Book reviews

lar to clinical levels. It represents the proceedings of a Dahlem conference held in 1981. The participants considered four major problems. First, normal and abnormal development of the nervous system; second, mechanisms of axon guidance after injury; third, factors involved in the reformation of specific connections; and fourth, restoration of function. A series of papers is followed by group reports covering the four main topics.

The opening chapter by Cowan provides an excellent account of vertebrate central neurogenesis. Cowan draws attention to the fact that it is a big assumption that the processes of repair and regeneration have much in common with neurogenesis. Herschkowitz and McKhann survey human brain development and conclude that the important questions concerning the flexibility of cytoarchitecture in development, the biochemical mechanisms underlying genetically determined disorders of neuronal migration, and neurotransmitters in different pathways, are largely unanswered. The biochemistry and pathology of the demyelinating disorders such as metachromatic leucodystrophy, Krabbe's disease and adrenoleucodystrophy remain the best understood examples of hereditary disorders. Horwitz reviews nervous development in nematodes, presenting evidence that specific positional or temporal signals, or both, are essential in development.

Kreutzberg considers the acute microscopic and histochemical reactions to injury in motor neurons, and Willard and Skene review molecular events in regenerating axons, commenting on differences between quiescent and regenerating axons, the timing of RNA synthesis, the various types of transport, and some of the signals involved. This is a very clear introduction to a complex subject. Aguayo summarises the results of the experiments of his group up to that time. His work, showing that CNS neurons have the capacity to regenerate if allowed to enter a peripheral nerve Schwann cell environment shatters the previously widely held view that CNS neurons are incapable of more than token efforts at regeneration. That functional connections can result when CNS neurons regenerate along peripheral nerve grafts remains to be shown. It is a pity that Bjorklund was not present at this conference, since his work, showing that embryonic CNS cell transplants are capable of restoration of both structure and function, together with Aguayo's experiments are currently the

most exciting in the field of CNS regeneration.

Purves reviews axon guidance mechanisms, pointing out that the biggest unsolved problem is how axons sense their position within the matrix of cells through which they must grow. Sanes discusses the regeneration of synapses stressing the multiplicity of interdependent factors which regulate their formation and maintenance with reference mainly to the neuromuscular junction. Muller reviews aspects of invertebrate axon regeneration, particularly the ability to relocate and innervate old targets; it is clear that the capacity for restoring connections is greater than in vertebrates. Thoenen *et al* present evidence that nerve growth factor is important in regeneration as well as in development.

Useful papers on clinical aspects follow by Freund and Bauer, Singer and Crill and Raichle. Frank and Mendell then discuss problems of spinal cord regeneration, the former drawing a similar conclusion to Aguayo, namely that it is the glial environment which appears to be preventing spinal cord neuron regeneration, and he discusses the evidence that spinal cord regeneration does occur in lower vertebrates such as the goldfish and toad. Mendell's paper is concerned with the temporal anatomical and physiological changes after spinal cord injury. He concludes that there is no single sequence of events which occurs in all pathways. Finally, Nashold reviews the contribution of electroneuroprostheses in rehabilitation, examining those for improving limb function in paralysis or amputation, for controlling bladder function, for restoring visual perception in the blind, for diaphragmatic paralysis and for pain.

Whether the four group reports which follow really represent the shared views of members of the groups is not altogether clear, but each is longer than the individual papers and reviews further the four main topics of the conference. I found these particularly helpful, not only in presenting further evidence but in clarifying and discussing a number of the crucial issues in regeneration.

Although already out of date concerning some aspects of CNS regeneration this book is nevertheless valuable in covering major topics in a series of short readable review papers. The Dahlem conference workshop model, involving precirculation of papers, leads to less repetition and a much more readable volume than the usual multiple author symposium proceedings, and contributes to the success of this book.

Much factual information is contained in it, and at its relatively cheap price, can be highly recommended to anyone interested in the problems of repair of nervous tissue.

JW SCADDING

Antiepileptic Drugs (2nd ed). Edited by Dixon M Woodbury, J Kiffin Penry, CE Pippenger. (Pp 1040; \$88.40.) New York: Raven Press, 1982.

The first edition of this volume was published in 1972 and rapidly established itself as the classic in the field, because of its comprehensive and authoritative reviews of the pharmacokinetics, biotransformation, clinical use and toxicity of the major antiepileptic drugs. This volume is a totally revised version that is 60% longer than the first edition. It is also qualitatively better. It will prove invaluable to every neurologist treating patients with epilepsy and be of great assistance to pharmacologists and other research scientists.

Major differences from the first edition include the decline in the space allotted to phenytoin, and the substantial contributions now devoted to carbamazepine, valproate, and the benzodiazepines. Valproate did not feature in the first edition, and carbamazepine and the benzodiazepines had only one short chapter each. Forecasting the future is never easy. The last five chapters in this edition are devoted to "potential antiepileptic drugs or anticonvulsants" and already the selection looks doubtful.

Another innovation is a chapter on "Mechanisms of Action" for each major drug. Wisely no attempt of this kind was made in the first edition. Now much more is known about the effects of anticonvulsants on ionic movements and on synaptic function, and the contributions on this are most welcome, even if many of the findings discussed are likely to be rapidly outdated.

The editors and Raven Press deserve the highest praise for providing us with this superb volume.

BS MELDRUM

The Dementias. (Advances in Neurology, Vol. 38). Edited by Richard Mayeux and Wilma G Rosen. (Pp 288; \$45.00.) New York: Raven Press, 1983.

There are 31 contributors to the 18 chapters in this book. The editors point out that understanding and treatment of the dementias is far from adequate. The book

approaches the clinical and investigative problems posed by dementing illness from the standpoint of research but there are useful reviews of practical points in diagnosis and management, both medical and social. The clinical features of the most common form of dementia, Alzheimer's disease, are clearly described and attempts are made to differentiate the psychological disturbance in this disease from that associated with other dementias, particularly those with a subcortical pathology such as Huntington's disease. Rarer conditions such as Creutzfeldt-Jakob disease, and a variety of metabolic abnormalities causing a confusional state, are also described. The authors do not clearly distinguish the mental state of metabolic encephalopathy from that associated with structural or biochemical disease primary to the brain itself, simply using the phrase "treatable dementia" for the former. Much of the basic science content of this book is repetitious with other volumes and some of the accounts, particularly those of neuropharmacology of Alzheimer's disease, reflect individual reviews rather than a wide-ranging review of the literature. However, there is a determined emphasis on a search for treatable causes of dementia. Furthermore, the editors recognise the importance of cognitive disorder in patients with basal ganglia disease by including a discussion of dementia and Parkinson's disease and a more general approach to the problems of behaviour and the basal ganglia in a stimulating chapter by Stern (New York). Discussions of the family burden imposed by patients with dementia, and advice on the long-term care of the demented, are somewhat brief and reflect American concepts rather than a European approach. The book is generally well produced and has been carefully edited. It is one of the best of recent books on this subject.

M SWASH

Neurologic Emergencies. Edited by Michael P Earnest. (Pp 534; £42.00.) Edinburgh: Churchill Livingstone, 1983.

The purpose of this book, as defined in the preface, is "to provide several aids to the general physician, emergency room doctor or any other non-neurologist who wishes to learn more about managing neurologic emergencies". That there is a need for such a volume is evidenced by the fact that a considerable proportion of neurological emergencies are managed by general physicians and other non-neurological

specialists, and there are too few standard texts to cover their specific requirements.

In this book, the "neurologic emergency" has been taken in the widest sense of its meaning, ranging from the acute management of seizure and unconsciousness, to the differential diagnosis and management of multiple sclerosis, headache and aphasia. These subjects are covered in 20 chapters by 21 individual contributors from the United States who are, in the main, contemporary, practising clinical neurologists. As with all multi-author books, there is variation in the quality of the chapters. However, there is a consistent format throughout with relevant information on basic pathophysiology, and the logical sequence of history, examination, relevant investigations, treatment and clinical examples. The book is well illustrated with clear line drawings, tables, radiographs and flow-charts to aid management. In some of the chapters, in order to be totally comprehensive, the tables are perhaps too extensive and insufficient emphasis is given to the more common diagnoses.

I particularly enjoyed the first chapter on the principles of early diagnosis and management of nervous system emergencies. But this, like the chapter on the technique of lumbar puncture may be too elementary for the experienced clinician seeking extra advice in this discipline. Furthermore, whilst the common symptom of headache is well covered in 23 pages, the equally common symptom of dizziness is dismissed in two.

In some specific comments on management, the American view may not reflect current practice in the United Kingdom. Some examples of this would be the recommendation of computerised tomograms in all patients with a first seizure (except those with true petit mal) and, perhaps more worryingly, the use of anti-coagulants in "stroke in progression" in the absence of a surgically correctable lesion or evidence of bleeding within the central nervous system.

This well produced book falls between a practical guide and a text book. Senior general physicians are likely to find some of the chapters too basic, whereas students and junior medical staff may find the price prohibitive. In spite of certain shortcomings, the book does offer much practical advice in the approach to the neurological emergency for the general physician and fills and conspicuous gap in the current literature.

LJ FINDLEY

Essentials of Clinical Neurology. By Leon A Weisberg, Richard L Strub & Carlos A Garcia. (Pp 417; £15.00.) Baltimore: University Park Press; UK Distrib: Edward Arnold Ltd, 1983.

Any book which draws attention to the poor clinical teaching of neurology in medical schools or the low standard of neurological practice amongst physicians cannot be all bad. In their preface, the authors of this excellent little handbook draw attention to the fact that "the general level of neurologic sophistication of graduating physicians is not as high as was previously the case". Some of us would be less polite. The authors add "in the past several years, fewer and fewer medical schools require students or house officers to rotate on neurologic services". Any neurologist not separated from clinical colleagues, has experience of standards so appalling as to be unthinkable if transposed to any other speciality. For example, myelograms on patients with migraine; nerve biopsy without prior electrophysiology or muscle enzyme estimation in patients with no clinical evidence of nerve or muscle disease; lumbar puncture on suspected posterior fossa tumours. . . . If a neurologist did liver biopsies on patients with no evidence of liver disease and without carrying out liver function tests, the chaps with tin-hats would be summoned forthwith. Do general physicians carry out this amazing level of neurology because of ignorance, not realising that they would fail the Ambulance Man badge in the Boy Scouts, or because of some deeper reason? The answer is complex. We all know of physicians so badly frightened by neurologists when young that they cannot face a simple referral. These physicians tend to use the neurologist as a part-time and supernumery house-physician, that is to take a history and examine the patient, or referral is direct to the *Brain Surgeon*, a method which involves no loss of face, though it does raise the rate of burr-holes for epilepsy and CT scans for hysteria. Neurologists must take their share of the blame and perhaps it is a great share. The failure of most neurological departments to run anything approaching an acute service, the failure to properly manage patients with severe chronic neurological deficit, the failure to provide a proper assessment and treatment service for such serious and common problems as neuropathic bladder and pain, to name only a few areas, only helps to perpetuate the image of neurology as a sterile academic subject which is a lux-