

Book Reviews

Experimental Chemotherapy. Volume IV. Edited by R. J. SCHNITZER and FRANK HAWKING with 30 contributors. Academic Press Inc., New York, N. Y. 1966. 670 pp. 23 × 15.5 cm.

This fourth part of the projected five-volume treatise offers, in its first 377 pages, several facets of the chemotherapy of neoplastic diseases (approaches to cancer chemotherapy, methods of drug evaluation, antimetabolites, antitumor antibiotics). The remainder of the book is an appendix supplementing various chapters of Vol. I-III. The same thorough literature referencing and careful reporting which have characterized the earlier volumes has been maintained in the present book. However, in the new section on cancer chemotherapy, no mention is made of the alkylating agents, and the relations of antiviral and antitumor drugs are not considered. The chapter on methods of evaluation of anticancer drugs may be useful to the many chemists who want to decipher the cryptic activity reports they receive from screening agencies.

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ALFRED BERGER

Handbook of Experimental Pharmacology. Volume XIX. 5-Hydroxytryptamine and Related Indolealkylamines. Edited by VITTORIO ERSFAMER with 14 contributors. Springer-Verlag, New York, N. Y. 1966. xx + 928 pp. 25.5 × 18 cm. \$46.00.

The Table of Contents of this formidable volume lists the following topics: Histology of the Enterochromaffin Cell System; Chemical Analysis of Indolealkylamines and Related Compounds; Biosay, Occurrence in Nature, Biosynthesis, Metabolism, and Peripheral Physiological and Pharmacological Actions of Indolealkylamines; Participation of 5-Hydroxytryptamine in Physiopathological Processes; Pharmacological Actions of Indolealkylamines and Precursor Amino Acids on the Central Nervous System; Drugs which Antagonize 5-Hydroxytryptamine and Related Indolealkylamines; Drugs which Block the Storage of 5-Hydroxytryptamine and Related Amines; Inhibitors of Monoamine Oxidase and Decarboxylase of Aromatic Amino Acids; Morphological Changes Caused by Injections of 5-HT in Animals and Man; and Clinical Aspects of Cerebral and Extracerebral 5-Hydroxytryptamine. However, this list does not do justice to the actual content of the book. Each chapter goes far beyond the relation of its announced title to indolealkylamines and comprises areas which might well have been discussed in connection with catecholamines, adrenergic amines, and their related amino acids in general; the occurrence, isolation, and analytical identification; and the chemical, biochemical, and pharmacological investigations of such materials. Thus, the indolealkylamines, their manifold studies, and those of their antagonists and interplaying drugs are put in proper perspective to the total *in vitro* and especially the *in vivo* systems in which they have aroused interest.

This is a book for experimental pharmacologists, and the only facet of medicinal chemistry included is a discussion of structure-activity relationships of agonists and antagonists of the title compounds. It can be said that all aspects of the histochemistry, biosynthesis, pharmacology, and clinical aspects of the indolealkylamines have been treated and documented exhaustively. As it always goes with such large books, most chapters have to be finished years ahead of the publication date; in the present volume, the literature from 1962 on has been considered lightly or not at all in several chapters. However, the information prior to that time appears to be complete. The critical evaluation of this published information is particularly gratifying: some areas of 5-HT biochemistry and activities, especially on the CNS, have been put in their proper niche, and the exalted claims of some previous monographs have been cut down to size.

The book will prove to be an invaluable and detailed source of theoretical and practical information for all investigators of indolealkylamines and closely and not-so-closely related materials.

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Chemical Aspects of the Autonomic Nervous System. By D. J. TRIGGLE. Academic Press Inc., London, 1965. ix + 320 pp. 16 × 24.5 cm. 75 shillings.

The intense interest in fundamental autonomic mechanisms, in catecholamines, and adrenergic and cholinergic processes has led to a continuous series of worldwide symposia during the last decade. The published proceedings of these meetings have been addressed mostly to specialists and have assumed that the reader would be familiar with the basic findings in these fields. A volume on autonomic mechanisms and facts for biologists and chemists has been missing. The present book admirably fills this need to acquaint them with these areas of research, from simple beginnings to sophisticated and debatable conclusions.

Books written by one author inevitably reflect his preoccupation with a given facet of his subject, and this volume is no exception to this rule. It mirrors the chemical inclination of the author. The short introduction on the structure and function of the nervous system and of excitable tissue will barely satisfy a neurologist, but then, it is intended to orient chemists, biochemists and physiologists to the task ahead. After the introductory chapters the book turns to neuropharmacology and neurobiochemistry. Sites of action of both major autonomic nervous systems are described, and the tone of the approach may be gathered from the fact that nine chapters mention "mechanisms" in their titles, and the remaining ones discuss receptors. No effort has been spared to support all facts and theories by kinetic, modern stereochemical, and biochemical evidence. Some titles look strange at first glance, such as "Adrenergic Mechanisms: The Cholinergic Site of Action." However, they point to the searching treatment of comparative data the author has attempted in order to give a virtually complete picture of autonomic events at a molecular level.

In a book on such a very complex field dozens of important questions must be left wide open in spite of all the work already recorded. This makes a lot of speculation unavoidable. Here these speculations, frequently illustrated by interesting drawings, consist of the interpretation of facts and opinions expressed by others. One will not agree with all these opinions, and the author should have been more selective in perpetuating them from the literature. For example, it is difficult to visualize the adrenergic α -receptor as a "substrate." Some discussions like this one end in blind alleys, but most of them are provocative and stimulating.

This book can be recommended to any chemist or biologist who wants to see to what level chemical explanations of biological processes have advanced, not only in the field of nervous phenomena but in pharmacobiochemistry in general.

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Drill's Pharmacology in Medicine. Edited by JOSEPH R. DI PALMA. 3rd ed. The Blakiston Division, McGraw-Hill Book Co., Inc., New York, N. Y. 1965. xiii + 1488 pp. 20 × 26 cm. \$22.50.

The Pharmacological Basis of Therapeutics. Edited by L. S. GOODMAN and A. GILMAN. 3rd ed. The Macmillan Co., New York, N. Y. 1965. xviii + 1785 pp. 19 × 26 cm. \$22.50.

The Pharmacologic Principles of Medical Practice. By J. C. KRANTZ, JR., and C. J. CARR. 6th ed. Williams and Wilkins Co., Baltimore, Md. 1965. viii + 994 pp. 18 × 26 cm. \$14.75.

An Introduction to Pharmacology. By J. J. LEWIS. Williams and Wilkins Co., Baltimore, Md. 1964. xvi + 1048 pp. 14 × 21.5 cm. \$11.50.

A student is fortunate in taking pharmacology at this time on account of the new editions of the standard texts published during the past two years. The third edition of Drill's "Pharmacology" has appeared with a new editor and many new contributors. This is a comprehensive textbook written by many authors, with

emphasis on fundamental drug action and drug metabolism. The selection of the authors has been noteworthy, for a high degree of excellence is observed in all of the chapters.

The time-honored classic, Goodman and Gilman's "Pharmacologic Basis of Therapeutics" has been published in the third edition. As in the case of Drill, the editors have relied on a number of contributors, each a specialist in their topic in the text. Drs. Goodman and Gilman have reviewed and edited each contribution, and, as a result, there is good continuity throughout the text. The former close relationship between pharmacology and therapeutics has been retained.

Krantz and Carr have continued to keep up-to-date their text on "The Pharmacologic Principles of Medical Practice." Starting in 1949, with the first edition, the sixth edition has now been published. In contrast to the two texts mentioned above, this book remains the product of two authors, however, using specialists to criticize and review the various chapters. The abbreviated and terse style has been retained in this edition.

The third edition of J. J. Lewis, "An Introduction to Pharmacology," was published in 1964. This text, as the name implies, does not have the extensive coverage of the other texts mentioned above; in fact, it is too brief to be considered for a text in a medical school course.

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Advances in Chromatography. Volume 1. Edited by J. CALVIN GIDDINGS and ROY A. KELLER. Marcel Dekker, Inc., New York, N. Y. 1965. xv + 392 pp. 16 X 23.5 cm. \$14.50.

This excellent first volume of what we hope is the first of many will be welcome on the desk of any chemist faced with the need to use chromatography in an intelligent way but without the time to survey the vast literature. The editors wisely charged their contributors to "... restrict their topics, if they desire, with no pretense of an all-inclusive coverage... to exercise their judgement... in selecting the significant papers." The result is a collection of chapters at once readable, comprehensible, and useful. Nearly everything written by experts is of use to workers in the field but this book not only fills the needs of those wanting authoritative reviews but also caters to the scientist who is an expert in other areas but who needs to be aware of the latest theory and techniques of chromatography as it applies to his problems. The topics seem to have been carefully chosen and should interest a wide audience. The emphasis is strongly toward the experimental aspects of chromatography. There is even a chapter devoted to the design of experiments to be used in teaching.

The book is divided into two roughly equal parts. The first part deals with what is called "General Chromatography" wherein there are chapters on "Ion-Exchange Chromatography," "Chromatography and Electrophoresis on Paper and Thin Films: A Teachers Guide," "The Stationary Phase in Paper Chromatography," and "The Techniques of Laminar Chromatography." Part two deals with various aspects of gas chromatography: "Qualitative and Quantitative Aspects of the Separation of Steroids," "Capillary Columns: Trials, Tribulations and Triumphs," "Gas Chromatographic Characterization of Organic Substances in the Retention Index System," "Inorganic Gas Chromatography," "Lightly Loaded Columns," and "Interactions of the Solute with the Liquid Phase."

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Second Symposium on Catecholamines. Edited by GEORGE H. ACHESON. Reprinted from *Pharmacol. Rev.*, 18, 1 (1966). The Williams and Wilkins Co., Baltimore, Md. 1966. 803 pp. 25.5 X 18.5 cm. \$15.00.

This symposium was held at the Istituto di Ricerche Farmacologiche "Mario Negri" in Milan, Italy. The session chairmen were H. Blaschko (enzymology), C. Cori and M. Vaughan (metabolic effects of catecholamines), Marthe Vogt (measurement and

detection of catecholamines and related compounds), U. S. von Euler (properties of adrenergic tissues) who also surveyed the development of the field during 20 years of norepinephrine, J. H. Burn (adrenergic transmission), F. F. Shideman (modification of sympathetic function), A. Sjoerdsma (catecholamines and the circulatory system), and W. Feldberg (adrenergic mechanisms in the nervous system). The names of the symposium speakers read like a Who's Who in Catecholamines from all over the globe. The unusually large audience and number of participants attest to the importance attributed to the topics of the symposium.

For medicinal chemists interested in such varied fields as inhibition of the biosynthesis of the catecholamines, maintenance of amine storage levels, glycogenesis and glycolysis, lipid metabolism, cold adaptation, adrenergic transmission and receptor mechanisms, cardiovascular and neuro- and psychopharmacological agents affecting catecholamines, this symposium will be a veritable treasure grove of authoritative, up-to-date information. The articles have been prepared carefully and are well documented. Although some of them are in the looser form of lectures, most of the authors have edited their papers with diligence. The reader will, however, have to find his way to special topics the hard way since there is no index of any kind beyond the table of contents. This is probably due to the fact that the symposium reports have been reprinted from a review journal, but the editor should have arranged an index for the book edition. Nevertheless, this collection of papers will remain the best source of information on all facets of the chemistry and pharmacology of catecholamines until another symposium on these timely subjects can be arranged.

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Methods in Drug Evaluation. Edited by P. MANTEGAZZA and F. PICCININI, with 63 contributors. North Holland Publishing Co., Amsterdam. 1966. xii + 580 pp. 15.2 X 22 cm. \$16.80.

This book contains the proceedings of an international symposium held in Milan, Italy, in September 1965. It comprises 44 chapters, each dealing with a different pharmacological test method; in many cases, several methods, based on different concepts of action and presenting different techniques, are compared in one chapter. Thus, this symposium offers the widest scope of methods published in recent months [see, for example, *J. Med. Chem.*, 9, 452 (1966); 8, 894 (1965)].

Each participant in the symposium had been allotted 20 min for his paper. Judging from the lengths of the chapters in the book, some authors handed in the text of their lecture without much change; obviously only the highlights of the subjects could be touched in these cases. Many of the authors did, however, expand their manuscripts, adding statistical analyses, adequate theoretical background material, and pertinent literature references. In spite of this unevenness in distribution of emphasis, the book offers a good account of most of the major pharmacological testing methods. In some cases the novice will be able to use descriptions of experiments like those in a laboratory manual; in most cases the chapters will serve as excellent surveys of situations which will encourage reading in greater depth from other sources. The international character of the authorship offers a guarantee against provincialism of testing methods which has become, in several countries, a compromise between legal edicts of local health authorities and critical pharmacology.

Some chapters written by participants from pharmaceutical industries stress therapy-oriented test methods at the expense of fundamentals, but the personal experience of the authors with these methods should be a valuable and much sought-after asset of the book. In such elusive fields as teratogenicity and several psychopharmacological topics, animal experiments can paraphrase the facts of clinical testing at best. Often they are no more than artificial crutches upon which one has to lean until more meaningful test methods become available. In such cases the present chapters are apt to evoke controversy, but this should be stimulating to the development of clearer thinking and better experimentation.

There is an index of participating authors and a rather brief subject index.

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