

Book Reviews

SLEEP DISORDERS IN MEDICINE – BASIC SCIENCE, TECHNICAL CONSIDERATIONS, AND CLINICAL ASPECTS. 1994. Edited by Sudhansu Chokroverty. Published by Butterworth Heinemann. 504 pages. \$C163.00.

This ambitious multi-authored text approaches sleep disorders in medicine from a very practical perspective. The text is divided into three parts, basic aspects of sleep, technical considerations and the third and largest section, clinical aspects of sleep medicine.

Part one provides an overview of sleep, including basic mechanisms and neurotransmitters underlying control of sleep. Although REM sleep generators and mechanisms of effector cell activation are well described, the generation of slow wave sleep is relatively neglected in this section and not discussed in detail until chapter 20. All of the chapters in this first section are well illustrated including a section on neural control of breathing.

Part two, or the technical section was impressive in that it described and illustrated all of the common abnormalities or technical problems encountered in routine polysomnography and multiple sleep latency studies, including cardiac abnormalities, movement disorders, nocturnal penile tumescence and scoring controversies. This portion of the text would in particular be of assistance to technologists recently introduced to polysomnography. Chapter 11 on the other hand dealt exclusively with ambulatory recording for insomnia and describes in detail the Medilog 9000 series cassette ambulatory monitoring system which the author finds helpful in ruling out periodic movements and apnea in sleep.

The final section of the book contains chapters devoted to all of the major sleep disorders and is introduced by a discussion on the classification of sleep disorders by Michael J. Thorpy, based on a more recent concept of "intrinsic" and "extrinsic" causes of sleep disruption. Within this section there are a number of chapters which are more outstanding. These include the chapter on Narcolepsy by Christian Guilleminault which addresses several current and controversial issues in this disease; the chapter on Sleep, Breathing and Neurological Disorders by Sudhansu Chokroverty which covers neurodegenerative, autonomic and neuromuscular disorders; and the chapter on parasomnias by Roger Broughton which describes the full spectrum of episodic nocturnal events.

The chapter on sleep disturbances in a variety of medical problems was also quite comprehensive with a spectrum of discussion ranging from asthma to fibromyalgia and the intensive care environment. The distinction of group variants based on age has resulted in considerable repetition within this final section. Also an informative discourse on positive airway pressure in the treatment of sleep related breathing disorders is reserved for the final chapter, illustrating the expanding role of this type of therapy in a wide variety of respiratory and neuromuscular disorders. While CPAP and BIPAP are well covered, other types of therapy for obstructive sleep apnea are neglected. All chapters however contain some therapeutic suggestions or recommendations. The outstanding feature of this text is that it is in fact a practical guide to sleep disorders medicine. The more esoteric, theoretical issues are discussed briefly as a practical and logical step towards investigation and treatment of patients with a wide variety of medical and psychiatric problems. I would recommend this volume for any one embarking on a career in sleep medicine, general internists or neurologist and respirologists working in sleep medicine. Those already working in the clinical environment of sleep disorders may find this work less rewarding. The

text will still provide varied opinions in areas of controversy and evolution.

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IMAGING OF HEAD TRAUMA. 1993. By Alisa D. Gean. Published by Raven Press. 591 pages. \$C156.00

This is an excellent book which fulfills the goals of the author to present "a clear, concise, but comprehensive, up to date text of accurate information with graphic and provocative illustrations" with regard to imaging of head trauma. There are ten chapters each of which addresses a specific category of injuries which either share similar pathophysiology or involve the same general area.

There is an introductory chapter covering epidemiology and classification of brain injuries, imaging modalities and prognostic factors. Chapters titled: Skull and scalp trauma, Extra-axial collections, Concussion, contusion and hematoma, White matter shearing injury and brainstem injury, and Brain herniation follow. The final four chapters address Vascular injury, Pediatric trauma, Maxillofacial trauma and Post traumatic sequelae.

Each chapter begins with a legend of contents numbered as to page. References after each chapter are numerous, pertinent and current and appear in the order they are referred to in the text, so there is no necessity to skip about searching for them. At the end of the book there is a clear and detailed subject index.

This book has the advantages of a single writer i.e. there is consistency in style, and there are numerous cross references to related material and illustrations in other chapters thus avoiding duplication.

The quality of CT and MR and angiographic reproductions is excellent and they are accompanied by clear labeling and text so that one does not have to do battle to find arrows and arrowheads in the illustrations.

The book is not perfect and there are some errors with regard to reference citations, labeling of drawings and spelling. These however are infrequent and do not detract from the fact that considerable thought and care has gone into the preparation of this book. Some subjects which may be confusing for those not dealing with MRI on a daily basis such as MR of hemorrhage and MR angiography are expanded upon. The author has also added the experience and current thinking at her base hospital, The San Francisco General Hospital.

I found the book easy to read and the chapters are not too long to handle as separate segments. I can recommend this book both as a teaching text and excellent reference source to any one involved in the care of patients with head injury. Radiologists, neurosurgeons, trauma surgeons and residents in these respective areas as well as neurologists dealing with trauma will find the book very useful.

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THE ENCYCLOPEDIA OF MOLECULAR BIOLOGY. 1994. Edited by Sir John Kendrew. Published by Blackwell Science. 1152 pages. \$C195.00.

Most neurologists, neurosurgeons and neuroscientists now recognize that the enormous developments in molecular biology that

have taken place in the last twenty years are having an impact on their practice or scientific endeavours that is expanding exponentially. It is increasingly important to have a grasp of molecular biological principles and the techniques by which these have become elucidated to allow us to integrate this information appropriately. Many of us have had very little training in molecular biology however, and the pace of this field is such that the methods, concepts, and implications of molecular biological research remain rather foreign to us. As remarked upon in the preface of this text, very few individuals upon opening the latest issue of *Science*, *Nature* or *Cell* are capable of understanding the vocabulary used in the majority of articles.

The *Encyclopedia of Molecular Biology* attempts to rectify the difficulties inherent in understanding the molecular biological literature by providing in encyclopedic and dictionary like format, a reference source to the nomenclature and jargon that this field is based upon. It is authored by approximately 250 molecular biologists and scientists who represent a virtual who's who of modern molecular medicine. Most of these individuals are from the United Kingdom, although some are from the European community and only a few from North America. It is formatted as both an encyclopedia and a dictionary where approximately 4,000 short definitions are listed alphabetically and interspersed with these are 217 longer reviews on selected important topics. There is extensive cross referencing to other entries in the text, and a bibliography following the longer reviews directs the reader to important articles in the field. The longer entries are quite comprehensive covering fields such as structural biology, molecular genetics, bacteria and bacteriophages, cell biology, evolution and developmental biology, immunology, neurobiology, molecular medicine, and plant molecular biology. Contents lists of long entries are provided alphabetically and by subject. Illustrative figures are drawn primarily from the peer-reviewed scientific literature, other texts, and review articles.

Few topics are covered in any great depth, however this is not the intent of the format of this publication. I found it a very useful book for filling in gaps in my knowledge and for updating me in principles and methodologies of molecular biology and how they might be applicable to the field of neuroscience. Despite its cost, it represents a very good value for anyone who would like to derive an increased understanding from the molecular biology literature that they encounter.

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HIV, AIDS, AND THE BRAIN. 1993. Edited by Richard W. Price and Samuel W. Perry III. Published by Raven Press. 352 pages. \$C129.00.

Human immunodeficiency virus infection (HIV) is associated with protean neurological complications and syndromes, which include primary effects of the virus at multiple levels of the neuroaxis, opportunistic infections, and neoplasms. *HIV, AIDS, and the Brain* was based on presentations given at the meeting of the Association for Research in Nervous and Mental Disease, which was held in New York, NY in December 1992. The book focuses on the pathogenesis and clinical aspects of HIV dementia, which is also known as the AIDS dementia complex in order to emphasize the motor and behavioural components of the disorder. The emphasis of the book is on basic science aspects of the complex pathogenesis of this disease.

The book begins with a comprehensive review of current knowledge on pathogenetic mechanisms of HIV dementia with useful background information on the molecular biology of the virus and on immunological aspects of the disease, including the role of cytokines. Pathological aspects are well covered and there are chapters comparing the brain pathology of HIV dementia with the simian immunodeficiency virus model in primates (Drs. L. Sharer and Clements et al.) and with peripheral nerve disorders in HIV infection (Dr. J. Griffin et al.). Dr. S. Lipton discusses therapeutic approaches to prevent HIV-induced neuronal injury using NMDA antagonists.

The clinical features of HIV dementia in adults and of progressive HIV encephalopathy in children are also well covered in chapters by Dr. J. McArthur et al. and Dr. A. Belman, respectively. The role of therapy with antiretroviral agents is discussed. Psychiatric disorders associated with HIV infection, including depression, are also well reviewed in two chapters. The book ends with an excellent chapter by Dr. R. Johnson who puts the infection in historical context with other viral diseases and addresses important unanswered questions about the associated neurological diseases.

In summary, this is a comprehensive book on the primary effects of HIV infection on the brain that summarizes recent basic and clinical research in the field. I highly recommend this book to neurologists, neuropathologists, neuroscientists, psychiatrists, and infectious disease specialists who have an interest in recent developments in neurological aspects of HIV infection.

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PEDIATRIC NEUROIMAGING. 1994. Second Edition. By A. James Barkovich. Published by Raven Press. 684 pages. \$C189.00.

The first edition of this outstanding book was published in 1990 with 355 pages. This edition, four years later, has nearly doubled in size but still is a most reasonable price, especially for such a useful textbook. There is an average of between 2 and 3 images per page. The author is most experienced and a member of one of the premier neuroradiology departments in North America and notwithstanding being in a general large teaching hospital and not a freestanding pediatric hospital, has a surprisingly large number of pediatric neuroradiological cases. The author, in his preface, acknowledges that the book is primarily that of magnetic resonance neuroimaging rather than general pediatric neuroimaging. This textbook would have been even better for the general audience had it contained a little more correlative CT or indeed CT as the only necessary examination and a few more suitable plain films. This reviewer acknowledges that the book then would have to be larger yet more expensive and this is merely a constructive and positive comment.

All aspects of pediatric central nervous system pathology have been dealt with, including a most succinct chapter on techniques and methods. Examining children such as these with complex conditions is often difficult. It is the rare book that deals with these, and they are by and large unobtainable elsewhere. The chapter on the normal developments of the brain and spinal cord as seen on MR is outstanding but again great advantage could have been made by including a concise discussion and demonstration of the bony components of the neural axis. These are relatively minor points when compared to the excellent style and substances of the chapters as a whole, in particular those dealing with toxic and metabolic brain disorders, congenital malformations of the brain and phakomatoses