Neuropharmacology

Drugs Affecting the Peripheral Nervous System. ALFRED BURGER, Ed. Dekker, New York, 1967. 644 pp., illus. $27.50. Medicinal Research Monographs, vol. 1.

This book contains contributions dealing with structure-activity relations of drugs affecting cholinergic and adrenergic receptors throughout the peripheral nervous system. In addition, there are chapters on cholinesterase inhibition and on the action of drugs on the afferent nervous system. The editor let "each contributor present his unencumbered views on how various chemical agents influence autonomic events, permitting each free rein to describe his own unique approach to the question of how chemical constitution can be correlated with biological activities in this field." As a result of this editorial policy the volume is of uneven quality, with some outstanding chapters and some that will be confusing and difficult for the reader, particularly the uninitiated one. It would have been valuable to have careful, unified discussion of some conceptual problems. One of these is exemplified in the title of the book, which is a misnomer, since most of the drugs considered affect cells innervated by the peripheral nervous system and not the nervous system itself. Moreover, important words that recur frequently throughout the text are undefined or variously defined. For example, the word *potency* is used in several ways; a drug of high potency has in some instances a high value and in other instances a low value, according to the usage of the individual author. This will not trouble the expert, or a reader who has the time and interest to search out the original literature himself. There are, however, additional problems. Different standards are accepted by different authors for what are to be considered valid data regarding activity of a drug—this despite the fact that very valuable discussions of the limitations on many kinds of data are presented in several of the chapters.

One of the most valuable chapters is that on molecular aspects of cholinergic mechanisms, in which S. Ehrenpreis critically examines criteria for the isolation of receptors in vitro, along with other current problems of cholinergic mechanisms. Many readers will not agree with Ehrenpreis's contention that acetylcholinesterase may itself be the receptor, but his critical and thoughtful approach to the problem will stimulate useful research. Another useful chapter is C. M. Smith's review of drugs that affect the afferent nervous system. A review of these drugs has been in order, and this one provides an approach to the difficult problem of studying their structure-activity relations.

There are other valuable sections on postganglionic parasympathetic stimulants by H. L. Friedman and on postganglionic parasympathetic depressants by J. G. Cannon and J. P. Long. Similar critical reviews are given by J. J. Lewis and T. C. Muir on drugs acting on junctions between nerves and skeletal muscles and by N. B. Chapman and J. D. P. Graham on synthetic postganglionic sympathetic depressants. The section on ganglionic stimulant and depressant agents by L. Gyermek contains many valuable data but is much too long and would have benefited greatly by careful editing.

In the chapter by A. M. Lands and T. G. Brown, Jr., on sympathomimetic (adrenergic) stimulants, data of doubtful validity for structure-activity relations derived from studies on blood pressure are often included without sufficient critical discussion. It is doubtful that such data, at least in the form presented, are relevant to structure-activity relations between drugs and adrenergic receptors. This seems obvious in view of the fact that effects from a variety of systems activated by different adrenergic receptors determine the ultimate blood pressure response and because factors such as varied metabolism, uptake into stores, and distribution in the body with time will affect the ultimate response. These points have been reiterated too frequently elsewhere to be detailed here.

In conclusion, this volume contains much valuable information and some very helpful critical discussion of a number of the problems of structure-activity relations of drugs acting on the periphery. Many of these are repeated and presented in different ways, and this can be both valuable and confusing. For the nonexpert, it might be worthwhile to consider this volume as supplemental to more unified treatments of the subject, such as D. J. Triggle's *Chemical Aspects of the Autonomic Nervous System* (Academic Press).

Finally, the volume contains a welcome memorial to Fred W. Schueler, who originally undertook the editing of this series in medicinal research. Schueler would have considered most of the content of this volume exciting and appropriate.

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Biochemical Methods

Procedures in Nucleic Acid Research. G. L. CANTONI and DAVID R. DAVIES, Eds. Harper and Row, New York, 1966. 683 pp., illus. $25.

This book is offered as the first of a series describing procedures used in nucleic acid research. Its contents are restricted to methods used for the preparation of relevant enzymes and polynucleotides. Treatment of the enzymatic or chemical preparation of substrates, and of the physical and chemical procedures used for the isolation and characterization of macromolecules, is left for future volumes to be published at unspecified times. Some of the chapters are outstanding, and include detailed and critical evaluation of the subject matter; others are merely reproduced, in some cases almost verbatim, from the "methods" sections of research papers in the original literature. The type is pleasantly large and easy to read.

The book is a convenient—and expensive—laboratory reference work. Its usefulness would be enhanced by the prompt appearance of the companion volumes envisaged for the future.

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Books Received

Advances in Electronics and Electron Physics. Vol. 23. L. Marton and Claire Marton, Eds. Academic Press, New York, 1967. xii + 490 pp., illus. $22.50.

Air Survey in Economic Development. Rolt Hammond. Elsevier, New York, 1967. x + 246 pp., illus. $8.50.

Album of North American Birds. Vera Dugdale. Illustrated by Clark Bronson. Rand McNally, Chicago, 1967. 112 pp. $3.95.

The Analytical Toxicology of Industrial Inorganic Poisons. Morris B. Jacobs. Interscience (Wiley), New York, 1967. xxvi + 943 pp., illus. $25. Chemical Analysis, vol. 22.

Applied Optics and Optical Engineer-

(Continued on page 968)