THE DIAGNOSIS AND TREATMENT OF DISEASES AFFECTING THE NERVOUS SYSTEM (Two volumes). By Frederick Lees. (Pp. xxix + 982; illustrated; £8 per volume.) Staples Press: London. 1970.

One can only admire the industry of an author who tackles a two volume textbook of neurology intended for non-specialists. Unfortunately, this work is unlikely to reach the intended readers owing to its length and price, and it is doubtful if the determined reader would finish his long task with a real appreciation of the neurologist's approach to diagnosis. One can read the four pages devoted to nystagmus and still be ignorant of the general principles, and the concept of the difference between paralysis of movement and paralysis of a muscle is sought in vain. The description of clasp-knife rigidity (*sic*) is unorthodox. The postgraduate student requires sound instruction on fundamentals rather than a sketchy outline of many extremely rare diseases.

J. A. SIMPSON

FIRST AND LAST EXPERIMENTS IN MUSCLE MECHANICS By A. V. Hill. (Pp. xv + 141; illustrated; £2.75.) Cambridge University Press: Cambridge. 1970.

Regrettably this is an account of the last experiments by the grand old man of muscle mechanics introduced by the author's classical paper with H. S. Glasser (1924). It concerns studies on the active state of muscle, the force-velocity and tension-extension relations, and the series-elastic component.

The early paper (in which the convention of the rest of the book for numbering figures is not followed) is modified by omission of Hill's discarded elastic viscous model of muscle. Throughout the rest of the book the scientific matter is illuminated by a commentary on his earlier and revised views and the reason for making certain experiments. It is fascinating reading and contains suggestions for further experiments that he would have liked to make, but it is difficult to follow without considerable knowledge of the subject. This is not an introduction to the subject for the general reader but essential reading for the specialist.

J. A. SIMPSON

THE PHARMACOLOGY OF SYNAPSES By J. W. Phillis. (Vol. 43, Zoology Division *International Series of Monographs in Pure and Applied Biology*). (Pp. xi + 358; illustrated; £6.) Pergamon Press: Oxford. 1970.

For many years we have had to depend on the neuromuscular junction and sympathetic ganglia for knowledge about the pharmacology of cholinergic and adrenergic synapses. Extrapolation to central synapses could only be tentative. It has been frustrating to have the clear electrophysiological evidence of inhibition without the possibility of isolating an inhibitory transmitter. In the last decade the position has been transformed by the development of fluorescent histochemical techniques for the detection of monoamines and their antagonists. These have already revolutionized the treatment of mental disorders and the rapid insight into their actions points the way to even more valuable therapeutic advances. The prostaglandins already find a place in this book.

This is not a book for reading but rather a reference monograph. There will certainly be demands to keep it up to date.

J. A. SIMPSON

SYNAPTIC TRANSMISSION By Hugh McLennan. 2nd edition. (Pp. vii + 178; 154 figures, £7.45.) W. B. Saunders: Philadelphia. 1970.

The first edition of this book was well received and the second is sure of a further welcome. It gives more detail on electron microscopy than the other recent books on the synapse reviewed here, and there is a welcome reassessment of the non-cholinergic synapses of the mammalian central nervous system. Invertebrate synapses are not neglected and the general account of pharmacology and electrophysiology of synapses is very good. This is not a laboratory monograph like the recent one published for the Physiological Society but, as a concise account of synaptology for students, it is the best on the market.

J. A. SIMPSON

ELECTROPHYSIOLOGICAL ANALYSIS OF SYNAPTIC TRANSMISSION By J. I. Hubbard, R. Llinás, and D. M. J. Quastel. (Pp. 372; illus.; £5.25.) Edward Arnold: London. 1969.

In this monograph of the Physiological Society three experts in the field have provided a systematic basis for the investigation of synaptic transmission. Their insight into general principles has made it possible to discuss methods and conclusions of general applicability while drawing examples from many types of synapses.

They do not go deeply into other aspects of the synapse, such as ultrastructure and pharmacology, for which other books are available, but within its field this book is supreme. The first three chapters summarize the structure and function of synapses, the electrical properties of nerve and muscle (mathematical treatment), and the measurement of cell electrical properties. Further chapters are on the investigation of presynaptic function, analysis of subsynaptic events, central synaptic transmission, and extracellular field potentials in the central nervous system. There is also a useful appendix on methods and a valuable bibliography. This is an outstanding book destined for constant reference.

J. A. SIMPSON

RECENT ADVANCES IN THE STUDY OF CEREBRAL CIRCULATION Edited by J. M. Taveras, H. Fischgold, and D. Dilenge. (Pp. xiii + 199; illustrated; \$18.00.) Thomas: Illinois. 1970.

This slender volume reports a round table discussion from Symposium Neuroradiologicum in Paris in 1969. Most of the authors are, naturally, radiologists and this gives the volume a slightly odd perspective—that of comparing the value of various ways of measuring cerebral circulation with the information to be derived from angiography. The first two chapters very fairly outline the limitations of angiography. But in a book pitched at this level we might have been spared many of the radiographs, because it is arguments rather than

pictures which convince. An interesting chapter summarizes the conclusions from experiments with electrical models of the circle of Willis, showing the anticipated redistribution of flow when obstruction is imposed at various sites on the afferent side and when peripheral resistance is likewise varied. There follow a number of chapters reporting work already published on the effect of controlled ventilation on angiography, the effect of angiography on blood flow, and the comparison of angiographically estimated circulation time with blood flow methods, and a heat clearance method. Under 'New Techniques' very specialized methods are described and considered in considerable detail, most of them even today confined to their inventors or their own departments.

There is much of interest in this book, if only in the ingenuity of the gadgetry, and references are fairly generous. Although there are 38 authors from various countries the number of centres represented is much fewer, because a few laboratories each had several representatives at the discussion. None of the editors is a native English speaker and it is hardly surprising that the prose is sometimes a little tortuous and occasionally mystifying.

BRYAN JENNETT

AMPHETAMINES AND RELATED COMPOUNDS An International Symposium. Edited by E. Costa and S. Garattini. (Pp. xiii + 962; illustrated; \$32.00.) North-Holland Publishing Company: Amsterdam. 1970.

The medical profession is intimately associated with the problem of amphetamine abuse, both as the body expected to produce a solution and, less happily, as being at least partly responsible for the present magnitude of the problem. A solution will come only with more information and a better understanding of the sociological and pharmacological basis of the phenomenon of drug dependence. There is, therefore, a need for an authoritative, concise description of the action of the amphetamine group of drugs, the extent to which their various central and peripheral effects can be separated in newly-synthesized drugs, and the dangers of dependence on these new variants. This is not that book. Not that it lacks authority; on the contrary, it suffers from an excess of them. In 58 chapters, 122 contributors, and 960 pages, almost all is said that could be said about amphetamines.

The book is the collected separate papers given at an international symposium held at the Mario Negri Institute, Milan, in 1969. There is little evidence of editing in the interests of uniformity of treatment or balance or elimination of repetition. Though papers are grouped into sections, there is still considerable repetition—for example, structure-activity relationships stray far beyond their opening section, and the interaction with biogenic amines is a recurring theme in every section. To some extent, repetition is both unavoidable and desirable, but in this instance it has resulted in a volume which, regarded as a book, is quite indigestible.

Having made these criticisms, it should in fairness be said that this collection of papers represents an invaluable reference source, essential for anyone working in this field. Many of the individual articles are excellent,

bringing together observations at present scattered in the literature, and combining these with unpublished work. In summary, this is a book for aficionados and libraries, but hardly one which could be recommended for the average medical practitioner in any branch of medicine.

J. S. GILLESPIE

A PHYSIOLOGICAL APPROACH TO CLINICAL NEUROLOGY

By James W. Lance. (Pp. xi + 246; illustrated; £4.20.)

Butterworths: London. 1970.

This small volume has some admirable qualities. It is in the classical tradition of neurology by relating clinical signs to disturbances of normal physiology. This is very successful in the chapters on motor control, which are very well done, incorporating the author's own valuable contributions. The quandary of order of presentation is not solved. To present the physiology in logical order it is necessary to distribute the material on Parkinsonism over three chapters.

Sensory functions are less well covered and the role of the cortex surely requires more space than it is allocated. The physiological approach to neuromuscular transmission and muscle disease is quite inadequate. Many illustrations are of poor quality. These criticisms must be made of a book with this title and cost, but it does have some outstandingly good parts which make it worth buying.

J. A. SIMPSON

BRAIN MECHANISMS AND BEHAVIOUR By J. R. Smythies.

(Pp. vi + 186; illustrated; £2.) Blackwell: Oxford.

1970.

This book is mainly about the limbic 'system' of the brain, and summarizes its anatomy, its electrical activity, and the effects of ablation and stimulation. Dr. Smythies has been thorough and critical in reading the literature of the last decade on these subjects, and has set out his knowledge in an orderly way. I found his book easy to read, accurate where I already knew the subject-matter, and interesting where I did not.

G. S. BRINDLEY

BREATHING: HERING-BREUER CENTENARY SYMPOSIUM A

Ciba Foundation Symposium. Edited by Ruth Porter.

(Pp. 402; £4.) Churchill: London. 1970.

In 1868 Hering and Breuer showed in their paper 'Self-steering of respiration through the vagus nerve' that mechanical changes in the lung can initiate nerve impulses which reflexly modify the pattern of breathing. The centenary of this event provided an appropriate occasion for this symposium reviewing present knowledge of this aspect of respiratory control. Participation in the symposium of both physiologists and clinicians was also appropriate, since Hering was essentially a physiologist, Breuer essentially a physician. Its inter-disciplinary nature is reflected in the main topics, which include the afferent pathways from the lungs and their reflex effects, the origin of the rhythmic respiratory drive, the role of various afferent pathways in respiratory sensation, and the application of these findings to patients with breathlessness.

Vagal block experiments show the classical Hering-