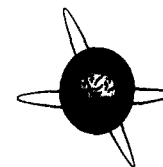




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Book Reviews

edited by E. Niedermeyer and N.M.F. Murray

Vision and Clinical EEG. – T. Takahashi and Y. Kuroiwa (Eds.) (Shinkoigaku Publishers, Tokyo, Japan, 263pp., Price: approximately US \$150.00)

This book comprises a cast of 45 authors from different fields and covers a wide area of clinical and electrophysiological aspects concerning vision. Dr. Takahashi is a scientist renowned for his pioneering work in photosensitive epilepsy by exploring various photic stimulation devices. Dr. Kuroiwa is well known for his important contribution to visual evoked potentials (VEP) and electroretinogram (ERG) studies. About half of the chapters have been written by these two distinguished authors.

Since the book is written in Japanese, it would be prudent to discuss it section by section. Section 1 reviews the functional neuroanatomy of the visual system. Section 2 explains various methods of physiological testing of the visual system and Section 3 reviews their clinical applications. Section 4 presents case reports, and finally, Section 5 discusses recent advances and topics in vision research.

Section 1 describes the processing of visual information from perception and recognition to memory. Dr. Iwai, who wrote this section, has contributed extensively to the field of cognitive neurophysiology. Although much of this section is based on his work, only his publications are listed in the references, without been cited in the text.

Section 2 describes recording methods, stimulating devices and basic technical aspects of mechanisms for obtaining electroretinogram (ERG), photic EEG response, visual evoked potential (VEP) and event related potential (ERP). In this section, Dr. Takahashi describes his innovative photic stimulation devices using various geometric patterns, including dotted (which he calls 'water bubble') pattern and color filtered pattern. Based on his extensive experience in the use of these photic stimulating devices, he proposes different physioanatomical activating mechanisms between red filtered and geometric ('water bubble') patterns eliciting photoparoxysmal responses. In the VEP section, Dr. Kuroiwa includes detailed age-related normal data from his own work. Basics for visually induced ERPs are well described by Dr. Okita.

Section 3 starts with clinical symptoms and anatomical correlates of various visual disturbances secondary to the lesions in occipital lobes and neighboring areas. This is followed by clinical applications of ERG, EEG with photic stimulation, VEP and ERP. Dr. Kuroiwa includes precious data on detailed age-related normal ERGs for transient and steady-state stimulation and their gender difference. Along with a case presentation, Dr. Takahashi describes a specifically limited photic driving response to 5 Hz stimulation, without discussing the specific pathophysiological significance of this observation. Clinical applications of ERP driving response for schizophrenia and temporal lobe epilepsy are concisely summarized by Dr. Matsuoka.

Section 4 presents a collection of case reports that include typical or unique patients presenting with various symptoms or diseases. There are EEGs from blind patients, occipital lesions, occipital lobe epilepsy, reading epilepsy, abnormal photic driving response in patients with dementia, psychiatric (schizophrenia, autism, Down's syndrome) disorders, and photomyoclonic and photoparoxysmal responses in patients with various conditions. Patients with abnormal VEP and/or ERG are

also presented. Because of the multiple contributors for this section, presentation formats vary.

Section 5 presents recent developments and topics of various testing methods for visual system and functions. This includes recovery functions for ERG and VEP to paired stimuli, pattern reversal VEP to color stimulation, VEP measures by magnetoencephalography, application of PET scan, an experimental model of photoparoxysmal response in monkey (*Papio papio*), eye movement alteration in patients with schizophrenia, and photosensitive epilepsy induced by video games. There are worthwhile topics that are to be explored further in the future. The topic by Dr. Matsue, who has explored eye movement alteration in schizophrenia patients, is uniquely noteworthy. In the chapter discussing the experimental model of photoparoxysmal response, it is rather surprising that the author did not cite any of Dr. Juhn Wada's pioneering work. Also, some of the figure sources are not acknowledged.

The book uniquely covers the entire electrophysiological field of the visual system and functions with well organized information. The numerous illustrations are mostly excellent. There is some lack of uniformity in the mode of references, citations, and listings. The book is recommended for vision researchers, neurologists, ophthalmologist and neurophysiologists. I hope the book will be translated into English so this information can be shared internationally.

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Clinical Electromyography, 2nd edn. – William F. Brown and Charles F. Bolton (Eds.) (Heinemann, Boston, 1993, 810pp., Price: US \$150.00)

The Second Edition of Clinical Electromyography edited by William F. Brown and Charles F. Bolton is a welcome addition to the library of electromyographers and neuromuscular neurologists. Maintaining the high quality of the First Edition, Brown and Bolton, both recognized experts themselves, have assembled a group of international authorities to assist in this book. More impressively, Brown and Bolton have personally contributed extensively to this book, three and two chapters respectively, rather than just assuming an editorial role. As a result, the reader gains from sharing their extensive knowledge on the multiple subjects of their expertise.

The emphasis in the book is on disorders of the peripheral nervous system, with 16 of 26 chapters covering the topic. In addition, two other introductory chapters on positive and negative manifestations of nerve dysfunction add to the information presented on the topic. This provides a comprehensive evaluation of the subject. Particularly excellent are the chapters on 'Radiculopathies' and on 'Metabolic and Toxic Neuropathies', although the former is a bit too dogmatic in its approach to the electrodiagnostic evaluation; many surgeons would agree that in the majority of patients with single level radiculopathies, a detailed history and examination supported by appropriate imaging studies are adequate for patient treatment decisions. Certain chapters, for example, 'Classification and Electrodiagnosis of Hereditary Neuropathies', are

undergoing such rapid change due to advances in molecular genetics that the classification schemes are outdated by the time of publication. However, the fundamental information contained is extremely useful.

The introductory chapters under 'Approaches to the Nervous System in Electromyography' are extremely useful and summarize a wealth of information not widely available elsewhere. The chapters on 'Central Electromyography' and 'Tremor' are particularly well-written.

The book is well illustrated throughout with many useful tables. Especially helpful are the authors' summaries at the end of each chapter, allowing the reader to know what the author believes are the key points in a succinct fashion.

One of the strengths and weaknesses of the book is the obvious repetition of material among the chapters. Certain subjects are covered in several chapters. The main advantage of this is that the reader is able to obtain several expert views of the same subject and then compare and contrast them. The disadvantage is when the views are so contradictory as to be disconcerting, as illustrated in the coverage of what is best known as multifocal motor neuropathy (MMN). In the chapter by Eisen and McComas, MMN is dismissed as a nonentity (p. 445); in the oddly titled chapter 'Atypical Motor Neuron Disease' (which discusses a variety of syndromes which are not classical ALS, but include immune-mediated and demyelinating neuropathies), the subject is confusingly discussed as several different disorders. Similarly, while chronic inflammatory demyelinating polyneuropathy is primarily discussed in Chapter 20, but only on four pages, it is mentioned in at least three other chapters. In the next edition, the Editors will need to pay more attention to this.

Overall, *Clinical Electromyography*, edited by Brown and Bolton, is an extremely valuable book and will be useful to the experienced and training electromyographer and the neuromuscular clinician. This reviewer looks forward to future editions of this fine work.

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Neurological Aspects of Substance Abuse. – John C.M. Brust
(Butterworth-Heinemann, Boston, 1993, 289pp., Price: US \$80.00)

This monograph is a concise yet comprehensive treatment of an important and contemporary topic. The author has a great deal of first-hand experience with the topic of neurological aspects of drug abuse as the current and long-time Director of Neurology of New York City's Harlem Hospital Center. As a sole-authored text, this book offers a degree of organization and uniformly high quality presentation not found in multi-authored books on similar subjects. The subject matter is presented in a straightforward manner with an introductory chapter followed by discussions of 11 major classes of abused drugs including: opioids, amphetamines, cocaine, barbiturates, marijuana, hallucinogens, inhalants, phencyclidine, anticholinergics, ethanol and tobacco.

Most chapters are brief (approximately 10 pages) except for more extensive presentation (20–30 pages) for the substances with extensive neurologic complications such as the opioids, amphetamines, cocaine and alcohol. Chapters are mostly organized in a similar manner covering: basic pharmacology and animal studies, historical and epidemiological aspects, acute drug effects and their treatment, issues of dependency and withdrawal (when appropriate), medical and neurological complications, and obstetric and pediatric aspects. As should be apparent by the chapter descriptions, this is not a book devoted solely to neurological complications of drug use and abuse. Dr. Brust attempts and succeeds in presenting neurologic aspects as part of the more global issue of drug action toxicity and abuse. Strictly neurologic issues usually comprise two-thirds of each chapter. The disadvantage of this broader approach to the subject is the brevity of treatment of what most

readers will consider the heart of the book: the discussions of neurological complications. There is little detail to many descriptions of complications, although these sections are still very useful in spite of their brevity. Dr. Brust is able to present this complex topic in a very concise manner through extensive and effective use of citations. Numbers of citations range up to several hundred per chapter and are presented with full (including titles) rather than condensed form. Citations are provided directly after a specific comment or point is made, making this book a highly useful reference in the field and a comprehensive guide to the existing literature.

For a subject charged with social and moral implications, the presentations are not judgmental or diluted by unsubstantiated commentary. The discussions of historical and epidemiological aspects effectively place current issues in perspective without editorializing. Dr. Brust's opinions on these issues may be reflected in his choice of famous quotations on subjects that introduce each chapter and range from Freud's view of cocaine to Nancy Reagan's 'Just say no'. The author's grasp of historical aspects of the subject will also give readers a perspective on the changing patterns of drug abuse and its complications, including the impact of HIV infection.

In general, the book reads well, particularly the less scientific sections, and reflects the author's extensive experience with the subject. Sections on pharmacologic and medical side effects are too compressed for general reading but are useful as references. The monograph is presented in a compact form with minimal use of illustrations. Most are tables consisting of lists; rare figures are only structural chemical formulae.

The book represents a remarkable mastery of literature on this subject, and I can strongly recommend it to clinicians, students and interested scientists.

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Elements of Molecular Neurobiology, 2nd edn. – C.U.M. Smith
(Wiley, New York, 1996, paperback, 534pp. Price: US \$48.00)

This is a thoroughly enjoyable book. Molecular biology, the steamroller of modern medical sciences (and neurosciences in this particular case), is superbly presented to the reader with the greatest lucidity: in clear language assisted by a cornucopia of excellent illustrations. The contents lead the reader from informational macromolecules and information processing to molecular evolution, biomolecules (and their manipulation), biomembranes, pump systems, ligand-gated ion channels, and voltage-gated channels to the resting and action potential (where the electrophysiologist feels closer to home). The journey continues via neurosecretion, neurotransmitters, neuromodulators to the subsynaptic cell, epigenetics of the brain and memory.

In the final chapter, Smith discusses the pathology of certain CNS dysfunctions and diseases. Such a turn of a basic scientist to clinical problems is usually an invitation for disaster. These dangers are admirably avoided by Smith; as a matter of fact, these final 30 pages of the text make stimulating reading.

The bibliography is presented at the end: chapter by chapter, somewhat scanty and yet satisfactory when one considers the goal of this work.

This updating of the first edition (1989) is a brilliant achievement. Its result can hardly be praised enough and should be on the bookshelves of every newcomer to the neurosciences and every clinical neurologist.

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