexometry; insulin preparations; preparation of anterior pituitary hormones; protease inhibitors; drug stability to metals, and the breeding and keeping of laboratory animals. All but two of the articles are in English or German, two in Russian. They cover a broad and interesting range of subjects, previously only covered in the Czech literature in uncollected papers. Thus, they offer an opportunity to survey medicinal chemistry in Czechoslovakia over a 10-year period without the obstacle of the language barrier. A selected bibliography of books and papers published in Prague from 1946 to 1960 (in English) and an extensive author index complete this volume.

Many of the articles are illustrated extensively to give the reader a life-like view of experimental procedures and apparatus. Modern pharmacologists may question occasionally the more old-fashioned methodology employed by some of the authors. On the other hand, systematic medicinal chemistry as presented in many of the articles is good and paints a bright picture of industrious progress in this field in Czechoslovakia.

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