

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 patho-

logic 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-

embedded semi-thin sections which can confirm and complement the information derived from cryostat sections and also reveal important findings not obtainable from frozen sections (capillary changes, sarcomere organization, etc.).

Chapter 2 provides a good description of the principal pathological changes of muscle fibers encountered in neuromuscular diseases. Regrettably, the concept and definition of muscle cell necrosis is obscured by grouping this distinct and important pathological reaction together with other vague changes in the nebulous category of "degeneration".

Chapter 3 on denervation and reinnervation is complete and clear.

Chapter 4 deals with the developmental disorders of muscle and congenital myopathies and is extensive, which reflects the author's special interest in this field. There is a plethora of theoretical and practical information concerning skeletal muscle development. Neuromuscular diseases of infants and children are well covered. Nevertheless, the disproportionately generous attention given to certain items seems paradoxical. For example, congenital fiber type disproportion syndrome is allotted two full pages, which is the same as that provided for the discussion of polymyositis and dermatomyositis in a later chapter.

Chapter 5 contains useful information on metabolic myopathies. The confusion of the pathological lipopigment in Batten's disease ("ceroid-lipofuscin") with normal age pigment is regrettable.

Chapter 6, the characterization of the pathological features of polymyositis, dermatomyositis and inclusion body myositis in this chapter is disappointingly vague and imprecise.

Chapter 7 deals with the muscular dystrophies and is concise but adequate.

Additional sections on the pitfalls in the biopsy interpretation, recipes of certain staining techniques and the logistics of histopathological report preparation, illustrated by examples, are quite helpful.

Many of the 214 color plates successfully complement the descriptive information provided in the text. The value of quite a few plates, however, is diminished by flaws in microphotography (or reproduction) or tissue preparation and staining, as well as by the occasional aberrant interpretation (i.e. attributing a cluster of glycogen-depleted fibers in a specimen from an ALS patient to "active fasciculation"; Plate 77).

On the whole, this is a carefully and clearly written text containing valuable practical and some theoretical information concerning skeletal muscle pathology. An up-to-date and ample reference list is a major asset. The author's personal experience in the field is an important factor in making this a credible text. However, this book cannot be regarded as a comprehensive reference work on muscle pathology. Pathologists who are required to supervise the preparation of diagnostic muscle biopsy specimens and to provide basic microscopic interpretation of cryostat sections, will probably find it a convenient guide.

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DIZZINESS, HEARING LOSS, AND TINNITUS: THE ESSENTIALS OF NEUROTOLOGY. 1984. By Robert W. Baloh. Published by F.A. Davis Company, Philadelphia. 197 pages. \$44 Cdn. approx.

The purpose of this book is to present a concise, organized approach to evaluating patients with dizziness, hearing loss, and tinnitus. It achieves this purpose well.

The book is well organized, with a detailed table of contents which enables the reader to rapidly find what he is looking for. The book is divided into three parts. The first deals with the anatomy and physiology of the middle ear, the inner ear, the central vestibular system, and the central auditory system. At 54 pages, this section is relatively brief, but sufficient to give the reader an understanding of basic mechanisms. Part two deals with the history and examination of the patient with vestibular and auditory symptoms. In addition to the bedside examination of the patient, brief sections on electronystagmography, impedance audiometry, auditory evoked responses, and other laboratory tests are included here. Part three deals with diagnosis and treatment. It contains brief discussions of numerous disorders, including vertebrobasilar insufficiency, Meniere's syndrome, benign paroxysmal positional vertigo, acoustic neuroma, and labyrinthine concussion, among others. All of these clinical syndromes and diseases are clearly listed in the table of contents, so that they can be quickly found.

In general, this book is up to date and accurate. For a book of this size, it is extremely well referenced. For example, under Toxic Disorders, there is a one half page discussion of aminoglycosides. This short account is brief, but up to date and still comprehensive. It contains five references, some of which are as recent as 1982. Similarly, in a brief discussion of benign paroxysmal positional vertigo, multiple references are given supporting the statements in the text, and the brief discussion even includes an illustration from pathological studies showing a granular basophilic deposit on the cupula of the left posterior canal.

This book should be useful to all physicians who deal with patients complaining of dizziness, hearing loss, or tinnitus. It is well organized, and brief enough to be useful in the office of the busy family physician. At the same time, it is extremely well referenced and should prove useful to specialists and residents in training as well. This book is highly recommended as a practical information source for those dealing with the dizzy patient.

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CHEMICAL NEUROANATOMY. Edited by P.C. Emson. Raven Press. New York. 1983. 560 pages. 219 black-and-white figures. \$90 Cdn. approx.

This international multiauthored monograph is a scholarly, thorough, and attractively printed state-of-the-art summary of metabolic and neurotransmitter mapping of the mammalian brain using histochemical, fluorescent, immunocytochemical, autoradiographic, and quantitative biochemical methods. The title is somewhat misleading because the scope of the book is