Book reviews


The construction of models as a method of tackling physiological problems has a long and honourable history. Although a model is discredited when it proves inadequate to 'explain' biological phenomena, the use of argument by analogy obviously fulfils something fundamental in human thought. The model need not be a material one, indeed it is more flexible if it can be handled with mathematical symbolism rather than with string and sealing wax. Surely this was the real meaning of Kelvin's famous aphorism about measurement. The mathematical and technological capabilities of each generation affect the models which are fashionable. The post-war years have seen the development of techniques for the control of electronic machines including extremely complex computers and many engineers are now trained to think 'cybernetically' and to use systems analyses. The applicability of 'feed-back control' to many physiological homeostatic mechanisms is so obvious that many scientists without biological training have become 'bioengineers'. This book is an attempt to provide a source book for them and for the many biomedical researchers who have taken the trouble to learn the necessary mathematics but it rightly insists that systems physiology transcends control systems physiology, with emphasis on adaptive and purposive activity.

At an early stage the authors face the question whether the models are elaborate exercises in curve fitting or genuinely throw light on intrinsic mechanisms. There is a laudable attempt to assess the usefulness and strength of the tools and concepts provided.

For the bioengineers this book is a most useful introduction. Many medical research workers would find the applicable chapters valuable and stimulating. About 60% of the book is on neurophysiological subjects and the remainder on vascular, respiratory, hormonal, and temperature control systems. The late Dr Talbot was associate professor of medicine (biomedical engineering) at the Johns Hopkins University, Baltimore, and Mr Gessner, now in Switzerland, was an associate professor in the same school.

This is a valuable book but it requires a real effort by the reader. The mathematics was beyond this reviewer.

J. A. SIMPSON


Neurochemical research on electroshock has largely reflected the overall history of neurochemistry. As different classes of substances have in turn received general attention the effects of ECT on them and on their metabolism in brain have been studied. This work has not yet led to a clear understanding of the mechanism of ECT action in depression. Perhaps this is too much to expect in the present fragmentary state of knowledge of biochemical mechanisms in depressive illness. Also, extrapolation to the depressed human subject from biochemical studies in normal laboratory animals is difficult.

Dr. Essman reviews work on cerebrovascular permeability, CSF chemistry, brain respiration and electrolytes, RNA and protein changes. About half the book deals with relationships between ECS and neurotransmitters, a topic to which the author has contributed extensively. Presentation is clear and there is a good bibliography. The book will be useful and stimulating, especially to those interested in animal studies in this field.

G. CURZON


I doubt if this latest transatlantic text on paediatric neurology, intended as a handy abridged manual, will fit comfortably into the pocket. Nevertheless, it will undoubtedly appeal to practising paediatricians up to one-third of whose work is concerned with neurodevelopmental disorders. But it is not without other major drawbacks, none of which is insuperable when another edition is planned.

I find the uncritical dogmatism irritating, and the absence of key references compounds this doctrinaire approach. The text is freely illustrated with line drawings and photographs, and there are numerous tables. The disadvantage of the latter is that inevitably there is gross oversimplification of complex problems and perspective is lacking. Many illustrations are quite unnecessary—for example, there is little point in showing a sequence of six half-page pictures of a girl closing and opening her eyes to show a petit mal attack, and most of the illustrated accounts of clinical examination are tedious repeti-
tions from any standard neurological text, with pictures of children instead of adults.

I am particularly worried about certain therapeutic aspects. For example, it is disappointing to see against a small line diagram of a lateral view of the brain occupying a whole page under the heading ‘learning disorders’, the listing of Ritalin, Mellaril, and amphetamine, apparently with approval. In the treatment of infantile spasms, prednisone, ACTH, and pyridoxine are casually noted as agents of second choice, to be tried only when all else fails.

Migraine (present in 5–10% of children of school age) is dismissed in 18 lines and neither the periodic syndrome nor migraine accompagnée are mentioned.

Collaboration between respective contributors has not been wholly successful: one wonders if the author of the chapter on degenerative diseases shared his thoughts with whoever wrote the section on peripheral neuropathy, as their inevitable overlap tends to be unnecessarily repetitive, and not wholly consistent. The index is very inadequate.

JOHN WILSON


The aim of this book is to provide a precise account of neuro-ophthalmology for ophthalmologists, neurologists, neurosurgeons, physicians, and others in related fields, a task which presents an enormous challenge. Unfortunately, this book fails to take up this challenge, and instead provides inadequate coverage for both the ophthalmologist and the neurologist.

Almost half the book is devoted to techniques of examination and investigation of the patient. There is an extensive review of radiological techniques without, however, reference to hypocycloidal polytomography, and, though numerous EEG tracings are included, the pattern evoked visual response has been omitted. The fundus pictures are of excellent quality, poorly organized and selected, and suffering some important errors of mislabelling, such as confusing an arterial and venous occlusion and misrepresenting atrophic papillodema.

The clinical sections are disappointing and fail to contribute to many of the problems of neuro-ophthalmology. The chapters on the pupil (seven pages) and the orbit (six pages) fail to provide the basic information for accurate examination or diagnosis. The oculomotor system is included at a superficial level, and the definitions of internuclear ophthalmoplegia and Parinaud’s syndrome neither make those entities clear nor conform to current concepts. It is sad to find entities like opoclonus, ocular bobbing, ocular myoclonus, periodic alternating nystagmus, and superior oblique myokymia not even recognized in this chapter, for these are in the vanguard of modern neuro-ophthalmology. The remaining chapters on visual loss due to retinal, optic nerve, chiasmal, and retrochiasmal disease give a brief summary of the causative factors.

This book is beautifully produced and illustrated, though many of the line diagrams are naive and often inaccurate. The contents and bibliography would seem insufficient for postgraduate use but this book may serve as an introductory primer for those contemplating a career in either neurology or ophthalmology. The price of £11 may, however, serve to keep this book off the shelves of those for whom it was intended.

M. D. SANDERS


This fifth migraine symposium maintains the wide interests of its predecessors. Clinical and laboratory work are both represented. Two main themes are vascular pathophysiology and biochemical causative factors. Changes in carbohydrate metabolism are still attracting study. It is interesting to see, as in the paper by Hockaday and colleagues, that concern about blood sugar levels per se is giving place to an interest in the wider aspects of related fat metabolism and the hormonal background. The linkage between hormonal changes and migraine derives from rather sporadic clinical observation over a long period. The subject is well reviewed and brought up to date by Raymond Greene in his Sandoz lecture. The influence of biochemical and pharmacological research on treatment is also discussed, though it must be admitted that the primary observations here are sometimes conflicting.

On the clinical side the potential of the City Migraine Clinic for advancing knowledge is well shown in a paper by Wilkinson and colleagues. Over 3,500 new patients seen in 2 ½ years, and the large number of acute headaches, gives an idea of the scope of this development. Blackmore’s interesting observation of a fixed duration for fortification spectra will not surprise those dealing with migraine, but its implications for the mechanism of the attack need exploring.

The field of migraine studies still suggests much knowledge of the pathophysiology of the attack but substantial ignorance of the causes of migraine. This is also a not unfair comment on the present volume.

C. W. M. WHITTY