
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 as 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 Wrighlesworth 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


This slim volume is an English translation of a monograph published by the French-speaking neurological 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

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 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 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 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 neuropathosis 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 biologists. 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.

PETER RICHARDS


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 neuropsychology, neuropsychology, neuropathology and neuropsychology as they apply to the rehabilitation of brain damaged adults." The aim 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