Books Received

CEREBRAL REORGANIZATION OF FUNCTION AFTER BRAIN DAMAGE. 2000. Edited by Harvey S. Levin, Jordan Grafman. Published by Oxford University Press. 392 pages C$88.00 approx.

CHILD NEUROLOGY – 6TH EDITION. 2000. Edited by John H. Menkes, Harvey B. Sarnat. Published by Lippincott Williams & Wilkins. 432 pages C$102.82 approx.

ELECTRONIC COLLABORATION IN SCIENCE. 2000. Edited by Stephen H. Koslov, Michael F. Huerta. Published by Lawrence Erlbaum Associates Inc. 150 pages C$73.42 approx.

HORMONES, GENDER AND THE AGING BRAIN. THE ENDOCRINE BASIC OF GERIATRIC PSYCHIATRY. 2000. Edited by Mary F. Morrison. Published by Cambridge University Press. 359 pages C$139.65 approx.

LOCALIZATION OF BRAIN LESIONS AND DEVELOPMENTAL FUNCTIONS. MARIANI FOUNDATION PAEDIATRIC NEUROLOGY. 2000. Edited by D. Riva, A. Benton. Published by John Libbey & Company Limited. 165 pages C$99.96 approx.

MERRITT'S NEUROLOGY – 10TH EDITION. 2000. Edited by Lewis P. Rowland. Published by Lippincott Williams & Wilkins. 1002 pages C$130.83 approx.

MOVEMENT DISORDER SURGERY. PROGRESS IN NEUROLOGICAL SURGERY – VOL. 15. 2000. Edited by A. M. Lozano. Published by Karger. 404 pages C$367.13 approx.

NEUROLOGY AND MEDICINE. 1999. Edited by RAC Hughes, GD Perkin. Published by BMJ Books. 415 pages C$66.15 approx..

NEUROMUSCULAR DISEASES: FROM BASIC MECHANISMS TO CLINICAL MANAGEMENT. MONOGRAPHS IN CLINICAL NEUROSCIENCE: VOL. 18. 2000. Edited by F. Deymeer. Published by Karger. 196 pages C$241.81 approx.

PARKINSON'S DISEASE AND PARKINSONISM IN THE ELDERLY. 2000. Edited by Jolyon Meara, William C. Koller. Published by Cambridge University Press. 251 pages C$73.42 approx.

PROCEEDINGS OF THE 9TH WORLD CONGRESS OF PAIN. 2000. Edited by Marshall Devor, Michael C. Rowbotham, Zsuzsaanna Wiesenfeld-Hallin. Published by IASP Press. 1154 pages C$117.60 approx.

Book Reviews

ALZHEIMER'S DISEASE: METHODS AND PROTOCOLS. 2000. Edited by Nigel M. Hooper. Published by Humana. 408 pages C$139.30 approx.

Alzheimer's Disease: Methods and Protocols is published as part of the series of Methods in Molecular Medicine. The series spans a wide range of disease areas with an emphasis on the hands-on protocols and methods that are required in carrying out molecular biological bench research. This multi-authored text has been edited by Dr. Nigel Hooper of the School of Biochemistry and Molecular Biology at University of Leeds and has contributions from many of the molecular research leaders in Alzheimer's disease (AD).

There are two major strengths of this text. The first is the success of the authors in developing a comprehensive overview of the molecular basis of Alzheimer's disease (AD), its genetics as well as its current treatments. The second strength resides in the detailed and specific protocols that are provided for the laboratory methods for the wide range of molecular investigative techniques current to AD.

With the pace of discovery in the molecular biology of AD being as rapid as it is, clinicians, even those with particular interest in this field, have difficulty maintaining an integrated understanding of the different aspects of molecular research. The first three chapters of this book set out to rectify this need with some success. Dr. David Allsop, in the first chapter, provides a much-needed comprehensive overview of the molecular pathogenesis of AD. He provides discussion of both amyloid processing to senile neuritic plaques as well as tau protein to neurofibrillary tangles. He provides his insight into the interrelationships between amyloid processing events and tau phosphorylation, a link that has been elusive in bringing the "B-APP"tists and "Tau"ists together but which seems to be gradually reaching a level of acceptance in the field. He notes that it is the fibrillization of the 1-42 Aə form of amyloid that is seminal to the phosphorylation of tau providing a direct link between amyloid deposition and neurofibrillary tangles in AD. His discussion of tau additionally updates the current understanding of the tau gene, which has been mapped to a single gene on chromosome 17. He adds some discussion of the mutations that have been identified with familial frontotemporal dementia and Parkinsonism (FTDP 17).

Unfortunately the pace of discovery has been so rapid that the discussion of the secretases which are the critical cleavage enzymes of the amyloid precursor protein are already well out of date despite the publication date of the text being 2000. Since the preparation of the text the amyloid precursor protein (APP) cleaving beta-secretase has been isolated beyond the speculation that it existed at the time of the text publication. The gamma secretase is increasingly appearing to be presenilin though final consensus on this point has not yet been achieved. Following from the above there is unfortunately no anticipatory discussion of the emergence of secretase inhibitors as rational therapies for clinical trial investigation. Currently there are

a number of such putative selective secretase inhibitors coming to clinic. These areas will unfortunately date the text quite quickly.

In the second chapter Drs. Brindle and St. George Hyslop review the genetics of AD including a discussion of Apolipoprotein E, presenilins, and APP with particular focus on how each may contribute to the pathogenesis of AD. Their discussion of the presenilins is particularly important in the face of the emerging data that would support the hypothesis that presenilins are the gamma secretases involved in APP processing to AB 1-42.

The final of the overview chapters written by Dr. David Knopman covers methodological issues in AD therapeutics with current approved and research strategies. Again the text is dating quickly in this regard as many of the clinical trials that were in progress during the preparation of the text have now been completed and published. Important recent studies have included negative treatment trials in mild to moderate AD of estrogen and of the COX II inhibitor celecoxib. The development of propentofylline a microglial modulating drug with anti-inflammatory as well as neurotrophic enhancing properties has also been recently halted since the writing of the text.

Beyond the three-overview chapters that start the text, each of the remaining chapters (24) describes the techniques and assays that are used in molecular investigation of AD. Many of the chapters on molecular mechanisms have their final pages dedicated to step by step descriptions of the approaches that are taken in their respective laboratories. The authors provide procedures point by point on amyloid protein purification techniques, bioassays, and the quantification of A∃ 1-40 and 1-42. This is certainly a very unique text for its detailed description of these molecular techniques, which will serve as an important handbook for labs that are active in this field of laboratory research. These chapters are highly technical and will be of limited value to those clinicians or clinical researchers who are not involved in bench research. There is a particularly strong chapter contributed by Dr. Jeanne Loring on animal models of AD with APP transgenes with emphasis on mouse models. Her chapter provides a listing of APP transgenic mouse models, across a variety of mutations, with descriptions of amyloid deposits, neurofibrillary tangle elements and behavioral observations that are seen with the models. This listing is otherwise challenging to put together and will be much appreciated, as are the listings of internet resource sites for transgenic research.

There must be some irony that a criticism of a text in Alzheimer's disease resides in its failure to keep current with the rapid pace of discovery in this disease. Surely the times have changed. Clinicians and clinical researchers will nonetheless want to read and remember this text particularly for the disease overview provided in the first three chapters. For bench researchers this text will be rewarding for the protocols that can be readily referred to on specific procedures and lab investigation. It will likely become a well-worn book within the lab.

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MEDICAL NEUROTOXICOLOGY. 1999. Edited by Peter G. Blain. Published by Oxford University Press. 361 pages. C$240.00 approx.

The editors of this volume have produced a comprehensive guide and reference source for clinicians faced with the problem of determining in patients the presence or absence of toxin-induced disease of the central and peripheral nervous systems.

The book is divided into three sections. Part 1, Clinical Neurotoxicology, includes chapters on diagnosis, developmental neurotoxicology, psychiatric disorders, damage to special senses, envenomations and genetically determined susceptibility. The second, Specific Environmental Hazards, deals with heavy metals and organophosphates. Part 3, Investigation of Neurotoxicity, reviews the diagnostic contributions of neuropsychology, electrophysiology, pathology, chemistry and epidemiology. The final chapter describes neurotoxicity testing guidelines introduced by regulators, such as the US Environmental Protection Agency.

Most of the contributions to this multi-authored text come from the north of England. There are a few entries from the USA, Japan and Canada. Each topic receives a balanced and comprehensive overview with a uniform style of writing and presentation. References are extensive and reasonably up-to-date. There are few illustrations.

Preoccupation of the public and media with the effects of environmental agents, real or imagined, requires scientists to be clear about the boundary conditions of the topics they are discussing. Otherwise they add to the confusion. The opening statement in the section on neuropsychological investigation provides the focus a clinician would anticipate in this text on neurotoxicology: *"This chapter is concerned with the role of neuropsychological assessment in detecting the long-term neuropsychological impairments resulting from the self-administration of, or accidental or environmental exposure to, neurotoxins in individual clients."* Therefore it comes as a surprise to find chapters on such unexpected topics as parasitic and prion disorders, noise and vibration, and spinal injuries. This book is subtitled "Occupational and environmental causes of neurological dysfunction". That may explain why the editors included topics that relate to the environment but which most readers would not consider toxic causes of neurological disease. The editors might equally as well have included bacterial meningitis, therapeutic drug overdose, drowning, or electrical injuries. The decision to include physical and infectious hazards of the environment weakens the book's impact.

Gulf War Illness is the last topic in Part 2, and that raises the important and related matter of somatoform disorders. Those syndromes frequently come into the differential diagnosis of patients claiming toxic illness. As this book is directed at clinicians, it would benefit from a section dealing specifically with the clinical assessment of somatoform illnesses. These changing times have led to a public that believes it is surrounded by risk. We must take care not to fan the flames of the risk culture. Physicians need to be comfortable in saying, when appropriate, "there is no obvious toxin to be concerned about".

There is a great deal of useful information about the effects of toxins on the nervous system in this volume. It also reminds us how much we have yet to learn about the link between a specific toxin and nervous system damage. Research is increasing in this important area. We can anticipate better understanding of the role of neurotoxins in the production of neurodegenerative disease. The importance of genetic polymorphisms in individual susceptibility will be clarified. The impact of neurotoxins on the cytoskeleton and the neurotoxic effects of endocrine disruptors will be defined. Before long, there will be need for a second edition.

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