disorders, new techniques have been evolved, as in cerebral blood flow studies, or where biopsy and neurophysiology are easy, as in peripheral neuropathy and diseases of muscle. Are the main advances of the future to come from the laboratory? Is it really true that the last thing to be, if you aspire to a Nobel Prize in Medicine, is a practising doctor? It may be so, but there is plenty of good clinical observation here too. The author of page 389 who writes caustically that 'from France, the homeland of Chauvin, have come reports' of a well-known syndrome described eponymously in favour of a French writer, must be rather thoughtful after reading the whole book which concentrates on American contributions even if not the seminal ones. But this is a family celebration of a silver anniversary and they have reason to be proud of it. This is not a textbook of neurology but the publisher's blurb that it is a lure intended to bring new talent into this most exciting and challenging branch of the science should be handsomely fulfilled.

J. A. SIMPSON


The third volume of the series commemorating the 25th anniversary of the National Institute of Neurological and Communicative Disorders and Stroke of the USA is at once the most difficult to review and the most promising for the future. It contains chapters on the mechanisms of hearing which will stretch neurologists and otologists alike but which are essential for the full understanding of the later sections on the central processes of language and on speech. Though the latter still suffers from lack of objectivity, it is quite certain that the necessary knowledge of brain mechanisms essential for language and speech functions is evolving and the interest of neurology is at last turning to the unique functions of the brain as the organ of mind. If research is the art of the possible (well exemplified by the advance in peripheral neurology), the next 25 years is bound to show major advances in our understanding and perhaps treatment of disorders of communication, the core problem of neurology and psychiatry. This book should encourage young men to enter the lists.

J. A. SIMPSON


The aim of this book is to provide a basic knowledge of the principles, techniques, and interpretation of this new diagnostic method in a small and easily readable volume. It is indeed quite short and with less prodigal use of paper even fewer pages would have been required. It is mainly an atlas of normal and abnormal appearances presented in the horizontal format characteristic of the method but supported by many well-labelled anatomical sections to help those readers unfamiliar with this view of the brain. The authors' claim that the work is based on a combined experience of over 20 000 scans, makes one wonder why, with this extensive material, some of the many empty spaces were not occupied by further examples, or by tables indicating the relative effectiveness of the method in detecting and identifying the various types of lesion. Although a rather costly book for its size it is recommended to those seeking a knowledge of the fundamentals of computed tomography.

J. L. STEVEN


The seventh edition of this standard textbook is essentially a rearrangement and consolidation of the previous edition to suit teaching programmes but it contains new material on neurotransmitters with a complete revision of the chapter on the autonomic nervous system. The nomenclature adopted by the International Anatomical Nomenclature Committee has been used. A feature of this book has always been the emphasis on 'functional considerations' with special reference to clinical problems. The excellent atlas of brain and brain stem at the end of the book is now available in slide or filmstrip format.

J. A. SIMPSON


This atlas is based on the course in neuroanatomy taught in the Albany Medical College. It stems from an appreciation of the importance of myelin-stained sections, cut in sagittal and transverse planes, in the proper understanding of the neuroanatomical configuration of the central nervous system.

The first part consists of six representative levels of the spinal cord, and 32 levels of the brain stem cut transversely in the medulla and lower pons with a gradual shift to frontal sections beginning in the rostral pons and progressing into the thalamus and cerebral hemispheres. The second part of the atlas consists of a mid sagittal and a selected parasagittal sections. Structures are identified by code numbers based upon the sagittal sections with many cross references to the transverse sections, thereby facilitating the three dimensional relationships of fibre tracts and nuclei. For the most part the nomenclature of the Paris revision of the Basle Nomina Anatomica has been used. Each figure is accompanied by notes which develop the important concept of structure and function with reference to the neuroanatomical basis of the more common neurological disorders. In addition to an alphabetical index, anatomical structures are also indexed in the numerical order of their code numbers.

Unfortunately this book fails to achieve excellence in its primary function as an atlas of the central nervous system for at least 12 of the transverse and two of the sagittal figures are either not in focus or are of poor quality. Some of the figures are also marred by substandard artwork. Furthermore, as a clinical neuro-pathologist used to screening large cellular sections of the cerebral and
Book reviews

cerebellar hemispheres and of the brain stem, I remain unconvinced that a full appreciation of neuroanatomy can be obtained from examining only myelin-stained sections. Sections stained separately for myelin and by cresyl violet, or by a method combining them, are generally the most informative. It is, therefore, difficult to recommend this book, but it may be of some interest to students of neuroanatomy, neurologists, and neurosurgeons.

D. I. GRAHAM

Normal and Abnormal Development of the Human Nervous System By R. J. Lemire, J. D. Loeser, R. W. Lееch, and E. C. Alvord. (Pp. 421; illustrated; $27.50.) Harper and Row: Maryland, USA. 1975. 'Fills a long-felt gap' is a cliché of reviewers but the phrase is irresistible for this book. In a clear and systematic way it gathers together a vast amount of information about the development and growth of the human nervous system and gives a brief account of the major developmental anomalies. Standardised graphs present the information in a manner suitable for rapid reference so that the clinician can assess the probable time of fetal life at which abnormalities occur. With so much detail compressed into a reasonable space and so much controversial material— even in well studied syndromes such as the Arnold-Chiari— it is not surprising that there are some errors and omissions or that some interpretations do not appeal to the reader. The wonder is that it has been done so well.

J. A. SIMPSON

Membrane Morphology of the Vertebrate Nervous System A Study in Freeze-Etch Technique By C. Sandri, J. M. van Buren, and K. Akert. (Pp. 384+ix; illustrated; $71.50, Dfl. 175.) Elsevier: Amsterdarm, Oxford, New York. 1977. This is essentially an atlas of freeze-etch preparations of the vertebrate central and peripheral nervous systems. It is beautifully produced and gathers into a single informative volume material so far available only in papers and widely scattered in scientific journals. As such, it will appeal to all who use the freeze-etch method in their work.

Freeze-etching means the examination of tissues by rapid cooling, sectioning—that is, fracturing on a microtome under vacuum and allowing the ice in and around the tissue to sublime for a short period. This has the effect of etching the specimen, exposing curved membrane surfaces of which a metal/carbon replica can be made for later examination in the electron microscope. The technique, available since the early 60s, initially excited interest on two counts. Firstly, the artefact of chemical fixation appeared to be avoided in tissue preserved by purely physical means. But it was soon found that in order to achieve the smallest possible size of ice crystals and maximum resolution, tissues had to be immersed in a cryoprotectant such as glycerol. This distorted the fine structure of many tissues, unless they were first stabilised in an aldehyde fixative. Thus chemical fixation had to be retained, although dehydration was still avoided. Secondly, the views provided of cells and organelles had a new, three-dimensional quality provided by no other technique. Fractures passed through membranes, revealing their interior, providing new insight into the structure of cells and organelles.

Despite early enthusiasm, use of the freeze-etch method has not become widespread. The main deterrent to its use appears to be the difficulty of interpretation of the micrographs. Study of the atlas will undoubtedly help, and it is to be hoped that it will thereby encourage greater use of the method. It is a little disappointing to note that the explanatory figures that accompany the illustrations are all in the form of diagrams: the inclusion of conventional thin sections for comparative purposes would have been more helpful and convincing. Perhaps these could be added to the next edition.

D. G. F. HARRIMAN

Clinical Examinations in Neurology Fourth Edition Mayo Clinic and Mayo Foundation. (Pp. 385; illustrated; $10.00.) W. B. Saunders Co.: Philadelphia, London, Toronto. 1976. There are a number of elementary texts, intended for students, on the examination of the nervous system. This one is rather more sophisticated and very suitable for house officers. Indeed, it is the best short book available with a good balance between history taking, physical examination, and special tests. The latter now include CAT scanning (here termed CTT) and a discussion of the neurovascular examination.

The methods recommended are conventional and tried by time. As usual, the impossibility of charting the normal temporal field of vision with an object less than 90° from the visual axis is not mentioned. A preferable method of field plotting by confrontation is mentioned in passing.

The book was prepared by 26 members of the Department of Neurology and the Department of Physiology and Biophysics of the Mayo Clinic and Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota. It is so well edited as to appear to come from a single pen. It is highly recommended and not expensive.

J. A. SIMPSON


From a study of the papers in this book it will be clear how much those of us who are concerned with the treatment of epilepsy are indebted to the pharmacologists who are devoting so much of their time to drugs which in the past have been long neglected. However, although we now have reliable methods of measuring their levels in body fluids we have still much to learn about the complexities of their actions and about how to apply the new knowledge gained to clinical problems.

M. PARSONAGE