

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.

Robert Bell
Calgary, Alberta

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.

Alan C. Jackson
Kingston, Ontario

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

and brain tumors of childhood. The organization, the completeness, the excellence of illustrations and the judicious use of appropriate tables and gumut lists in a logical fashion, make, even to this battle worn pediatric neuroradiologist, delightful and informative reading. The organization into small succinct paragraphs and sections dealing with the essence of the neuro-imaging of each particular disease entity, is suitably and successfully enhanced by a small but appropriate number of relative references which are, throughout the book, up to date. This reviewer knows only too well the effort necessary to keep both illustrations and suitable references up to date and make them appropriate. The use of arrows is particularly pleasing. The line drawing whether unique from the author or adapted from others are used in those areas which maybe difficult to understand. On page 442 and in the chapter on Hydrocephalus one such drawing relative to the ventricular index of the frontal horns and the ventricular angle is more of historical interest and helpful to the nonpediatric neuroradiologist. The chapter on brain tumors in particular is a veritable atlas, found in very few other places and here the successful reproduction of images is to be applauded. The author also has used a time honored but readily utilized technique of highlighting the diagnosis or the aim of the illustration as a minor heading. This adds immeasurably to the readability of the illustrations. Although satisfactory, discussion of angiography and vascular diseases could be expanded from just a chapter to throughout the book.

What the author therefore has done is dramatically to expand and improve his first edition, both in step with the times and techniques and to highlight our better understanding of the disease processes and the enhanced peculiarities of their neuroimaging. It becomes a useful companion to excellent neuroradiology chapters in general pediatric radiology books (eg. *Practical Pediatric Imaging* published by Little, Brown), the appropriate chapters in publications on general diagnostic neuroradiology (eg. *Diagnostic Neuroradiology* by Anne Osborn, published by Mosby) and together with those dealing with MRI of the central nervous system in children (eg. *MRI in Pediatric Neuroradiology* by Samuel M. Wolpert and Patrick D. Barnes published by Mosby), amongst others. With the addition of this book to those mentioned, all published recently, not only is an up-to-date and comprehensive knowledge of pediatric neuroradiology in all its guises obtained, but also the perspective of pediatric neuroradiology within neuroradiology and within pediatrics in general. This textbook is one of the most used and at times "permanently borrowed" books in our department. However it is this reviewer's opinion that in addition to dedicated pediatric neuroradiologists, it will make more than just a referral textbook for pediatric radiologists, general neuroradiologists, pediatric neurologists and neurosurgeons especially, but will also be an essential aid in their day to day practice. This reviewer found it a pleasure to read even in large portions at a time, for it is well written and at times extremely concise, therefore a time efficient exercise. It is probably a little too focused for someone at the resident level, but whether one sees one pediatric neurological or neurosurgical patient a week or 10 a day on whom pediatric MRI is performed regardless of the subspecialty, and this book is an essential companion. If not better than others, it is outstanding and this reviewer knows that within another 4 years, another edition should be available.

*Derek C. Harwood-Nash
Toronto, Ontario*

NEUROCARDIOLOGY. 1994. Edited by J.A. Armour and J.L. Ardell. Published by Oxford University Press Canada. 443 pages. \$C91.00.

The insights of the ancients are not always passed down from generation to generation. Our classical forefathers knew that the mind, soul, and heart were inextricably linked, but for decades much of this connection has not been appreciated by technically trained contemporary physicians. Those of us who specialize in diseases of the nervous system might easily be lulled into thinking that the heart is a rather simple organ, capable of going faster or slower, and whose main function is to feed the brain. Obversely, physicians more oriented to the cardiovascular system could be content with conceiving the brain as an organ which places an inordinately high demand for bloodflow, and whose major role is to speed or slow the heart. This admirable volume is an attempt to dispel some of these myths, and to highlight recent advances in the intricate and multi-level interactions of the brain, peripheral nervous system, heart, and peripheral vascular system.

The editors, who are both authorities in the field, have compiled a volume of 16 chapters. The overall organization of this book is excellent. The book flows smoothly through sections on afferent cardiovascular neurons, efferent parasympathetic and sympathetic neurons, and intrinsic cardiac neurons. Succeeding chapters deal with efferent autonomic neuronal control of specific cardiac functions, coronary circulation, cardiac electrophysiology, and interactions between peripheral and central neurons. There are no less than three full chapters on spinal cord neuronal regulation, cardiovascular neurons in the medulla oblongata, and suprabulbar neuronal regulation of the heart. The final three chapters are designed to bring it all together: the control of cardiovascular function in the awake subject, clinical arrhythmias, and the role of the autonomic nervous system in clinical heart failure. All of the authors are well respected workers in their respective fields.

With this admirable organization and cadre of authors, how well does the book succeed? On the whole, the chapters are clear and well written. There is relatively little overlap between chapters. This book is a comprehensive approach to an overlap between two fields and it succeeds quite well. As a cardiologist, I found the chapters on spinal cord and brain cardiovascular regulation particularly illuminating. The two chapters on mammalian intrinsic cardiac neurons, written by the editors, are clear expositions of state of the art work. There is a surprising richness of intrinsic innervation within the mammalian heart. Intracardiac neurons respond to a variety of mechanical and chemical effectors, and the authors have documented the presence and functional integrity of intrinsic cardiac ganglia. These ganglia interact both efferently and afferently with central mechanisms. Although the variety of effectors suggests a number of functions for these neurons and ganglia, the field is still in its youth and their teleological role has not been established.

Overall I was struck by the multilevelled complexity of neuronal cardiovascular control. However this richness of feedback mechanisms does raise a question: How does anything ever get done? Many systems seem designed to feed back and dampen each other and one is impressed that the brain, like the federal government, is ever able to make a decision.

On balance, this is an ambitious and impressive book which is a worthwhile addition to the libraries of workers in the field. I highly recommend it.

*Robert Sheldon
Calgary, Alberta*