Book reviews

Lasers in Neurosurgery. Edited by Jon H Robertson, W Craig Clark. (Pp 182; £75.00.) Dordrecht: Martinus Nijhoff, 1988.

This book is published as one of a series entitled *Foundations of Neurological Surgery* and is a clearly produced volume. The early sections on laser types and laser physics read easily and are well illustrated, but the one which follows on the interaction of laser light with neural tissue is a little less clear but quite comprehensive. The section on benign supratentorial tumours is more of a mature appraisal of the approaches to these problems rather than a detailed account of the neurosurgical laser, but the well established technique of applying defocused laser to the skull base after meningioma excision, the high power density laser vapourisation of tumours, and the sharp focused dissection from the falx and sagittal sinus, are included.

Salcman's account of the laser surgery of glial tumours is comprehensive in the technical aspects, the different tumour types treated and in the comparison of laser with non laser techniques by operative results and follow up.

There is a good account of the value of the laser for glomus jugulare tumours and also in the excision of craniopharyngiomas, both of which the reviewer can confirm.

The paediatric chapter overlaps that on the treatment of congenital abnormalities, the latter containing the better account of laser resection of lipomyelomeningoceles, but the former gives an excellent description of the laser excision of low brainstem gliomas in children.

Patrick J Kelly's short account of stereotactic laser resection of deep-seated cerebral gliomas underestimates the importance of this method which he has pioneered, and the section on intraspinal tumours which follows it gives insufficient detail on microsurgical laser technique and results in the treatment of intramedullary tumours. There is a short section on making DREZ lesions and myelotomy with the surgical laser in the treatment of pain.

The book ends with a good physical explanation and illustrated account of the Nd:YAG in the treatment of AVMs, and a brief survey of laser in microsurgical anastomosis of small vessels and nerves in experimental studies. For the first volume of the *Foundations of Neurological Surgery* series this sets quite a high level.

G BROCKLEHURST

Brain Iron: Neurochemical and Behavioural Aspects. (*Topics in Neurochemistry and Neuropharmacology Vol 2*). Edited by Moussa B H Youdim. (Pp 148; £30.00.) Basingstoke: Taylor and Francis, 1988.

Every metal has its day and now it appears to be the turn of iron. Considering the dramatic effects shown by iron overload in haemochromatosis or indeed by iron deficiency on peripheral organs, it is perhaps surprising that iron in brain has received relatively little attention. The occurrence of iron deposits in brain in Hallervorden-Spatz syndrome should have signalled the important role it might play. More recently there have been the conflicting suggestions that iron levels are increased in substantia nigra in Parkinson's disease and that iron preparations may be beneficial in the treatment of the illness. So, the publication of a volume on the role of iron in brain is a well timed event.

The book opens with a discourse by Dr Hill on the distribution of iron in brain. This emphasises the uneven levels of iron found in different brain regions, and its dependence on the age of animals or man and the sex difference in iron accumulation. The author also seems drawn to a relationship between iron distribution in brain and that of GABA. Most interestingly the author dwells on the techniques available for locating iron in brain at the cellular and subcellular level and the problems of visualising soluble forms of such as ferritin. However, the text dwells on the authors own techniques and it would have been appropriate to draw comparisons with the other methods available. Coverage is given to the cellular location of ferritin, transferritin and transferritin receptors but there is little mention of other iron binding molecules. With the evidence for iron deposition in a variety of neurodegenerative diseases some coverage of haemosiderin would have been welcome.

Iron dependent enzymes play a major role in neurotransmitter synthesis and energy metabolism. So appropriately Drs Wigglesworth and Baum have contributed a detailed summary of this area. The coverage given to different enzymes was uneven perhaps reflecting the available data but in some instances no role for iron in the functioning of a metalloenzyme was suggested. However, the chapter emphasises how alterations in iron metabolism might severely disrupt brain function.

The following contribution came as a surprise in a volume dedicated to iron in brain. Dr Sourkes reviews the role of trace metals in neurochemistry. Excellent coverage is given to the function of cobalt,

copper, zinc and manganese but not iron. Indeed, Dr Sourkes makes it clear from the start that "the neurochemistry of iron is the subject of the rest of this volume and needs no elaboration here". No criticism of Dr Sourkes' contribution should be taken but perhaps the editor should be made the scapegoat for this interruption in the discourse on iron.

Next comes the editor himself, Professor Moussa Youdim, with his colleague Dr Yehuda, dealing with brain iron deficiency. They produce evidence which clearly demonstrates the role of iron in dopamine mediated motor behaviour, dopamine receptors and in cognitive function. They postulate an important role for iron in the production of tardive dyskinesia by neuroleptic drugs involving effects on both brain dopamine and GABA systems. Only further study will determine whether this idea is correct or not.

Lastly, Drs Pollit and Kim raise the important issue of whether iron deficiency in children affects learning and achievement. From a comprehensive examination of various studies they conclude that iron deficiency anaemia interferes with brain function among pre-school and school-age children. If confirmed this conclusion has important implications for health education.

The volume provides an interesting insight into the role iron might play in brain function. My overall impression was that there is a long way to go to convince everybody that iron is involved in specific disease areas. I also felt that a larger volume giving more coverage to some of the basic science issues of iron handling by brain would have been appropriate and would have given less emphasis to the more speculative areas of iron's role in specific disease areas. However, I enjoyed reading the volume which at least partially fills a gap which has existed in the literature for too long.

P JENNER

Giant Intracranial Aneurysms. Therapeutic approaches. By Y Keravel, M Sindou. (Pp 180; DM 248.) Berlin: Springer, 1988.

This slim volume is an English translation of a monograph published by the French-speaking neurosurgical society in 1984, which has been updated. It is a 17 author monograph, which covers the full spectrum of pathology, presentation, investigation and management of giant intracranial

aneurysms, with the emphasis on the therapeutic approaches to the problems. The work is based on the experience of the French neurosurgeons, backed up by a thorough review of the literature. The book is well-written, well-translated, but I felt that its main strength was the superb illustrations, particularly the photographs taken through the operating microscope, which are sharp and, although only in black and white, are usually accompanied by excellent drawings which illustrate the anatomy perfectly. A further strength of the book is the final 3 pages, under the heading General Conclusions, where the authors set out their philosophy in the management of the various clinical problems associated with giant aneurysms. Their approach is, of course, personalised and like all neurosurgical problems, open to debate, but for the general neurosurgeon who occasionally deals with giant aneurysms, these 3 pages act as a clear guide for decision making and by following the authors' recommendations, a good plan of management can be developed. I find it rare in a book of this type for such clear final recommendations to be made and I think this adds considerably to the value of the work.

The book is expensive for its size, but I feel should be available in all libraries where neurosurgeons practise. Whether the individual will want to buy it will depend on his personal circumstances. I feel that the neurosurgeon with a particular interest in giant aneurysms, may find detail lacking in the text, but would greatly appreciate the extensive bibliography. The resident in neurosurgery would probably find the book too expensive, but should read the book as a great deal will be learnt from it about the management of these difficult clinical problems.

PETER RICHARDS

The Molecular Biology of Neurological Disease. Edited by R N Rosenberg, A E Harding. (Pp 261; £35.00.) Guildford: Butterworth Scientific 1988.

The remarkable development of molecular biology over the last decade has already had a profound effect on the pathogenesis, investigation and in some cases management of clinical neurological disease. Hitherto the main impact of the so-called "new genetics" has been in the field of inherited neurological disease but over the last few years rapid progress has also been made in elucidating

the molecular pathogenesis of a range of diseases including Alzheimer's disease, viral diseases and neurological diseases associated with mitochondrial dysfunction. For these reasons this is a particularly timely volume. It is the ninth title in the series of Butterworth's *International Medical Reviews on Neurology* and carries on the exceptionally high standard set by all of the previous volumes. Because of both the complexity of the subject and the range of topics that can be subsumed under this title, the editors must have been faced with a difficult task in the selection of the chapters. However, I consider that they have carried out this task in a masterly fashion and in compiling this succinct yet comprehensive volume the editors have performed a considerable service to the neurological community.

This is the most scientifically orientated of all of the volumes in the Butterworth's series to date, and I personally applaud this approach. Understanding molecular biology is not easy and the "jobbing neurologist" without the relevant scientific background will have to exert a considerable degree of concentration and force of will to get to grips with all the concepts which are presented. However, the rewards of such careful reading will be considerable because almost without exception the chapters in this book are authoritative, broad in scope, highly informative and stimulating. A large number of topics are covered and there are no significant omissions. As has been the tradition in this series there is a very good introductory chapter by the editors in which basic molecular biological principles are introduced. In subsequent chapters gene expression in both brain and skeletal muscle are well covered and there is a fine chapter on the regulation of nervous system development by specific proteins. There is a detailed and concise review of chemical neurotransmission, and two chapters on messenger RNA in nervous tissue, one concentrating on in situ hybridisation methods of visualising brain mRNA and the other giving a more general discussion of mRNA levels in a variety of neurological diseases. There are two chapters devoted to viral diseases of the nervous system. One of these is a concise review of host and viral genetic factors influencing viral neurotropism and the other is concerned with detection of viral genes in a variety of neurological diseases. The latter is certainly adequate although a little uncritical in places. There is also a chapter describing elegant experiments of neurological disease induced in transgenic mice. Naturally there are several chapters devoted to the molecular genetics of inherited neurological disease.

The remarkably successful application of molecular biological techniques to muscular dystrophy are described in an excellent chapter which highlights the impact that these techniques have had in terms of carrier detection and prenatal diagnosis. There are also authoritative chapters on the molecular genetics of Huntington's disease, neurological diseases associated with mitochondrial gene dysfunction and the molecular basis of retinoblastoma and Joseph disease. There is a stimulating chapter on the molecular basis of neuro-oncogenesis and also a very useful review of immunogenetics and the association of genetic polymorphism and susceptibility to a variety of neurological diseases. Finally, the authors summarise the neurological "gene map" for 1987.

In summary, this is an extremely useful book and in my opinion should be read by all clinical neurologists. It should also be of considerable interest to a variety of other specialists including those in the fields of pure molecular biology, psychiatry, neuroscience, genetics and developmental biology. The book is reasonably priced, well produced and also has good illustrations. It deserves much success and should be on the shelves of all neurological and general medical libraries.

PGE KENNEDY

Neuropsychological Rehabilitation. Edited by Anne-Lise Christensen, Barbara Uzzell. (Pp 133; £25.95.) Dordrecht: Martinus Nijhoff, 1988.

The Proceedings of a two day conference on the rehabilitation of brain damaged people, held at Copenhagen in 1987 are recorded in this book. The stated aims of the conference were "to present and discuss state of the art knowledge within neurophysiology, neurology, neuropharmacology and neuropsychology as they apply to the rehabilitation of brain damaged adults." The aims of the book were to share the experience gained from the conference with a larger audience, and also to pay tribute to the work of Anne-Lise Christensen and her colleagues at the Centre for Rehabilitation of Brain Damage in Copenhagen.

The book consists of eight chapters and a postscript. The first and clearly-written chapter deals with the topic of neural plasticity and the "contextual" factors that may affect recovery of function following traumatic brain injury (TBI). Chapter two