Book reviews

This is a very good volume and is one of the most important additions to the proliferating literature on muscle diseases. It has none of the disadvantages that has so often marred the publication of proceedings of international congresses. It is especially commendable that it has appeared soon after the meeting, which was held in Milan in May 1969. The communications are concise, well written (in English even though this was not the native language of some contributors), and brimming with sound and enthusiastic investigative activity. Just under 120 papers from close on 240 authors are contained in the volume. Many of the acknowledged leaders in the multifarious aspects of muscle research from many parts of the world are represented. The majority describe new and outstanding research work and there are also a few distinguished authoritative reviews of particular subjects. Perhaps the most remarkable feature is the uniformly high standard of the illustrations, which must reflect the quality and care of the writers, and one suspects the overriding skill of the editors. It is refreshing to be able to pore over the lavish number of ultramicroscopic photographs and easily identify what is tagged below in the figure legends.

The opening chapter is by Professor Walton who in an excellent way analyses the cardinal signs and symptoms of muscle disease and describes their value in differential diagnosis. This is a realistic beginning, for so often the importance of precision in bedside diagnosis, as far as that is possible, is overlooked and then even the most basic work on diseased muscle may lose some of its validity. The second chapter is a very lucid and comprehensive account of current knowledge on myasthenia gravis by Professor Simpson. There follow sections on histology and histochemistry, electron microscopy, electrophysiology, biochemistry, pathology, genetics, endocrinology, and clinical studies. The volume ends with contributions to a round table discussion on correlations between morphological, metabolic, and functional aspects of developing muscle.

Reading through the individual papers is an exhilarating and humbling experience. Some very good work indeed is being carried out all over the world by careful and dedicated people who have also the facility and willingness to communicate their ideas to others. It would be invidious and unjust to single out scientific papers for special comment, but purely from personal interests we found many of the papers on biochemical changes in diseased muscle, on carrier detection, and on steroid myopathy very valuable and provocative. This elegantly produced, expensive (but good value for money) book should be studied with care by all who are engaged in muscle research. The editors deserve our gratitude for bringing an international congress with so many of the world’s brains, so quickly onto the laboratory benches of those who could not attend.

L. J. Hurwitz

This large and beautifully illustrated volume describes in detail the autonomic nervous system in an ascending scale of animals, including Amphioxus lanceolatus, which is one of the most primitive chordates, fish, amphibia, the cat, monkey, and man. The approach is primarily morphological, and the book deals with gross examination including many painstaking dissections by the author, with light microscopy and with electronmicroscopy. The text is clear, the illustrations ample and well placed in respect to the text, and the general standard of production is excellent. The last 100 pages are entitled 'clinical and surgical aspects', and mainly describe techniques for interrupting sympathetic pathways surgically or by injection.

This book is a valuable anatomical contribution and will be particularly helpful to comparative anatomists of the autonomic nervous system. Those whose principal interest is in man will welcome such an elegant presentation, though they may find only a limited amount that has not been readily available before. They will regret that the author considers that so many gaps exist in the accurate knowledge of the autonomic content of the cranial nerves in man that no information is given beyond a promise of better things in future editions (chapter 19). Surely even the most cautious academic judgement must admit that some things are known on this subject with sufficient certainty to justify telling the reader. It may be churlish to criticize a book for what it is not, but in these days a book entitled The Autonomic Nervous System may be expected to include much more than anatomy. Advances in physiology and pharmacology in this field in recent decades have been tremendous, and the clinical aspect with which this book claims to deal can not be understood without some reference to them. The index informs us that acetylcholine is mentioned on only one page (page 24). It is here in company with sympathin and sympathin (I. We are promised a discussion on present-day concepts of autonomic nerve transmission in chapter 5, but that chapter is entitled 'Histology and Fine Structure of Autonomic Neurons' and abides nobly by this title. Epinephrine (adrenaline) is, according to the index, mentioned on only one page (page 370), and nor-epinephrine (noradrenaline) not at all. Atropine is apparently not referred to, so it does not come as a surprise that there is no mention of the innumerable drugs which act on the sympathetic nervous system. Similar omissions afflict the clinical section of the book. There are a large number of clinical situations in which disturbances of the autonomic nervous system are important, and a description of these would have been valuable. The only one to receive special mention, however, is the hyperactive
carotid sinus reflex, a syndrome which badly needs re-evaluating with modern techniques. In short, if the reader wants a comparative morphology of the autonomic nervous system this is the book for him, but if he is a clinician without that special interest it is not.

J. M. K. SPALDING

MICROSURGERY APPLIED TO NEUROSURGERY

Microsurgical techniques in neurosurgery have been advocated for several years now and recently dealt with in some detail by Professor Krayenbuhl in his Hugh Cairns Memorial Lecture. I would think that most neurosurgeons in this country still believe that this is just a rather elaborate method of magnification and that if your eyes are good or you buy a pair of magnifying spectacles this is all you need.

This was probably my view until I read this book and came to realize that microsurgery is a totally different technique applied to neurosurgical problems. The book is a compendium of all that the neurosurgeon using these techniques needs to know. The microscopes and instruments and their use are described in detail. Techniques of suturing small vessels are excellently described and a planned programme of training on small animals is provided. The anatomy and physiology of the cerebral vasculature is described in detail and almost every conceivable operation to which this technique could be applied is described and lavishly illustrated from case material. The standard of printing and illustration are such as we have come to expect from this publishing house and could not be bettered.

I consider myself reasonably unimpressionable but this book has completely convinced me of the value, indeed the absolute necessity, of adopting these techniques in the future. It may be unlikely that the older neurosurgeons will wish to undergo the rigorous training and continuing experience that are necessary to master this type of surgery and to keep in training, but they should insist their juniors do so. Every neurosurgeon must read this book, it will open for them a window on a new world in operative neurosurgery and show them prospects of treatment, particularly in vascular disorders, hitherto considered impossible.

BRODIE HUGHES


The step from recognition of a new physiological phenomenon to its measurement and utilization in clinical practice is a large one. The ability to record cerebral evoked potentials depends on the use of averaging techniques which permit recognition of time-related phenomena in the electroencephalogram by taking advantage of the randomness of the spontaneous EEG activity with respect to an external event such as an applied stimulus. Pioneered at Queen Square by George Dawson, the technique became less esoteric with the introduction of small digital computers. The anticipated flood of papers studying the variation of evoked responses in cerebral diseases has not appeared. A major difficulty is that there is not one evoked wave but many. These vary sufficiently from one individual to another in temporal amplitude and distribution parameters to such an extent that there is no agreed nomenclature. This makes it extremely difficult to identify abnormalities, though changes in time in one subject are relatively easy.

Possibly more interesting than the primary response in receiving areas of cortex are the secondary responses. These are of wider distribution and correlated with activity of nonspecific afferent systems. Slow potential shifts, such as the negative variation discovered by Grey Walter, are certainly connected with psychological set and expectancy of particular events. Legitimate correlations between EEG activity and psychical responses seem at last to be possible. Evoked potentials and contingent negative variation are certainly valid techniques for the investigation of deafness and perception in non-communicating subjects, including children. Differences between hemispheres are also promising in the study of migraine and hemianopia.

This book is the proceedings of a conference sponsored by NASA and the American Institute for Biological Sciences in San Francisco in 1968. It is an excellent production, appearing with commendable speed and few errors. The seven chapters and six supplements provide an admirable introduction to the subject and the unusually lucid discussions highlight the areas of controversy. The price indicated is correct. It is a wonderful bargain.

J. A. SIMPSON

PERMEABILITY AND FUNCTION OF BIOLOGICAL MEMBRANES

This is a fair enough conference publication, as conference publications go—though I doubt if it is really worth the excellent hardback binding which North-Holland has lavished on it. However, it is not directed at the central interests of most readers of the present journal. In a book of this title you might, for instance, expect to find discussion of synaptic mechanisms, but in fact they are not so much as mentioned. Nor are the chemical senses, or any of the other receptors whose membranes look like being the loci of signal-initiation. The action potential in unmyelinated axons is the theme of about a fifth of the book, but is the only neuro-physiological process that is discussed. And even in this discussion a lot of space is given to oblique attacks—studies of 'excitable' model systems, or of the thermal and optical correlates of the natural AP—which may yet give rise to much useful understanding, but can hardly be said to have done so yet.

Those who want to know something about modern work in what might be called 'mainstream' membrane biophysics (by which I mean investigations on the ionic currents through membranes that are living) will do best