

Books Received

A HISTORY OF NERVE FUNCTIONS: FROM ANIMAL SPIRITS TO MOLECULAR MECHANISMS. 2004. By Sidney Ochs. Published by Cambridge University Press. 438 pages. C\$140 approx.

AICARDI'S EPILEPSY IN CHILDREN. THIRD EDITION. 2004. By Alexis Arzimanoglou, Renzo Guerrini, Jean Aicardi. Published by Lippincott Williams & Wilkins. 487 pages.. C\$175 approx.

ATLAS OF THE HUMAN BRAIN. SECOND EDITION. 2004. By Jurgen K. Mai, Joseph Assheuer, George Paxinos. Published by Elsevier Academic Press. 246 pages. C\$205 approx.

FOREIGN SPERM. THE CAUSE OF SEXUALLY TRANSMITTED DISEASES, CANCERS, AUTOIMMUNE DISEASES. 2004. By Donald E. Tyler. Published by Discovery Books. 155 pages. C\$50 approx.

INFECTIONS OF THE CENTRAL NERVOUS SYSTEM. THIRD EDITION. 2004. Edited by W. Michael Scheld, Richard J. Whitley, Christina M. Marra. Published by Lippincott Williams & Wilkins. 1080 pages. C\$325 approx.

MECHANISMS OF MEMORY. 2003. By J. David Sweatt. Published by Elsevier Academic Press. 350 pages. C\$110 approx.

MOLECULAR BIOLOGY OF CIRCADIAN RHYTHMS. 2004. Edited by Anita Sehgal. Published by John Wiley & Sons Inc. 283 pages. C\$120 approx.

NEUROLOGY SURVIVAL GUIDE. 2003. Edited by Dave A. Rengachary. Published by Lippincott Williams & Wilkins. 366 pages. C\$40 approx.

TEXTBOOK OF DIABETIC NEUROPATHY. 2003. By F. Arnold Gries, Norman E. Cameron, Phillip A. Low, Dan Ziegler. Published by Thieme New York. 408 pages. C\$120 approx.

THE HUMAN NERVOUS SYSTEM. SECOND EDITION. 2004. Edited by George Paxinos, Juergen Mai. Published by Elsevier. 1366 pages. C\$315 approx.

THE NEUROBIOLOGY OF LEARNING. PERSPECTIVES FROM SECOND LANGUAGE ACQUISITION. 2004. By John H. Schumann, Sheila E. Crowell, Nancy E. Jones et al. Published by Lawrence Erlbaum Associates, Inc. 212 pages. C\$70 approx.

Book Reviews

DISORDERS OF NEURONAL MIGRATION. 2003. Edited by Peter G. Barth. Published by MacKeith Press. 205 pages. C\$85 approx.

With the advent of routinely available magnetic resonance imaging, there has been a profound change in our understanding of the role of disorders of neuronal migration in common neurological syndromes such as epilepsy and mental handicap. Once thought to be rare curiosities of interest only to neuropathologists, these disorders are now encountered by pediatric neurologists and, to a lesser extent, neurosurgeons on a regular basis. Focal cortical dysplasias constitute one of the most common pathological findings in brain specimens removed for the treatment of intractable localization-related epilepsy.

The past twenty years have seen a veritable explosion of published articles on the subject of neuronal migration disorders. Part of this profusion of new information is due to the fact that, as MRI has accurately revealed a large variety of familial structural malformations, molecular genetics has subsequently elucidated the molecular mechanisms of many of the malformations. The combination of radiological imaging and molecular genetics has gradually produced a detailed framework of intracellular mechanics and cell-cell signaling that helps to explain how neuroblasts leave the region where they are created, how they then migrate through the developing brain, and how they manage to arrive at precisely the correct area in an architectural framework that permits normal brain function.

In 1987, the Canadian Journal of Neurological Sciences published

one of the earliest review articles concerning disorders of neuronal migration, written by Professor Peter Barth of the University of Amsterdam. It seems fitting that, sixteen years later, Dr. Barth would be instrumental in editing and co-writing a text book on the same topic, a text which eloquently summarizes the huge advances made in the understanding of these disorders in the interim.

This book is one of the latest in a series published under the aegis of the International Child Neurology Association (ICNA). Over the years, we have come to expect a high level of scholarship and editorial excellence in this series, and this book is no exception. Its origin was a symposium held at the 8th ICNA Congress in Ljubljana, Slovenia in 1998.

In organizing this symposium, and producing the text which is the subject of this review, Dr. Barth drew upon the services of many of the leading experts in the field of neuronal migration disorders.

As might be expected, the book begins with an elegant review of the current understanding of the biological basis of cell production, cell migration and post-migration cortical organization. Once the "normal" process has been elucidated, there follows a series of chapters on the main types of neuronal migration disorders: lissencephaly, nonlissencephalic cortical dysplasias, periventricular grey matter heterotopia, associated callosal and cortical anomalies, hemimegalencephaly, schizencephaly, syndromic cortical dysplasias, polymicrogyria, and fetal disruptions.

While, in a multi-author work, there are necessarily differences in style and degree of detail, there is a remarkable degree of homogeneity in approach, and in the excellence of the result. While

there is some overlap in subject matter, at times, these are appropriately cross-referenced. The chapters are well-written and, by-and-large, well-illustrated. There are some excellent summary tables which help pull together large volumes of diverse information – in particular the tables on lissencephalic syndromes and their genetic bases, and the tables on syndromic cortical dysplasias.

It should be noted that the authors elected to confine themselves to disorders involving neuronal migration to the cerebral cortex. Disorders which primarily involve the brain stem, cerebellum and other subcortical structures are given brief mention or not considered. Since most of the advances in the past 20 years have involved the areas of the brain most easily assessed by MRI – the cerebral hemispheres – this is hardly surprising. In addition, the book deals with a few disorders which are not necessarily disturbances of cell migration (e.g. focal cortical dysplasia with balloon cells, polymicrogyria) but which are often seen along with migration disorders in individual patients.

Overall, this book is a timely review of a burgeoning and important topic. It is very well done, and will be of great help to pediatric neurologists, as well as of interest to geneticists, pediatricians and adult neurologists.

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EPILEPTIC SYNDROMES IN INFANCY, CHILDHOOD AND ADOLESCENCE

Third edition. 2002. Edited by Joseph Roger, Michelle Bureau, Charlotte Dravet, Pierre Genton, Carlo Tassinari, Peter Wolf. Published by John Libbey Eurotext. 544 pages. C\$189 approx.

This is the third edition of *Epileptic Syndromes in Infancy, Childhood and Adolescence*. The book is intended for a target audience including epileptologists, pediatric neurologists, adult neurologist and trainees in the fields of epileptology and neurology.

This edition has significant changes in content and appearance since the previous published in 1992. Over the past decade there have been many advances in basic and clinical epileptology with the addition of many new syndromes of epilepsy. Advances in the fields of genetics and neuroimaging have led to a better understanding of the various syndromes. The book continues to be based predominantly on the European classification syndromic approach to epilepsies, with the use of recently relabeled syndrome names (eg Dravet syndrome for severe myoclonic epilepsy of infancy). This edition has, however, incorporated the perspectives of authorities worldwide.

There have been many additions since the previous edition. The content continues to be very complete and has been updated to reflect current opinions and advances. The references have been updated with the new advances that have occurred over the past decade.

Section I, which deals with epileptic syndrome in neonates has been altered to include a single chapter (from the previous two) discussing severe neonatal epilepsies with suppression-burst pattern. Section II, which deals with epileptic syndromes in infancy and childhood is improved in its organization and progression through the syndromes. Additional chapters have been added including migrating partial seizures in infancy, idiopathic and/or benign localization-related epilepsies in infant and young children and non-idiopathic localization-related epilepsies in infants and young

children. Epilepsy and inborn errors of metabolism has been moved to a new section. Section III, which deals with epileptic syndromes in childhood has undergone a significant reduction in the number of chapters, largely due to the synthesis of multiple chapters into one. There are additions of new entities: The HHE syndrome. Section IV, which deals with epileptic syndromes in older children and adolescents has been renamed. Changes to this section include a chapter which addresses the reflex epilepsies, which is an expansion from the previous edition that reviewed only reading epilepsy. A chapter has been dedicated to the isolated partial seizures of adolescence and the chapter on photosensitive epilepsies has been expanded. Section V has been added with most of the additions to the book. Chapters have been dedicated to chromosomal disorders, cerebral malformations, Rasmussen's syndrome, mesio-temporal lobe epilepsy syndrome and recently defined genetic syndromes. These have added significant content to the book and have included more recent advances in technology for diagnosis including fMRI and SPECT.

Overall, this is an excellent reference resource. It remains the most complete book reviewing epileptic syndromes in infancy, childhood and adolescence. I was very pleased with the revisions from the old edition. I can guarantee it will be referred to many times before the next edition.

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DYSTONIA. VOLUME 94, ADVANCES IN NEUROLOGY.

2004. Edited by Stanley Fahn, Mark Hallett, Mahlon R. DeLong. Published by Lippincott Williams and Wilkins, Philadelphia. 312 pages. C\$220 approx.

This multi-authored volume represents the proceedings of the Fourth International Dystonia Symposium, held in June, 2002, and sponsored by the Dystonia Medical Research Foundation and the National Institutes of Health. The monograph addresses both basic and clinical aspects relating to the clinical features, etiology, pathogenesis and treatment of dystonia, providing a broad spectrum of information of value not only to clinicians who deal with dystonic patients, but also to researchers studying pathological aspects of motor control.

Initial chapters deal with the pathophysiology of dystonia, starting with a scholarly contribution regarding the role played by surround inhibition in normal motor control, and the possibility that impaired surround inhibition may underlie the development of dystonic symptomatology. Several chapters deal with the putative role of sensory systems and aberrant neuroplasticity in the development of dystonia. The role of transcranial magnetic stimulation as a tool for studying the motor system is emphasized in several of these chapters; the contribution of functional imaging is discussed in multiple chapters throughout the volume.

Subsequent sections deal with genetic causes of dystonia, concentrating appropriately on Oppenheim's dystonia with several scholarly discussions relating to the role of torsin A mutation in early-onset primary dystonia, but also reviewing other major genetic forms of primary dystonia. Several chapters deal with potential dopaminergic mechanisms involved in the production of dystonia. A series of chapters deal with various types of focal dystonias, concentrating on the broad spectrum of task-specific dystonias seen