Book Reviews

THE SPINAL CORD INJURED PATIENT, COMPREHENSIVE MANAGEMENT. First Edition 1991. Edited by Bok Y. Lee, Lee E. Ostrander, George Van B. Cochran, and William W. Shaw. Published by W.B. Saunders Company, 339 pages.

The multidisciplinary approach developed by spinal injury treatment centres is reflected in the 29 chapters of this multi-authored text. Topics range from imaging techniques, management of instability, to longterm, nutritional requirements and medical complications.

The authors give an overall view of many aspects of care provided by both medical and non-medical sub-specialities. This includes excellent chapters on hemodynamic monitoring, urologic evaluation and renal insufficiency, reconstructive surgery for the upper limb and hand, and management of coping problems in spinal cord rehabilitation.

The book suffers, however, from the problems often associated with multi-authored text, particularly a tendency to repeat basic information in each chapter which cuts short scholarly discussion of the most topical and controversial issues. There is difficulty with organization of the chapters and a sense of flow from the acute phase of injury through to out-patient management was not developed. This shortcoming would make it difficult for students and residents to place some chapters in perspective. I was surprised at the absence of specific chapters dealing with the pathophysiology of spinal cord injuries, particularly with recent developments in pharmacologic treatment. Also absent was a chapter dealing with spasticity. The chapter on surgical stabilization did not include many of the new surgical techniques commonly used in most spinal injury centres.

As a neurosurgeon, I gained valuable information pertaining to those management problems more commonly dealt with by other specialities, however, I did not find the chapters dealing with acute management problems very insightful.

This book could be recommended to those who commonly treat patients with spinal cord injuries, have a strong basic library, and wish to supplement this with some specific excellent chapters.

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NEUROPSYCHOLOGY AND THE DEMENTIAS. Edition: 1st (cloth and paper). 1990. By Siobhan Hart and James M. Semple. Published by Lawrence Erlbaum Associates Ltd., 343 pages. $66 Cdn. approx.

This book is an informative overview of the clinical, cognitive and neurobiological characteristics of the common dementing illnesses. It can be recommended to neurologists, speech pathologists, clinical and experimental neuropsychologists, geriatricians and pharmacologists who may wish a readable digest of the recent literature. The authors combine expertise in the clinical neuropsychology of dementia and neuropharmacology of cognition.

In Part I, the authors give brief explanations of the experimental, cognitive and clinical traditions within neuropsychology and also clarify the distinction between clinical psychology and clinical neuropsychology. On the whole, this is a useful section, but the cognitive neuropsychological approach is inadequately explicated. The use of information processing models, which are derived from cognitive psychology, and the introduction of computational network modelling in the last five years are not discussed. The importance of experimental single case studies is recognized and the authors rightly emphasize the need for an integrative approach across different disciplines to make progress in dementia research.

In Part II the authors discuss briefly the neuropathological basis of Alzheimer's, Pick's, Huntington's and Parkinson's Disease, Progressive Supranuclear Palsy, Creutzfeldt-Jacob Disease and Vascular and Alcoholic Dementia. Conspicuously absent from this list are some of the rare but important disease entities which have been recognized in the last few years, including Diffuse Lewy Body Disease, Cortical-Basal Ganglionic Degeneration, and especially Frontal Lobe Dementia of the non-Alzheimer type. The authors provide a succinct overview of the known neurotransmitter dysfunctions in different dementia sub-types with emphasis on Alzheimer's Disease. They do not discuss the controversy concerning the cholinergic hypothesis of Alzheimer's dementia; they simply summarize the clinical studies that have altered cholinergic function and indicate that some of these show promise. Like others, they point out the need for precise behavioural methods to assess the effects of any treatment interventions.

Part III highlights the main clinical features of different dementing illnesses and reviews the laboratory investigations available for differential diagnosis. In chapter 7, the role of neuroimaging techniques including CT, PET, SPECT and MRI is discussed. The potential for differentiating frontal and posterior patterns of dementia by PET or SPECT is not elaborated, however, and there is little mention of the importance of MRI in detecting vascular disease or of the ongoing controversy over the significance of white matter hyperintensities on MRI with respect to cognitive function in the elderly. A useful contribution of this chapter is the critique of current approaches to cognitive assessment in dementia including the different instruments used, the problem of estimation of premorbid intelligence and aspects of test development, such as content validity, construct validity, etc. The authors illustrate the deficiencies of many current assessment tools. They also stress the need to supplement quantitative psychometric assessment with detailed behavioural observation of the demented subject.

Part IV, summarizes experimental research on the main areas of cognitive function affected by dementing processes, with the exception of frontal lobe dysfunction, which is not discussed. The chapters on memory and language are the most detailed, since the majority of research efforts over the last two decades has been directed to these important functions. The section on language and communication is an insightful survey, reflecting the first author's own research experience. The chap-

ters on attention, sensory-perceptual function and praxis are sketchy, in part reflecting the relative underdevelopment of these fields of enquiry, but they provide a reasonable starting point for anyone wanting a quick update in these areas.

In the final section on rehabilitation and management a brief survey of cognitive rehabilitation strategies for memory improvement including mneumonic techniques, external memory aids and environmental manipulation are described. There is a brief discussion of the prospects for neurotransplantation and a few paragraphs on molecular biology.

The main value of this book is that it brings together a great deal of information on the neurospychology of the dementias and their neuropathological-neurochemical correlates. Such overviews are helpful since we are entering a new era in which the differential diagnosis of dementia is more than an academic exercise. Already, accessible functional imaging techniques such as SPECT are providing increased pre-mortem diagnostic accuracy and symptomatic treatment and interventions to retard the dementing process are becoming viable options.

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NEOCORTICAL DEVELOPMENT. 1991. First edition. Shirley A. Bayer and Joseph Altman. Published by Raven Press, New York. 255 pages.

This scholarly work by two authors who are well qualified to address the topic of cerebral cortical ontogenesis because of their own major experimental contributions is a meticulously detailed statement of our current understanding of the sequential developmental events in mammalian cortical ontogenesis. The authors rely heavily upon their own data and the techniques they employ, mainly autoradiographic tracing of the fate of primitive neuroepithelial cells labelled at the time of their mitotic generation, through migration and maturation. Less attention is focussed on other morphological evidence based on Golgi impregnations, histochemical and immunocytochemical staining and electron microscopy, and particularly no space is devoted to correlations with biochemical data of neurotransmitter concentrations or to the electrophysiological maturation of the cortex, so that the text cannot be considered comprehensive and balanced as a state-of-the-art overview, but does summarize the years of work and numerous respected publications of the authors themselves as well as citing the contributions of Sauer, Rakic, Sidman, Marin-Padilla, Stensaas, Derer, Wise, Zilles, and many other neuroembryologists.

The book is arranged into four sections and six appendices. Parts 1 and 2 are an overview of cortical morphogenesis and developmental processes. Part 3 consists of 5 chapters, each addressing regional specialization of visual, auditory, somatosensory, motor and limbic cortices. Comparison is made throughout between the organization and ontogenesis of 3-layered palaeocortex (hippocampus) and 6-layered neocortex. Part 4 contains discussions that for me were amongst the most exciting of the text; entitled "Theoretical issues, summary and conclusions", the authors discuss contemporary controversies and incompletely resolved issues such as the meaning of heterogeneity in the population of neuroepithelial cells and whether cell fate is genetically programmed before migration or can be changed by altering certain environmental conditions such as afferent input or laminar position, i.e. the essence of the issue of cerebral plasticity. The orientation of the mitotic spindle within the neuroepithelium as an indicator of neuronogenesis or gliogenesis is presented in this section, with a strongly biased opinion expressed. Appendices conclude the book by providing technical details such as the methodology of autoradiography, determining cellular density in a particular region and statistical applications to the analysis of radioautographic data.

Most of the experimental evidence presented has been gathered from studies of the fetal and postnatal mouse because the normally smooth cerebrum of the rodent is easier to analyze than the convoluted cortex of more complex mammals, but the authors attempt to extrapolate to humans as much as possible and do cite studies of human cortical ontogenesis by others. Only brief references are made to pathological conditions of neocortical development such as lissencephaly/pachygyria and holoprosencephaly and, in my opinion, would have been better left out altogether because the superficial discussion contains overgeneralizations and unsubstantiated statements such as that corpus callosal fibres are not identified in holoprosencephaly because they are mixed within ipsilateral association fibre bundles.

The book is well illustrated and is attractively produced. I would certainly recommend this authoritative text to any serious student of neuroembryology including clinical paediatric neurologists and neurosurgeons interested in fetal brain development.

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PAIN AND CENTRAL NERVOUS SYSTEM DISEASE: THE CENTRAL PAIN SYNDROMES. 1991. Edited by Kenneth L. Casey. Published by Raven Press. 304 pages. $101 Cdn. approx.

This monograph carefully takes the reader on a journey which brings him from research to patient bedside. Appreciation of the complexity of the basis of Central Pain Syndrome (CPS) is growing directly with major advances in the field of functional neurophysiology. The book is based on a symposium on CPS and has contributions from international authorities including basic scientists, physiologists, and clinicans. The reader will recognize the authors: Melzack, Bonica, Tasker, Yaksh, and many others. Although the book suffers from the redundancy of information and differences in style inherent within such a publication, it serves as a useful landmark of the state of the art in central pain.

The first chapter is a summary, and provides a useful overview of the prevalence, neurophysiology, and clinical characteristics of CPS. The next chapter reviews in detail the epidemiology of the syndrome, highlighting spinal cord injuries, multiple sclerosis, post-stroke neoplasm, and other clinical entities. An interesting and brilliant chapter by Dr. Tasker and others outlines the history of CPS, clinical observations concerning pathophysiology and treatment. The review is extensive, with more than 250 references. The authors also interject a large amount of data based on personal experience. The history of neurosurgical treatment is highlighted.