

In the foreword, Professor Wiederholt advises us that the first edition was indeed well received but there was constructive criticism and this has been taken into account.

The chapter on "Infections of the Nervous System" had been critically reviewed and has been rewritten. Some alarm was expressed in 1983 that in the chapter on headache, lumbar puncture was said "to be used to assess . . . tumour and increased pressure." Surely this sentence must come out of the book, for with the advent of CT scanning, lumbar puncture in tumour suspects must be culpable, and certainly this recommendation to non-neurologists is totally unacceptable. In an earlier chapter, the same author, i.e. Frank R. Sharp states ". . . Meningitis and encephalitis are major indications for lumbar puncture. The presence of focal signs or symptoms require CT or MR imaging and neurological consultation prior to lumbar puncture" and in the same chapter under the heading "Mass Lesion" the author states ". . . This is a contraindication since L.P. may precipitate or hasten herniation (sic)." I would certainly recommend that the editor deletes the initial recommendation from any future edition. The advice in these three sections is confusing and could well lead to spinal fluid examination in the face of raised intracranial pressure.

The possible increased morbidity of lumbar puncture is recognised in the section on spinal cord compression but the advice to the clinician is again somewhat uncertain. It is suggested that lumbar puncture may worsen pre-existing spinal cord compression and no doubt this is true but the clinician is advised that "in this event emergency myelography should be performed and surgery considered . . ." Surely it is more acceptable in suspected spinal cord compression to undertake the myelogram initially, to define the extent and location of the lesion.

Thus I feel this book is found wanting in two major areas of acute neurological-neurosurgical practice. It is unfortunate that the short chapter on Craniospinal Trauma has not been expanded. This is an area of major concern and as the author states, "Accidents constitute the leading cause of death in the United States in those between the ages of one and 40".

The remainder of the book, however, is attractive. It is short and could readily be assimilated by a person taking up his initial residency in neurology. As in the first edition, the essays are largely written from the Department of Neurology in San Diego. I feel Professor Wiederholt should be congratulated on his book which, with the above

provisos will, I am sure, again prove useful and of great value to those without specific neurological training.

J B FOSTER

**Functional Brain Imaging.** By G Pfurtscheller and F H Lopes da Silva. (Pp 264; Price not stated.) Publishers: Hans Huber, Toronto. 1988.

The range of techniques for studying the topography of cerebral function has recently been expanded by the development of PET, SPECT, MRI spectroscopy and magnetoencephalography (MEG). At the same time a fresh impetus has been given to the mapping of electrical activity by the development of the low cost coloured computer graphics available commercially as devices for brain electrical activity mapping (BEAM). This book records a symposium held in 1987 which brought together expertise in topographic EEG and evoked response (ER) analysis, MEG, PET and SPECT. Several reports concern correlative studies of magnetic and electrical measurements for EEG and regional blood flow or metabolism.

The first section devoted to localisation of electrical and magnetic ER sources is introduced by technical and theoretical reviews of interest both to the specialist (Nunez, Meijs *et al*) and the more general reader (Kaufman and Williamson, Romani). Several studies indicate the possibilities for resolving basic ERs into the activities of topographically distinct generators (Huttunen *et al*, Bertrand *et al*). Some interesting results emerge, for instance that the fields produced by simultaneous stimuli in different sensory modalities are not simply the sum of sources for the ERs to each individual modality (Weinberg *et al*).

Section II considers what Gevins and Bressler term "functional topography", not simply mapping electrical fields nor deriving equivalent dipoles, but using statistical techniques to analyse functional relationships between activities at different sites. Pfurtscheller and colleagues approach this by considering event-related desynchronisation in relation to sensory processing and memory, and a single contribution on motor mapping by direct electrical stimulation through the scalp is provided by Cohen and Hallett.

Conventional BEAM is introduced by a critical review of methodology and current problems by Duffy. Petsche *et al*, employ significance probability mapping to display differences during various tasks, and Etevenon *et al* adopt a similar approach to

pharmacological studies. Reports on psychiatric material include a study by Gruzelier *et al* showing that memory tests which discriminate between schizophrenics and controls are also accompanied by anomalies of EEG topography in the former.

The final section on PET and SPECT (disappointingly MRI spectroscopy is omitted) covers a good deal of familiar ground but includes a very full review by Engel of the relationship between PET and EEG findings in partial epilepsies.

It is the view of many clinical neurophysiologists that the introduction of BEAM in clinical EEG practice has thus far been counter-productive. In centres of excellence it has proved a useful research tool, offering improved insights into the topography of ERs in particular, but, as indeed Duffy points out, more generally its clinical use has been either naive, as a supposedly simple substitute for proper EEG recording and interpretation, or frankly exploitative: a coloured brain map looks as impressive as a PET scan and is cheaper to produce. The present volume provides a much needed corrective to the many recent publications which have misrepresented and trivialised brain mapping. It describes exciting and innovative approaches to the topographical study of cerebral function, some of which must surely become standard neurodiagnostic techniques in the future. This book is not easily read, partly because of the wide range of technologies covered, but certainly merits the attention of experimental and clinical neurophysiologists, cognitive psychologists and other neuroscientists.

COLIN BENTON

**Noninvasive Imaging of cerebrovascular disease.** Edited by Jesse Weinberger. (Pp 192; \$62.50.) New York: Alan R Liss 1988.

This volume is the fifth in the series *Frontiers of Clinical Science* and attempts to provide the clinician caring for stroke patients with a working knowledge of non-invasive techniques for investigating cerebral ischaemia.

Divided into nine chapters, it includes sections on echocardiography, Doppler, and MRI, SPECT, PET and, rather incongruously, cerebral monitoring during endarterectomy.

The section on echocardiography, written by a cardiologist, is little more than a very basic text on echocardiography and its only concession to the investigation of cerebral ischaemia amounts to 16 lines with no useful

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discussion of indications, pitfalls, etc. The next four chapters thoroughly cover Doppler ultrasound in its various guises with a useful discussion on the correlation between duplex Doppler and arteriography but not on the indications for or use of either of these. They do, however, err on the lengthy side with the section on transcranial Doppler almost amounting to an operator's manual with far more detail than a clinician requires. The longstanding habit of Doppler enthusiasts of confusing velocity with flow is at least partly addressed by use of the term "flow velocity" though I would suggest that "velocity" by itself would be less presumptuous.

To read the chapter on MRI and CT one could be left with the conclusion that CT by comparison is almost useless in stroke. The benefits of MRI in imaging lacunar and posterior fossa infarcts are stressed but is it really necessary in routine practice to use MRI because it may diagnose supratentorial infarction a few hours earlier than CT? Conversely perhaps, the commonest reason for early diagnosis in stroke i.e. haemorrhage or infarct in an anticoagulated or fibrillating patient is not mentioned, though CT is superior to MRI for this. SPECT is covered satisfactorily, though the resolution of the camera used is poor and HMPAO scarcely touched upon. Kushner provides a useful and succinct review of PET in cerebral ischaemia and the book finishes with a short chapter on cerebral function during endarterectomy which may be of use if a role is found for endarterectomy.

Though the subject is adequately reviewed overall, the book is poorly balanced between and within chapters and it is difficult to see at whom the book is aimed; it is too detailed for non-specialists and those who have an interest in vascular neurology will be familiar with the vast majority of the material. It may deserve the making of space on the library bookshelf but not in the wallet.

J V BOWLER

**Handbook of Neuropsychology Vol. 1.** Series Editors: F Boller and J Grafman. (Pp 441; price not stated.) Amsterdam: Elsevier, 1989.

This production is somewhat reminiscent of the Vinken and Bruyn *Handbook of Clinical Neurology* and aims to provide a "comprehensive and current coverage of both experimental and clinical aspects of neuropsychology". The first volume, which forms the basis for this review, starts with some

introductory chapters on history, methodology, cerebral dominance, neuropsychological assessment etc; goes on to deal with attentional disorders, including confusional states, orientation and hemispatial neglect; and concludes with the first ten chapters of the section on aphasia and related disorders. Apart from completing the section on aphasia, subsequent volumes will contain sections on disorders of visual behaviour, amnesia, emotional behaviour, the split brain and hemispherectomy, and issues surrounding ageing and dementia.

Undoubtedly, the whole series is a major undertaking. As far as can be judged from the contents of the first volume, together with the outline in the preface, the coverage across the series as whole is not quite as comprehensive as is claimed. There is a bias to the theoretical and experimental aspects rather than the practical and clinical. Thus the whole of neuropsychological assessment is reduced to two chapters and it appears that there is no systematic discussion of the management of neuropsychological impairments despite the burgeoning literature on this topic. The anatomical approach to neuropsychology based around the impairments associated with lesions in different parts of the brain (eg the effects of frontal lobe damage) is not specifically covered. The editors might claim that much the same material comes up in the sections on amnesia, aphasia, etc., but this would not be a wholly convincing response. These quibbles apart, the series does look as if it will cover a very extensive chunk of neuropsychology.

The individual contributions to the first volume are mainly of a standard appropriate to a work that obviously sets out to become a definitive reference. The chapter by Bisiach and Vallar on hemineglect stands out particularly as well worth reading. There are some problems however. Aphasia is undoubtedly a major topic that is difficult for any single author or small group of authors to cover authoritatively in all its aspects. Splitting the field into so many different chapters written by a multiplicity of experts may help to enhance the depth of the analysis of each small aspect. The disadvantage is that it makes the overall treatment of the topic appear rather fragmentary. Possibly this will be minimised in practice since many of those consulting the volume will do so to look up particular issues, such as naming or agrapahia, and will not attempt to read the whole in sequence. Inevitably there are also some minor problems or omissions within individual chapters. For example, the chapters on methodology do not give single case ex-

perimentation anything like the prominence that might follow from the frequency with which it is encountered in the literature.

Taken as a whole, the first volume suggests that the *Handbook of Neuropsychology* will turn out to be a very useful series which is likely to be a welcome addition to many libraries. Although stronger on the more theoretical and experimental aspects than material of direct practical application, the latter is by no means totally neglected. The series as a whole certainly seems set to bring together a wealth of material from the rapidly expanding field of neuropsychology in a generally competent and authoritative manner. The first instalment will certainly not languish unconsulted on this reviewer's bookshelves.

E MILLER

**Child Neurology & Developmental Disabilities.** By Joseph H French, *et al.* (Pp 287; £52.00.) Publisher: Paul H Brookes, Quest-Meriden Ltd, 1989.

The preface to the book states that the topics were chosen from papers delivered at the 4th International Child Neurology Congress and the Satellite Symposium of Child Neurology & Developmental Paediatrics that was held in Jerusalem in 1986. Authors of papers selected were given an opportunity to update their contributions. There are 34 chapters and 84 authors.

Chapters 1 to 12 cover recent developments in aetiology, diagnostic categorisation and pathogenesis of some nervous system disorders in childhood. The first paper is an introduction to the biochemical and newer techniques of molecular genetics. The Dutch group give a good review of the spectrum of paroxysmal disorders and suggest a comprehensive list of biochemical tests for the screening and diagnosis of these disorders. The discussion on the pathogenesis of virus-induced nervous system injuries including both acute infections and viral persistence in the CNS, is fairly comprehensive.

The effects of seizures on the developing brain is brief but adequate and concludes with prognostic features to indicate long-term outcome. Opiate peptides and their relationship to seizures is covered in detail with the conclusion that ACTH, a peptide derived from the same precursor molecule as B-endorphin, is the only demonstrably effective anticonvulsant in certain childhood seizure states.