

Book Reviews

Medicinal Research Series. Volume I. Drugs Affecting the Peripheral Nervous System. Edited by ALFRED BURGER. Marcel Dekker, Inc., New York, N. Y. 1967. xxiii + 620 pp. \$27.50.

This series of monographs was conceived by the late Fred W. Schueler and the volume under consideration reflects his interest in the development of the means for explaining the relationships between the structures of molecules and their biological activities in physical-chemical terms.

The book comprises ten chapters dealing with the following topics: molecular aspects of cholinergic mechanisms by S. Ehrenpreis, postganglionic parasympathetic stimulants (muscarinic drugs) by H. L. Friedman, postganglionic parasympathetic depressants (cholinolytic or atropinelike agents) by J. G. Cannon and J. P. Long, ganglionic stimulant and depressant agents by L. Gyermek, drugs acting at nerve-skeletal muscle junctions by J. J. Lewis and T. C. Muir, reversible inhibitors of cholinesterase by J. P. Long and C. J. Evans, acid-transferring inhibitors of acetylcholinesterase by I. B. Wilson, sympathomimetic (adrenergic) stimulants by A. M. Lands and T. G. Brown, Jr., synthetic postganglionic sympathetic depressants by N. B. Chapman and J. D. P. Graham, and effects of drugs on the afferent nervous systems by C. M. Smith.

The editor wisely gave the authors of the various chapters the freedom to present their subjects in the ways which seemed most appropriate and effective. This variety of approaches to related subjects by a group of experts has resulted in an excellent book, which is stimulating and authoritative. It is a pleasure to read and to use this book. The subject matter is well documented.

The group of drugs treated in this volume has been the subject of much study from a number of points of view for many years. The approaches made to the achievement of an understanding of the structural requirements for biological activity and of the modes of action at the molecular level are some of the most highly sophisticated which have been made so far. This fact, combined with the rich, diversified, and up-to-date information and the critical presentation of various views and lines of evidence on this group of drugs, makes this book one which should be of substantial value to anyone who is interested in medicinal chemistry or pharmacology in general and particularly to those who have a special interest in the drugs which act on the peripheral nervous system.

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Neuroendocrinology. Volume I. Edited by L. MARTINI and W. F. GANONG. Academic Press Inc., New York and London. 1966. xx + 774 pp. \$32.00.

"Neuroendocrinology" is a late comer in the field of biological disciplines, but its burgeoning growth is indicated by the two volumes to be issued under this title. To be sure, this growth is not *de novo*, but a merging of two traditional fields. What is new is the unity of approach and concentration on the operational linkage of the endocrine and nervous systems: Ganong says in his Introduction, "Because their functions are similar, it is not surprising that they are related, but the closeness and intricacy of this relation have only come to be appreciated in recent years."

It is also not surprising that this first volume of the series should focus upon mammalian pituitary-hypothalamic interactions, since this has been a rich and medically promising field of study for three decades. The probable direction of blood flow from the hypothalamus to the pituitary through a minute portal system was well established in the 1930's by Wislocki, Houssay, and others. This suggested the transport of neurohumors to the "master gland," and hence a route for the adaptation of the hormonally controlled internal *milieu* to the events of the external environment as interpreted by the central nervous system. Quite

logically, then, the Introduction of the book is followed by two basically morphological papers describing The Anatomy of the Hypothalamus and Pituitary Gland (by P. W. Daniel) and Limbic and Other Neural Pathways that Regulate Endocrine Function (by J. DeGroot). These and the next article (Stereotaxic Techniques and the Production of Lesions by V. Rowland) are essential background to the prospective investigator in the field, since intercession by surgery and drugs has provided the crucial means of studying and analyzing interaction between brain and pituitary. These orientating chapters are rounded out by one in which H. A. Bern and F. G. W. Knowles discuss the concept of Neurosecretion, as evidenced in vertebrates and invertebrates by ordinary histology, electron microscopy, cytochemistry, and various physiological techniques. These chapters are lucidly written and well illustrated.

Against this background the remainder of the volume deals with specific patterns of neurosecretory control. The response of the mammalian organism to water deprivation, hemorrhage, and certain internal stimuli involves the secretion, by the neurohypophysis, of an antidiuretic hormone (W. H. Sawyer and E. Wills, Control of Vasopressin Secretion). Another hormone from the same structure facilitates the efficient transfer of milk from mother to young who have begun to suckle, and possibly has a role in parturition and other reproductive phenomena (B. A. Cross, Neural Control of Oxytocin Secretion). The next chapter, Hypothalamic Releasing Factors and the Neurovascular Link Between the Brain and the Anterior Pituitary (S. M. McCann and A. P. S. Dhariwal) serves as transition to papers on a series of neuroendocrine control mechanisms with certain relationships in common, in particular, the use of the portal vessels to transport substances, originating in the hypothalamus, to the anterior pituitary, which responds with altered secretory rates. Thus, the anterior pituitary produces corticotropin when it receives corticotropin-releasing factor, gonadotropin when it receives gonadotropin-releasing factor, growth hormone and thyrotropin when it receives their respective releasing factors, and prolactin when it ceases to receive prolactin-inhibiting factor. Chapters 9-16 for the most part provide more detailed analyses of the brain-pituitary-target organ feedback systems falling into this general mold. It will suffice here to list their subjects: Control of Adrenocorticotrophic Hormone Secretions (G. Mangili, M. Motta, and L. Martini), Adrenocorticotrophic Hormone Secretion in the Fetus and Infant (K. Milkovic and S. Milkovic), Neural and Other Mechanisms Regulating Aldosterone Secretion (P. J. Mulrow), Control of Thyrotrophic Hormone Secretion (S. Reichlin), Control of Growth Hormone Secretion (A. Pecile and E. E. Müller), Control of Gonadotropin Secretion in the Male (I. M. Davidson), Control of Gonadotropin Secretion in the Female (B. Flerkó), and Control of Mammary Growth and Lactation, by J. Meites. Space does not permit the examination that many of these papers deserve; they are in general well written and certainly well edited.

Three years ago in reviewing a book of the same title by Ernst and Berta Scharrer I wrote, "It is not a textbook but a superlative introductory monograph on Neuroendocrinology." Editors Martini and Ganong are to be congratulated for having produced a book with the full scope and readability of a good textbook.

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Insect Colonization and Mass Production. Edited by CARROLL N. SMITH. Academic Press Inc. New York and London. 1966. xxi + 618 pp. 23 × 16 cm.

The professional lives of thousands of people and untold sums of money have been spent in efforts to eliminate insect pests or to reduce their populations to tolerable levels. However, the general public is scarcely aware of the painstaking work of entomologists and other scientists who have been involved, particularly in recent years, in an entirely different enterprise: colonization and rearing of some of the worst insect enemies of mankind. The rearing of beneficial insects is an ancient art and a young science but bees and silkworms are hardly mentioned in this