Book Reviews

Principles of Drug Action. The Basis of Pharmacology. By AVRAM GOLDSTEIN, LEWIS ARONOW, and SUMNER M. KALMAN. Hoeber Medical Division, Harper and Row, New York, N. Y. 1969. xii + 884 pp. 16.5 × 24 cm. $18.50.

The principal textbooks of pharmacology most widely used in North America medical curricula and in the graduate training of pharmacologists all have their roots in applied physiology. Molecular pharmacology has crept into some of the reeditions but has not affected the framework of these texts nor the structure of the medical school courses in which they are being taught. No wonder that in all too many medical schools the position of pharmacology *per se* has been questioned. A few institutions have even seriously considered abolishing their Departments of Pharmacology, and letting the course content be divided up between biochemistry and physiology. Such intentions were misled by the notion that enough biochemists and physiologists are concerned with mechanisms of drug action, while actually the interest of most of them lies with mechanisms of normal biochemical and/or physiological events.

Two facts have contributed substantially to these dilemmas. First, the lusty growth of molecular pharmacology presented the more physiologically inclined pharmacologists with a plethora of chemical data with which they were not too familiar. Second, the need for more clinical pharmacologists is rising daily through the demands of the FDA for more clinical information on new and old drugs, and these demands have in turn called for more training of clinical pharmacologists in the medical schools. A textbook covering both molecular and clinical pharmacology has therefore become a necessity, and the present book fills this gap as an important and timely teaching aid in these areas.

In a field moving as rapidly as pharmacology, it would be unwise to present a systematic catalog of the perimeters and peculiarities of each useful drug. Therefore, the present volume will serve as a basic text of fundamental concepts to familiarize the reader with principles, illustrated by means of different drugs. After an introductory chapter on drug–receptor interaction, excellently illustrated with fact and fancy concerning almost everything experiment and speculation have given us about receptors, three broad chapters on drug transport and metabolism follow. The factors that determine the time course of drug action are considered next; no holds are barred in chemistry or kinetics, and the medical student or physician who majored in history or religion before entering the professional school will experience pangs of regret about his lack of preparation. Eight chapters deal with adverse effects of drugs and the mechanisms responsible. Antidotes, quantitation of toxicity, drug idiosyncrasy, and the immunochemical basis of drug allergy follow these topics. Drug resistance in lower cell species and higher animals is brought under one heading, unifying the age-old dichotomies separating the concepts of microbiologists and functional pharmacologists. Drug tolerance, physical dependence, chemical mutagenesis, carcinogenesis, and teratogenesis are considered as biochemical phenomena with their varied sociological and legal implications. Then finally, the medicinal chemist will find a brilliant chapter on drug design, and the clinician will read an equally good survey of clinical trials in humans, with all its restrictions and pitfalls.

This book will become a necessity for all of us who have to relearn a field every so often, and it will be an exciting invitation to science-minded students to enter the field of pharmacology.

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Circulatory Drugs. Pharmacological and Clinical Approach to the Detection and Evaluation of New Circulatory Drugs. Proceedings of an international symposium, Milan, December 1967. Edited by A. BERTELLI. Imported from North-Holland Publishing Co. by John Wiley & Sons, New York, N. Y. 1969. ix + 332 pp. 15.5 × 23 cm. $17.50.

The three types of drugs whose pharmacological and clinical performance are discussed are coronary dilators, antihypertensives, and analeptics. Two papers stem from American universities, and 33 from European academic and industrial laboratories. All papers are in English. Without wishing to detract from the many inventive methodological and new clinical data, much of the content of the symposium volume has appeared in previous publications. There is much new supportive evidence for accepted knowledge, such as the negligible direct cardiac action of analeptic agents which has been in Goodman and Gilman's textbook for 15 years. We used to hear about the Washington cocktail circuit, and it seems that pharmacologists, not to be outdone by politicians, have gone on a symposium circuit presenting their findings at different places and consuming—mostly Italian—cocktails at the official banquets as their reward. The slender book, vastly overpriced by the publishers, will be of interest to cardiovascular pharmacologists, provided that, after thumbing through it, they decide they have not read the same information in the original literature.

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Pharmaceutical Chemistry. Part II: Inorganic. M. L. SCHROFF. National Book Centre, Calcutta, 1968. xvi + 700 pp. 22 × 15 cm. $10.00.

This is a first-year chemistry text in systematic inorganic chemistry applied to pharmacy. Various elements and inorganic compounds used in medicine are discussed, and special chapters are devoted to pharmacological classifications of such substances. Analytical methods and cook-book directions for selected compounds are included; a few simple organic compounds have crept inadvertently into the text. There is a good section on radioisotopes. Standards are measured as recommended by U.S.P. methods.

There is a lack of interest in inorganic pharmaceuticals in academic circles, but an enormous market for such materials, and the pharmacist's stock in this subject is not negligible. Maybe this book will kindle a little scientific interest in this field.

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Atlas of Protein Sequence and Structure 1969. Edited by MARGARET O. DAYHOFF. National Biomedical Research Foundation, Silver Spring, Maryland, 1969. xxiv + 361 pp. paperback. 27.5 × 21.5 cm. $12.50.

The literature of the structures of proteins (not small or medium-sized polypeptides) is scattered through so many journals dealing with organic chemistry, biochemistry, crystallography, kinetics, etc., that even the expert cannot keep abreast of all significant developments. The present book, published elegantly at an unbelievably low price by a beautiful offset process, has collected virtually all pertinent data on protein structure in a critical survey and catalog. In the data section, the naming of proteins, the abbreviation of amino acids, methods of punctuation in line formulas, and comments on the reliability of sequence information prepare the reader for the discussion of individual proteins. Among the latter are the following: cytochromes *c* and other respiratory proteins; globins; fibrinogen and fibrinopeptides; immunoglobulins; enzymes of known or fragmentarily known structure; trypsin inhibitors; protein hormones (virtually complete) and toxins; virus coat and fibrous proteins; and a number of miscellaneous proteins whose amino acid sequences are wholly or partially known. In addition, there are sections on rRNA sequences and tRNA sequences to aid with insight into protein biosynthesis.

These discussions and illustrations are implemented by 20