noted that animal tests of anxiety have not detected anxiolytic activity of antidepressants. The screening of other compounds such as drugs acting at 5-HT receptors is then very difficult. I would have appreciated more of this educational/critical discussion from some of the other authors; otherwise the writing in complete, coherent and authoritative. There is repetition but this adds to our understanding as we see how each researcher takes similar data and points out different relationships relevant to their special field of interest.

The book demonstrates a vibrant and comprehensive research effort. I recommend it.

David G. Johnston
Calgary, Alberta

AMYOTROPHIC LATERAL SCLEROSIS: CONCEPTS IN PATHOGENESIS AND ETIOLOGY. 1990. Edited by Arthur J. Hudson. Published by University of Toronto Press. 370 pages. $75 Cdn.

This book consists of 15 chapters by 40 authors and is a report of a symposium held in Vancouver, British Columbia, as part of the 22nd Annual Meeting of the Canadian Congress of Neurological Sciences. It is edited by Arthur J. Hudson, Professor, Departments of Medicine and Clinical Neurological Sciences, University of Western Ontario, and Director of Research, University Hospital, London, Ontario. He founded the Amyotrophic Lateral Sclerosis Society of Canada in 1976 and has had a major interest in this disease for years.

The chapter by Kim presents evidence that cultured human fetal spinal cord neurons are probably the most promising model for study of the disease. The fact that the addition of skeletal muscle to spinal cord culture enhances long term survival of neurons and promotes axonal growth and increased choline acetyltransferase activity is clearly important and alluded to in several other chapters. The neurite growth enhancing properties of human fetal skeletal muscle protein is exciting and possibly a promising aspect of neuron biology.

The second chapter appropriately deals with the neurotrophic interactions of anterior horn cells and their targets and presents good evidence that spinal cord neurons are sensitive to and influenced by, target derived factors. Dawson, Hancock, and McCabe describe 40 patients with early onset prolonged amyotrophic lateral sclerosis-like symptoms shown to have a partial deficiency of the lysosomal hydrolase N-acetyl-B-D-hexosaminidase.

The difference between classical ALS and this disorder is clear but here is a hint as to abnormal metabolism in neurons which suffer a similar fate to those of ALS.

Another possible model is the retrovirus-induced lower motor neuron disease of mice and the similarities between the cord disease and spongioform encephalopathy are thought provoking.

The immunologic aspects of motor neuron disease are well reviewed and an excellent chapter by the Editor of the book is included on the differences in pathogenesis and etiology of ALS and similar syndromes. Of the two dozen types of ALS or diseases resembling ALS, all are compared to the common benchmark, sporadic, form of the disease. Every clinical neurologist should read this chapter.

Haverkamp and Oppenheim also point out that the integrity of the target organ (skeletal muscle) has a positive effect on the survival of embryonic chick motor neurons. Thus, both Kim and Haverkamp and Oppenheim have suggested that a specific muscle protein promotes neural growth when tested in quail and mouse spinal cord neuron cultures. Here are two significant although separate contributions suggesting that the neuron may be as dependent on the integrity and function of the target organ as the reverse.

The section on epidemiology by Armon and Kurland compares classic and western pacific ALS from several points of view. It also deals with the cycad seed, a major food source for the Chamorros, and held by some to be a toxic agent etiologically significant in pacific ALS. This chapter is interesting and easy to read and the epidemiological similarities of the three apparently primary nerve cell diseases (classic, familial, and western pacific amyotrophic lateral sclerosis) are compared. The pathological variations and locations of the disease process in ALS is well reviewed by Hirano et al. This includes a discussion of the various types of ALS including the animal models plus parkinsonism-dementia complex and Alzheimer's disease. Evidence is presented that an assortment of etiological agents may result in anterior horn cell damage and loss.

The chapter by Steele et al relating to nutritional factors in amyotrophic lateral sclerosis on Guam includes an interesting history of the Mariana Islands and the indigenous Chamorros. The historical background about amyotrophic lateral sclerosis and parkinsonism-dementia complex in these islands is well written. The evidence that the seeds of Cycas circinalis are etiologically important in the ALS/PD of the Micronesian Islands is strong and the following chapter is an even more detailed account of environmental factors in the etiopathogenesis of ALS/parkinsonism-dementia complex of Guam. The affirmative evidence is presented by Spencer, Ross, Kisby, and Roy. The negative aspect of cycad toxicity is presented in three pages by Carleton Gajdusek.

The post-poliomyelitis motor neuron disease controversy is well covered.

In general, this book is an excellent review of the current state of knowledge on amyotrophic lateral sclerosis with some information on parkinsonism-dementia complex and a good deal of information on the concentration of both diseases in the Southwestern Pacific Islands. It is well written, beautifully printed, and easy to read. This is a significant and worthwhile contribution to the current neurological literature and Arthur J. Hudson and his fellow authors are to be congratulated. The book is indexed.

R.T. Ross
Winnipeg, Manitoba

SPINAL DISORDERS IN THE CHILD AND ADOLESCENT: STATE OF THE ART REVIEWS. 1990. Edited by John D. Hsu. Published by Hanley & Befus, Inc. 257 pages. $40.00 Cdn. approx.

This is a multi-authored volume providing a review of the "state of the art" in paediatric spinal problems. The emphasis of the editor and publisher is the incorporation of recent published and presented data within the clinical framework of authoritative

orthopaedic surgeons. Each chapter provides a candid review of the literature.

The quality of the articles presented as chapters is very good. There is a component of redundancy within the chapters.

The first article, entitled "Back Pain in the Paediatric Patient" provides a sound approach highlighting the differential diagnoses. Unfortunately the chapter stands as a separate article, ignoring the content of subsequent chapters relevant to the discussion.

Chapters reviewing spine fractures, sports injuries, and Duchenne Muscular Dystrophy provide concise information not readily accessible in one reference.

The remaining chapters provide well-referenced material and clinical approaches, reflecting the authors' excellent command of literature. A surprising amount of information about operative techniques is included without elucidating the pre-requisites, indications and contraindications relevant to the discussion.

The index is adequate for the topics covered.

The book is a clearly written, readable reference providing an informative clinical review of paediatric spinal disorders. The book will be a welcome resource for the resident, general orthopaedist, paediatric surgeon, and other specialists interested in spinal problems in the child and adolescent.

Gerhard N. Kiefer
Calgary, Alberta

MOVEMENT DISORDERS. A COMPREHENSIVE SURVEY. 1990. By William J. Weiner, Anthony E. Lang. Published by Futura Publishing Company, Inc., New York. 735 pages. $143.00 Cdn. approx.

This review is written in entirety by the two authors, which makes the style in the 13 chapters of the book uniform. They have covered all the disorders conventionally regarded as "Movement Disorders". Nearly one-third of the book deals with Parkinson syndrome which is the major source of disability and has been the most widely studies entity so far. Where a given subject is not covered in depth, there is an extensive list of references which would facilitate further studies.

The style, contents and references make this volume closer to a refereed journal review than to standard neurology textbook. They have discussed the topics in light of the literature evidence and editorialized minimally. Because the knowledge in movement disorders is advancing at a rapid pace, no review can be strictly up to date. The information in this volume is valid up to mid 1987. The authors are well known and well connected with other movement disorders experts. That has permitted them to incorporate information which is not yet in the press. Hence the "personal communication" reference is used frequently. Each of them is a member of DATATOP Study (which will have major impact on movement disorders in the future) and they have provided a glimpse of that. In the appendix, they have noted several movement disorder rating scales. That provides a valuable guide to clinical investigators and will be helpful to better understand the movement disorder literature. There are 61 tables, some quite long and comprehensive. These tables are a useful source of review at a glance.

This is a highly useful review for neurology trainees. If not the entire book, I strongly recommend that all neurology residents read the first chapter to understand some of the fundamental concepts in movement disorders. The book will also be a valuable source of reference for the practising neurologists who may wish to pursue further investigations or treatment in unusual movement disorders from time to time.

The authors are to be complimented for their extensive efforts in producing this volume. By and large, they have succeeded in their stated objective. While I have no criticism, I have a recommendation. In the event they were to update this volume, I suggest that at the end of discussion dealing with a complex issue where the literature evidence is diverse, they should not shy away from making a brief editorial summary based on their own views. That would be of special value to the trainees.

This book is highly recommended for all libraries that serve the neurological residency and movement disorder fellowship programs and every practising neurologist who sees movement disorder cases should have an easy access to it.

A.H. Rajput
Saskatoon, Saskatchewan

NEUROMUSCULAR DISEASE. 1990. (Series: Current Trends in Neurosciences). Edited by Adachi M. and Sher J.H. Published by Igaku Shoin. 348 pages. $128.00 Cdn.

This book enters an arena which has a number of recent competitors. It is not intended to be encyclopaedic, but is instead a concise review of certain aspects of particular interest to the authors. The opening chapter takes the reader through a review of normal ultrastructure. The approach is common sense and conventional and will provide the uninitiated with basic information. The second chapter concerns tissue culture and its application in human diseases. This is an important area as the technique moves from the basic research to clinical studies. Unfortunately, the delay in publication seems to have been excessive, since a summary of advances within the last 4 years are lacking and the bibliography is similarly dated. A section on physiologic, biochemical and ultrastructural changes associated with denervation is unusual in this type of review and provides a different and novel approach. The reader seeking clinical information on the diseases causing denervation will not find it here. This is no great problem since clinical descriptions are readily found in other texts.

The clinical entities begin with a description of polymyositis and inflammatory disorders. In the introduction the editors state that the chapter is written in the context of current concepts of autoimmunity, but little attention is given to recent work. There is no mention of HLA typing or of the possibilities of molecular mimicry, only one sentence on muscle antibodies and a brief statement about lymphocyte types. The chapter does provide a good review of the older work and a clinical description of the disease.

This section on muscular dystrophies is short and, again, the publication delay is evident. A sentence about dystrophin is appended to the end of two or three of the paragraphs in the description of Duchenne dystrophy, but they are not part of the integral description. Two additional chapters have been added to the book describing some of the recent work in genetics and in the discovery of dystrophin to remedy this.

One of the best chapters in the book is by Hans Goebel on congenital myopathies. He gives a thoughtful and comprehensive description of these interesting illnesses. Another chapter which