Book Reviews

NEUROPEPTIDES IN PSYCHIATRIC AND NEUROLOGICAL DISORDERS. First Edition. Edited by C.B. Nemeroff (Durham, North Carolina). Published by The John Hopkins University Press, Baltimore. 310 pages. $60Cdn approx.

This multi-authored book provides a review of the "state of the art" in certain areas of the field of neuropsychiatry. The volume begins with a brief overview of the peptidergic neuron by Lee Eiden of the National Institute of Mental Health and concludes with a chapter in which Eric Widerlov of the University of Lund really deals more with the present rather than speculating on "the Future of Neuropeptides in Psychiatry and Neurology" as the title of the chapter would suggest. In between, there are chapters on schizophrenia, manic-depressive psychosis, dementia, Huntington's disease, Parkinson's disease and tardive dyskinesia, sleep and pain. In each, the present knowledge on the state of peptide function in the nervous system is reviewed by people working in this area. The emphasis tends to be on basic science and pathological observations but the few clinical studies available are reviewed in a critical fashion.

I enjoyed reading this book. At first, I was somewhat taken aback by the dearth of Figures and Tables; however, on reflection, this really does not detract from the material presented.

This volume will be of interest to clinicians and clinician scientists in the fields of Neurology, Neurosurgery, and Psychiatry and to basic neuroscientists who wish to have a succinct review of this field. I should think it would be especially appealing to residents and fellows who wish to expand their basic science knowledge in this area and at US$45.00 it is feasible to purchase for one's personal library.

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NEUROPEPTIDES AND THEIR PEPTIDASES. First Edition. Edited by A.J. Turner (Leeds, UK). Published by VCH Publishers, New York. 295 pages. $100Cdn approx.

This multi-authored book is edited by Dr. A.J. Turner of the MRC Membrane Peptidase Research Group, Department of Biochemistry, University of Leeds. Dr. Turner has done an admirable job of recruiting chapters from researchers in Great Britain, Canada, The United States, Japan, and the Federal Republic of Germany.

The volume is generally narrow in scope. It is divided into three sections: Molecular Biology of Neuropeptides, Selected Neuropeptides, and Peptidases and Neuropeptide Metabolism.

In the past few years, the field of neuropeptide research has expanded dramatically and it is no longer possible to keep up with all facets of the research on even a single peptide let alone the more than 40 that have been found within the mammalian nervous system. While initial publications tended to concentrate on the regional distribution of peptides and their putative physiological functions, the application of molecular biological techniques to the study of peptide synthesis has dramatically expanded our appreciation of the complexity of this fascinating group of putative neurotransmitters. Similarly, careful study of the mechanisms by which peptides are metabolized in nervous tissue has also given us a better understanding of their possible physiology.

The authors, in the main, write in a lucid and succinct fashion. A certain familiarity with neuropeptide biochemistry and molecular biology is assumed. Most chapters cover the state of the art up to and including 1986. The tables and diagrams are generally clear. A minor criticism is the reference style chosen by the editor. The bibliographies do not include the titles of the papers cited. Often it is not clear from the context, the type of animal or the situation in which the data were gathered. Without titles, one must go to the original journal article or to the Index Medicus, often only to find that the paper is not what one was looking for. This minor criticism, notwithstanding, this volume would be of most interest to individuals working in the field of neuropeptide research – basic or clinical, who wish to update themselves on research being done in fields parallel to their own or who wish to obtain an overview of the topics discussed.

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DEVELOPMENTAL NEUROBIOLOGY OF THE FROG. Edited by Emanuel D. Pollack and Harold D. Bibb. Published by Alan R. Liss, Inc., New York. 1988. 286 pages. $66Cdn approx.

The three animals most extensively studied for early ontogeny of the vertebrate nervous system and especially of the spinal cord are the frog tadpole, the chick embryo, and the rat fetus. This multiauthored monograph represents the proceedings of a symposium held in New Orleans, USA, December 27-30, 1987. It is both a good review of classical studies of the embryonic development of the amphibian nervous system and an update of contemporary research in mechanisms of ontogenesis under physiological and pathological conditions.

Most of the book focusses on the spinal cord and its lateral motor column, dorsal root ganglia, and posterior horn sensory neurons. The cerebellum is discussed in a single chapter and two other chapters deal with the optic tectum and the retinotectal projection system, but the diencephalon and telencephalon are ignored. There are fewer comparisons with avian and mammalian development than might have been made.

The growth of nerve fibres *in vivo* was first observed and recorded by Cajal in the transparent tail fin of the tadpole. Other classical studies have addressed the factors that alter the rate of programmed cell death of motor neurons by manipulating peripheral fields of innervation: grafting supernumerary limbs or amputating limb buds. The effects of thyroid deficiency and of excess thyroxine on morphogenesis of the nervous system and on physiological cell death also have been thoroughly investigated. These traditional studies are discussed, as well as more recent data regarding neurotransmitter development, the meritocratic selection hypothesis in the control of programmed motor neuron death during ontogenesis, synaptogenesis, specificity of regeneration, and early neuronal differentiation.

As a volume in the series "Neurology and Neurobiology" (volume 44), this monograph is produced on low budget and was published as rapidly as possible using photoreproduction methods rather than formal typesetting. As a result, the right margins are not aligned and the print is that of a good quality electric typewriter rather than a professional printing process. It is quite legible, however. Illustrations and photomicrographs are

rather limited in number, but are carefully chosen and of satisfactory quality. The chapter on immunocytochemistry of neurotransmitters could have been better illustrated and the line drawings are done freehand by the author rather than by a professional scientific illustrator, but they make their points nevertheless.

This volume is useful to investigators in the field and to comparative neuroembryologists, and I do not hesitate to recommend it to this restricted audience. Paediatric neurologists, neurosurgeons, and neuropathologists will find little direct correlation with clinical problems including even spinal dysraphism, but might enjoy perusing portions of it in their library because it does impart an understanding of early events of neural development that relate to disorders of early ontogenesis of the human nervous system.

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MEMORY DISORDERS IN CLINICAL PRACTICE. By Narinder Kapur. Published by Butterworths. 289 pages. $63Cdn approx.

Given the ubiquity of memory disorder in everyday neurological practice, it is surprising that no-one has previously attempted to summarize in one monograph the distinctive features of memory disorders in patients with different brain diseases. Such information is available in separate monographs on head injury or dementia or Korsakoff's disease, but this volume brings together current information on the assessment of memory in specific clinical conditions and the memory profile in different neurological diseases. The author provides a useful introductory chapter on methods of memory assessment including specific tests of verbal and non-verbal memory function. There is brief discussion of implicit memory tasks and retrograde amnesia tests and a description of memory test batteries in current use, such as the Wechsler Memory Scale, the Rivermead Behavioural Memory Test, and the Williams Memory Battery. In the appendices, he also provides sources of materials which may be of use in designing memory tests and in the remediation of memory disorders.

The author describes the memory impairments associated with specific diseases, including chapters on cerebrovascular disease, cerebral tumours, penetrating and blunt head injury, degenerative, demyelinating and hydrocephalic dementias, infections and metabolic diseases, toxic and deficiency states, epilepsy, and cerebral ablations. Each chapter reviews the memory profile as currently known for these disease processes. The summaries on the anterograde and retrograde memory deficits occurring after cerebral trauma are succinct and comprehensive. The author confines his discussion to traditional clinical neuropsychological memory assessment. He does not discuss information processing theories of memory or the experimental neuropsychological literature on memory, for example, Baddeley's research on working memory, or recent reports on semantic memory impairments in Alzheimer's disease. An important short-coming in the chapter on infectious diseases is the omission of any discussion of HIV dementia, which is now the commonest cause of presenile dementia in the United States.

Overall, this is a useful text addressed both to the practicing neurologist or neurosurgeon as well as to the neuropsychologist. It has a comprehensive reference list and encompasses a wide range of neurological diseases. It is well-written and generally avoids jargon. It fills a gap in the neurological and neuropsychological literature providing a practical guide to the memory deficits encountered in everyday clinical practice. The book would be profitable reading for residents in training as well as experienced practitioners.

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IMPACT OF FUNCTIONAL IMAGING IN NEUROLOGY AND PSYCHIATRY SERIES: CURRENT PROBLEMS IN NEUROLOGY: 5. Edited by J. Wade, S. Knezevic, V.A. Maximilian, Z. Mubrin, I. Prohivnik. Published by John Libbey & Company. 208 pages. $58Cdn approx.

This volume contains the proceedings of the Second rCBF Workshop held at Supetar/Brac, Yugoslavia in the Fall of 1986. In fact, most of the discussion relates to the impact of functional imaging in neurology and there is little comment on its use in psychiatric disorders.

The major functional imaging modalities are all included, although the emphasis is quite appropriately given to positron emission tomography (PET) and to single photon emission computed tomography (SPECT). An excellent review of all aspects of PET, ranging from the physics through tracer methodology, to a summary of clinical studies is provided in the chapter by Wise. The chapter by E11 and co-workers provides a useful summary of the types of studies possible with SPECT. Other imaging modalities discussed include stable xenon/CT imaging of cerebral blood flow, and two dimensional imaging of rCBF with xenon 133. Cortical electrophysiological mapping is mentioned briefly with regard to epilepsy. An interesting chapter by Peterson discusses the potential role of NMR in imaging flow, perfusion, and diffusion. Of these measurements perfusion is probably the most important from a functional imaging viewpoint; unfortunately Peterson feels that "perfusion still constitutes a mostly unsolved problem".

While perusing this volume one is struck by some unevenness in presentation. While some chapters such as the one by Wise provide a reasonably complete but brief review of an entire field, other chapters concentrate on much more restricted subjects such as "controversial aspects of brain imaging of migraine" and "remote metabolic effects of stroke". A number of the disease oriented chapters have successfully attempted to compare the different of functional imaging modalities with each other. Most notable chapters in this regard are related to aging by Fieschi et al and to Alzheimer's disease by Smith and Prohovnik.

There is a certain amount of redundancy and repetition in some sections but this is difficult to avoid in a volume of this nature. The individual chapters for the most part are high quality although the work itself would benefit from stricter organization, for example into a section concerning methodology and a section concerning clinical studies. In spite of its short comings this is one of the few volumes available which attempts to discuss the advantages and disadvantages of these complex methodologies and as such deserves the attention of the neurologist or neurosurgeon interested in functional imaging.

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