Book Reviews

HANDBOOK OF THE SPINAL CORD. Volume 1 Pharmacology. Edited by Robert A. Davidoff. Published by Marcel Dekken Inc. New York. 546 pages. 1983.

The first volume of the series titled "Handbook of the Spinal Cord" should occupy a prominent position on the bookshelves of everyone interested in the pharmacology of the spinal cord. The student, new investigator and established specialist will find this text very valuable as a reference source. Current knowledge of spinal neuropharmacology is presented in a well organized collection of contributions by scientists renowned in their specific areas of specialization. Each author is an active researcher and was selected on the basis of their own contributions to this field of neuroscience. The topics discussed in this monograph include neurotransmitter substances, synaptic function and the effects of various drugs and toxins on spinal cord physiology. Each chapter is a complete review of a specific topic and can be read independently of the others. The chapters together form a cohesive and complimentary text that yields an excellent and concise volume which integrates and summarizes the current status in spinal cord pharmacology. The text overall is very well written, organized in a logical sequence within each chapter, well illustrated and extensively referenced.

The first seven chapters focus on the accepted and putative neurotransmitters of the spinal cord, including glycine, GABA, glutamate, various peptides, acetylcholine, serotonin, and catecholamines. In each of the chapters a brief historical introduction is provided. This is followed by a description of the biochemical or neurochemical details pertinent to each neurotransmitter. Current concepts of synthesis, storage, release and metabolism is well described. The topic of specific receptors is addressed and is evidence of the growing interest in this area. The descriptive information on techniques, results and interpretation is provided at a suitable level of sophistication for the novice to gain a solid introduction to this science and yet also provide some insight into the problems, assumptions and implications of this research.

The physiology and pharmacology of the transmitter substances are presented at all levels of complexity, from the cellular to the whole animal. In a few chapters, the pathophysiology is also discussed, although comparatively subtle in relation to the other topics. Each chapter contains figures, diagrams and tables that enable the reader to completely comprehend current results without the necessity of previous exposure. Where appropriate, the figures from the referenced reports have been reproduced, but these have been well selected for clarity and purpose.

The authors have provided very comprehensive bibliographies for each chapter. References include those of historical importance, classic representation and current reports. The reference lists enhance the usefulness of the text and provide the reader with abundant source material for further reading.

The eighth chapter introduces the spinal fluid and ions therein. Specific reference is made to the regulation of ionic levels, "barriers", functional activities of potassium, calcium and to a lesser extent magnesium. Responses to drug-induced or pathologic changes are briefly discussed. The importance of the ionic milieu of the spinal cord is stressed, yet it is recognized that this area of research has been relatively neglected. It could be argued that this chapter is misplaced; a subject that would provide an excellent introduction to the other chapters. Rather the ions are treated equally as the other substances, toxins and drugs.

The ninth chapter clearly demonstrates the advantages of using cellular cultures of mammalian spinal cord and dorsal root ganglion neurons. This relatively recent advance in technology has advanced neuropharmacological studies at the cellular level. Included in this chapter is an overview of the physiology and pharmacology of cultured neurons and is complete with excellent graphics and reference material.

The final chapter appears to be an attempt to complete the text; to fill the gaps left from the remaining chapters. There are images, however, of a shopping list. The effects of a variety of drugs are discussed briefly, e.g. general anesthetics, ethanol, anticonvulsants, opiates, central acting muscle relaxants, GABA and related mimetics, phenothiazines, central stimulants, etc. The most impressive aspect may be the collection of 585 references. There is obvious duplication, but it may be too critical not to acknowledge the inclusion of some controversial material and statements.

To review a text of this quality was both a pleasure and informative. It is obvious that the text will not satisfy those dedicated to this area of research, yet the intent or objectives of the series as stated in the introduction were clearly accomplished. This volume will prove to be a valuable reference source. It is well organized and indexed. The text lacks somewhat in material pertinent to clinical phenomena; however, this is unlikely to be regarded as a major deficiency, but rather an indicator of the questions that remain to be answered and the specific research problems to be studied in the future.

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MUSCLE PATHOLOGY AND HISTOCHEMISTRY. 1983. By Harvey B. Sarnat. Published by American Society of Clinical Pathology Press, Chicago. 216 pages and 216 color plates. $95 Cdn. approx. (text alone); $220 Cdn. approx. (text and color slide set combination).

This single author book seems to have been designed as a practical guide for the histochemical examination of diagnostic muscle biopsies in neuromuscular diseases. The text is organized into 7 chapters dealing with the most relevant topics.

Chapter 1 is entitled "Introduction to Muscle Biopsy and Muscle Histochemistry" and contains heterogenous items among which "fibrodysplasia ossificans" is curiously dignified by a separate subsection. A meticulous description of the muscle biopsy technique and the tissue preparation is a particularly valuable part of this chapter. The author, however, missed an opportunity to inform his readers about the considerable usefulness of phase-contrast microscopic examination of resin-