Book reviews

patients; nonetheless his contention that symptoms of *non-focal* cerebral ischaemia predict stroke and vascular death almost as accurately as *focal* ischaemic episodes warrants further investigation. If proven, many more patients with non-specific "dizzy turns" may require a more thorough cerebrovascular workup.

Dr Wilner begins his chapter on posterior fossa angiography by saying "The development of four-vessel angiography has significantly altered the prognosis and therapy of the vertebrobasilar system". The subsequent text, a series of eight selected case reports (with admittedly excellent pictures) fails to support his rather contentious statement. He may, however, be correct in stating that vertebral angiography, at least in the USA, has altered therapy, though whether it has been changed for the *better* remains as yet unproven.

The section on treatment is a little disappointing. There are *eleven* chapters on various aspects of surgical, but not one on medical, management though the latter is mentioned specifically in the book's title. Anticoagulants are frequently stated as the optimum medical therapy, but there is no critical review of clinical trials of anticoagulants to be found anywhere. Haemodynamic mechanisms are mentioned often as a cause for vertebrobasilar ischaemia, and the book is peppered with suggestions to "keep the patient horizontal" and "optimise cardiovascular status" (whatever that means); again with little in the way of convincing evidence in support.

Several of the surgical chapters are equally uncritical, and describe in glowing terms the remarkably high cure rates achieved by the authors' particular surgical method, without ever providing a definition of the disease being operated on, the time or method of outcome measurement, or a comparison with the results in a control group. However, the chapters by Kieffer *et al*, and Ausman *et al* are very good, and provide a critical assessment of the problems of study design, including the definition of vertebrobasilar disease, the need for careful outcome measurement, and above all, the need for randomised controlled trials of new surgical methods in this area.

In conclusion, this book may be of interest to the cerebrovascular specialist. It is expensive and would, therefore, be more suitable for browsing through in the library, rather than buying for personal use.

PAG SANDERCOCK

Nuclear Magnetic Resonance Imaging: Basic Principles. By Stuart W Young. (Pp 175; \$24.00.) New York: Raven Press, 1983.

Computed tomography fundamentally displays the patterns of absorption of X-rays by matter, so that despite the fact that it is a fairly complex imaging method, no new basic concepts were necessary for understanding the principles of interpretations of the images. Magnetic resonance is a much more complicated phenomenon in which image patterns of magnetised tissues can be produced by subjecting it to various types of radio frequency pulse sequences. The method has enormous potential for imaging brain and spinal cord and not only for displaying the gross anatomy and some of the internal structure but also for revealing certain aspects of biochemistry and pathophysiology and for measuring blood flow. To achieve anything more than an empirical approach to diagnosis one should seek to understand how the components of the magnetic resonance signal are generated; how each affects imaged contrast and how they are influenced by disease processes. However, one should bear in mind that the evolution of the method has been incredibly rapid and some aspects of the subjects are incompletely understood even by experts.

This book considers in a simple manner the potential of magnetic resonance and discusses the interaction between radiowaves and spinning particles in a strong magnetic field and how spatial encoding is achieved to form images. Analogies with more familiar physical phenomena are presented to facilitate the learning phase. The author also uses analogies from everyday life, some of which are very helpful; others will probably be more useful to American readers. The currently available imaging systems and possibilities of using paramagnetic substances for enhancing the images and the potential hazards of magnetic resonance are also discussed.

The book fulfils its brief as a simple introduction or guide. It commences slowly and simply, explaining every step but even so it soon becomes quite complex enough for the average neuroscientist. It certainly provides the basic background for logical attempts at analysis of magnetic resonance images and gives a good basis on which to build further knowledge. It is recommended to radiologists and other physicians commencing study of the field.

BRIAN KENDALL

Surgical Approaches to the Spine. By Robert G Watkins. (Pp 145; \$150.00.) Berlin: Springer-Verlag, 1983.

This is designed for the specialist spinal surgeon. The principal author is an orthopaedic surgeon at the University of Southern California and his contributors include two professors of neurosurgery. They have provided a thorough guide to the full range of methods of surgical exposure of the vertebral column throughout its length. It should be stressed that this is a manual of surgical exposures alone. With the exception of lumbar discectomy and cervical foraminotomy, the procedures that the surgeon may carry out once the spine has been exposed are not described. Each surgical route is described step by step. Points of difficulty or risk are emphasised and for each section of the spine the relevant aspects of normal anatomy are thoroughly described. References have been deliberately confined to key papers only.

A technical surgical work of this type stands or falls by the quality of its illustrations. The numerous plates in this book, all coloured, can hardly be faulted. Most are photographs of cadaver dissection. Usually this type of illustration is less satisfactory than one might suppose but these beautifully photographed dissections are helpful and instructive. There can be few neurosurgeons who will not find this book useful. Even those with large spinal practices will from time to time require a detailed guide to some unusual approach and its problems. For this purpose this volume can be thoroughly recommended. The price is high but it can be justified in view of the very high quality of production and illustration.

RS MAURICE-WILLIAMS

Polyomaviruses and Human Neurological Disease: Progress in Clinical and Biological Research Vol 105. Edited by John L Sever & David L Madden. (Pp 376; £50.00.) New York: Alan R Liss Inc, 1983.

Since the discovery in 1964 of particles resembling papovaviruses in the brains of PML patients, evidence has been methodically accumulated that members of this subgroup of polyomaviruses (e.g. JC and BK viruses) cause PML in man and glial tumours in primates. SV 40 and polyoma, well characterised viruses with known oncogenic potential, belong to the same

subgroup. The occurrence of antibodies to JC virus in most normal adults suggests that disease occurs only when a normally harmless viral infection is somehow reactivated. This situation has similarities with some herpes virus and retrovirus infections, and viral reactivation is currently a crucial question.

This book is divided into three sections concerning the virology, epidemiology, and neurological diseases associated with JC and BK viruses. Although each section contains much recent and specialised information there are several chapters giving overviews of various areas. Consequently this book avoids being simply a collection of papers, but stands on its own as an excellent account of current thinking on PML. It should be of interest to graduate students and research workers in many fields, including molecular biology, immunology, virology and neurology.

One area of particular interest is the rapid progress being made at the molecular genetic level in identifying possible regulatory sequences in the genome, and the analysis of sequence variation *in vivo* and *in vitro*. Another important area is analysis of the oligodendrocyte lesions which are characteristic of PML by the use of antibodies to defined myelin proteins. In view of the possible connection between viral infections and multiple sclerosis and Guillain-Barre Syndrome, it is especially interesting to study a situation where demyelinating virus really is at work.

WA TAYLOR

Neuromuscular Diseases. Edited by Georges Serratrice, Didier Cros, Claude Desnuelle, Jean-Louis Gastaut, Jean-Francois Pellissier, Jean Pouget, Alain Schiano. (Pp. 630; \$118.00.) New York: Raven Press, 1983.

This book contains contributions from the fifth International Congress on Neuromuscular Diseases held in Marseilles in September, 1982. There are in excess of two hundred authors for the hundred or so brief chapters and, not surprisingly, quality is somewhat uneven. Nevertheless, a high proportion of the world's acknowledged authorities have contributed a chapter, although the peripheral nerve seems to be somewhat under-represented.

The first part is divided into sections dealing with genetic expression in skeletal muscle, prevention of Duchenne dystrophy, fuels in normal and diseased muscle, metabolic congenital myopathies, the

biochemistry of Duchenne dystrophy, mechanisms of muscle cell necrosis/regeneration and a section on membranes in muscle disease. The second part is devoted to the biochemistry and cell membrane functions of peripheral nerves, repair and regeneration and the assessment of sensory function; this part finishes with a, slightly out of place, five chapter section on motor neuron disease. Subsequently, there is a series of chapters on the neuromuscular junction, acetylcholinesterase and myasthenia gravis, and finally a major section on therapy and rehabilitation. In this latter section there are some particularly interesting contributions on the management of scoliosis in neuromuscular disease, the therapeutic trial and the effects of exercise.

This book is relatively up-to-date and the references are extensive. The interested reader can briefly survey current growth areas, especially in the sphere of diseases of muscle and the neuromuscular junction. It is not in any sense a text book of neuromuscular disease, however. The presentation and reproduction of illustrations are of high quality and the index adequate. This is a good book for the specialist library.

CM WILES

Neurology 4: Peripheral Nerve Disorders. Edited by Arthur K Asbury and RW Gilliat. (Pp 339; £25.00.) Sevenoaks: Butterworths, 1984.

Subtitled "A practical approach" this book certainly represents a more manageable size and reasonable price than some larger volumes on the same subject. It opens with an algorithm for diagnosis of peripheral neuropathy which is complex and yet not complex enough to cover all the options, as the rest of the book reveals. Individual chapters by leading authorities provide clear accounts of individual subjects such as diabetic, toxic and genetically determined neuropathies. The opportunity is taken to review the neuropathies associated with paraproteinaemias, a recently recognised group which is beginning to teach us important lessons about myelin and axonal antigens. The most interesting group so far has been those patients with an IgM_k paraprotein and a demyelinating neuropathy. The IgM_k paraprotein of many of these patients represents antibody probably directed against a recently recognised myelin protein, myelin associated glycoprotein, which may be important in axon Schwann cell interactions. Since this book was written Latov and colleagues, who

have been at the forefront of this work, have also demonstrated the specificity of another IgM_k monoclonal for an axonal antigen, chondroitin sulphate C, in axonal neuropathy. The possibility exists that the neuropathies associated with paraproteins represent a family of neuropathies caused by antibodies to several different antigens. These antigens may turn out to be of interest in neurobiology. A Japanese account of a related syndrome of skin hyperpigmentation, oedema, polyneuropathy and plasma cell dyscrasia, added almost as an appendix, represents the most detailed review available of this curious condition. One hopes that the identification of a relevant antigen may elucidate the link between this bizarre collection of symptoms. Accounts of neuropathy encountered in India and Africa deal all too briefly with leprosy, although acknowledging that this represents the commonest form of peripheral neuropathy in both continents. This is because patients with leprosy are treated in special centres and rarely by neurologists. This is another symptom of the general rule whereby conditions which become treatable with the advance of medicine, like meningitis and subacute combined degeneration of the spinal cord, are stolen from the neurologists by internal medicine and other specialists. It is encouraging to see, therefore, that this book gives space to the management of patients with acute generalised paralysis not ignoring nursing, physiotherapy and respiratory care. Every medical library, and many student and practising neurologists will want to have this clearly illustrated volume on their shelves.

RAC HUGHES

CNS Metastases: Neurosurgery in the Aged. (Advances in Neurosurgery Vol. 12). Edited by W Piotrowski, M Brock and M Klinger. (Pp 380; \$30.30.) Heidelberg: Springer-Verlag, 1983.

This volume produced by Springer-Verlag is in essence the proceedings of the 34th Annual Meeting of the German Neuro-Surgical Society held in Mannheim in 1983. There are 56 contributions, some of them 600 words or less; 33 appear to have been invited to speak on a topic, the rest are "free". The subjects range from surgical management of metastatic brain tumours through the symptoms and signs suggestive of an intracranial metastasis to radiotherapy and chemotherapy for the problem. There are also quite a few articles