

## Book reviews

**Peptides and Neurological Disease.** Edited by PC Emson, M Rossor and M Tohyama. (Pp 380; \$118.00.) Amsterdam: Elsevier Science Publishers, 1986.

The elegant pathology carried out in many neurological diseases has often provided a clear indication of those parts of the nervous system on which further investigation should centre. Subsequent biochemical investigation in these areas has identified changes in neurotransmitter systems which have greatly assisted in understanding disorders such as Parkinson's disease and Huntington's chorea. But recent advances have identified a vast array of further potential neurotransmitter substances, namely the neuropeptides, and the time has come to assess their role in the aetiology, progression and drug treatment of neurological disease.

*Peptides and Neurological Disease* represents a brave attempt to answer these problems. Although resulting from a symposium held in 1983 the editors have thoughtfully added other contributions to produce a balanced approach to the state of the art. The major difficulty is that at this stage the role of neuropeptides in neurological disease is far from clear. For this reason, the book considers the techniques for assessing peptide systems and the distribution of peptide substances in basal ganglia, cerebral cortex and spinal cord. These chapters in turn are the prelude to excellent descriptions of the alterations in peptide substances which occur in Parkinson's disease, Huntington's chorea, Alzheimer's type dementia and schizophrenia. The section on spinal cord sensibly leads to a consideration of the role of neuropeptides in pain. In a manner typical of the logical way in which this book has been put together the final sections consider how peptide substances may provide drugs of the future and their clinical relevance to neurological disease. Clearly, it is still early days in peptide research and at present there is no effective treatment of neurological or psychiatric disease based on peptide derivatives. However, if the enthusiasm for investigations in this area, which has brought together the contributors to this volume, continues unabated, then it must only be a question of time before the peptides make a significant contribution to this field.

A volume to be recommended to the basic scientist and interested clinicians. Also, a must for library collections. The only drawback will be the high cost of the book which

will deter many from obtaining this valuable work.

P JENNER

**Can Schizophrenia be Localized in the Brain** (*Progress in Psychiatry Series.*) Edited by Nancy C Andreasen. (Pp 87; £15.00.) Washington: American Psychiatric Press Inc. UK Distrib: Cambridge University Press, 1986.

This is a nicely produced little monograph derived from a symposium held at one of the American Psychiatric Association's meetings. It is one of a series entitled "Progress in Psychiatry" and was clearly intended to capture the essence of some important symposia, so that people who could not attend the meeting would nevertheless have the thoughts and writings of the presenters.

The central theme of this one is very topical, and we are presented with five brief reviews of the relationship of schizophrenia to cerebral localisation. As may be expected, the central themes revolve around frontal and temporo-limbic disease, and in the brief space allotted to the authors, the reviews can hardly be called comprehensive. It is pleasing to see a contribution from this side of the Atlantic, with the Reveleys providing a chapter on genetics, and it is a little disappointing not to have some final chapter, preferably from the symposium organisers, summarising what they feel has come from their efforts, and perhaps digesting the important avenues for further research.

The issue of cerebral localisation in schizophrenia is one which requires considerable thought. For those interested, this little book will provide an up to date literature review, and can be recommended. Others who will benefit include students who feel that at long last they should try to get to grips with biological psychiatry and its relationship to schizophrenia, and who need an introductory text.

MR TRIMBLE

**The Frontal Lobes.** By Donald T Stuss, D Frank Benson. (Pp 370; \$60.50.) New York: Raven Press, 1985.

The frontal lobes present behavioural neuroscientists with a mystery. In phylogenetic terms, the development of prefrontal cortex is the most obvious anatomical difference between man and other species. In man the frontal lobes account for 24-33% of the total cortical surface area, yet even extensive damage may produce relatively lit-

tle in the way of obvious behavioural change when compared with lesions in the posterior cortex. A great deal of attention has focused on attempting to delineate the role(s) of this region through studying the effects of lesions on the performance of neuropsychological tests. Stuss and Benson's book presents a comprehensive review of this literature together with considerations of methodology and theory.

The book contains 17 chapters, informally organised in three areas. The first four chapters serve as an introduction. While much of the treatment is brief, they provide the non-specialist reader with much of the information necessary to appreciate the rest of the book, and give the more specialist reader an up to date (to time of publication) summary of important information.

Chapter 1 describes briefly the various approaches which have guided research on the frontal lobes (physiological, anatomical, clinical, observational and neuropsychological). In addition, it introduces the series of studies conducted by the authors themselves, which represent one of the major integrated bodies of evidence on frontal lobe function. Chapter 2 provides an extremely useful summary of the anatomical evidence. The authors correctly note that our knowledge of the functions of the frontal lobes depends, to a large extent, on knowledge of the neuroanatomy. This is particularly true of the connections between frontal cortex and other brain regions. Much of this evidence has been obtained from animal research, therein presenting a dilemma. The authors in their opening sentence to the book state that "... the study of the frontal lobes might be described as the study of the qualities that differentiate human being from other animals." Despite this, the authors are forced by necessity to accept the anatomical evidence from animal studies, but choose not to consider in detail the wealth of behavioural evidence. As the state, this is partly for reasons of economy but it also has basis in the belief that human frontal lobes are in some ways different from the whole, even at the expense of brevity, a separate chapter on the animal evidence would have produced a more balanced text. Continuing the introductory chapters is a discussion of the major causes of frontal lobe pathology, plus the main clinical pathological correlations which may be observed. The introduction ends with a brief overview of each of the main methods used in the study of the frontal lobes: neurological, psychiatric, neuropsychological, histological, radiological and electrophysiological.

The next four chapters report the "... more obvious, most sensational and/or the most frequently described findings following frontal lobe damage." These include disorders of motor function, attention, awareness, personality and emotion. Aphasia, despite its obvious and classical association with frontal lobe pathology is not discussed at this point, but is reserved for more detailed discussion later in the text. Throughout the book, the authors point out that the frontal lobes cannot be regarded as an autonomous and homogeneous anatomical entity, serving any single, obvious function. Rather, damage to the frontal cortex seems to have an influence on almost all aspects of cognitive behavioural function, forcing us to break down rigid anterior-posterior distinctions of brain organisation. This integrative approach is emphasised in the chapters on sensory-perceptual function, language and speech, memory, cognition and executive functions. The authors argue further that many of the neuropsychological instruments which we have available to us are unsuitable for analysing the true nature of frontal lobe function. They emphasise the need for more controlled, experimental procedures, an approach which would be of benefit to neuropsychology as a whole.

The final three chapters attempt to tie up some loose ends. Chapter 15 considers what we can and cannot say about localisation of function in the frontal lobes, while Chapter 16 reviews some of the major theories of frontal lobe function, both historical and contemporary. This latter chapter might have been usefully placed early in the text. The theoretical context within which studies were undertaken is of help in appreciating the diverse literature. Placed at the end, the theory seems little more than an afterthought. More validly, the final chapter is the author's own attempt to integrate the mass of accumulated behavioural and anatomical evidence, ranging in the process, from attention to free will. The attempt is, as the authors recognise, premature and incomplete. It is also, inevitably, disquietingly vague. It is clear that we have become locked into an approach to neuropsychology which demands clearly definable symptoms on which to base our theories. The book illustrates that we have yet to clearly define those symptoms when it comes to the frontal lobes. We also need a new language of neuropsychology to allow us to redefine existing evidence, and derive future theory. This book attempts to gather up a vast and amorphous body of knowledge. Hopefully the exercise will serve to stimulate a new direction for future research.

RG BROWN

**Neurosonography of the Pre-Term Neonate.** Edited by Edward G Grant. (Pp 116; DM 138.00.) Heidelberg: Springer-Verlag, 1986.

This book will be of interest to everybody who is involved in cranial ultrasonography in the neonatal intensive care unit.

Although it is not a comprehensive book of cranial ultrasonography, it deals in detail with germinal matrix related haemorrhages and periventricular leukomalacia in the premature infant.

The authors start with a chapter about the normal anatomy. This is very well illustrated and the legends are very clear. Subsequently they give us some insight in the pathogenesis of haemorrhages and leukomalacia. The third chapter covers the different sizes of germinal matrix related haemorrhages (GMRH). A lot of useful information is given to enable one to distinguish a germinal layer from an intraventricular haemorrhage. The fourth chapter deals with periventricular leukomalacia and contains many beautiful illustrations. The next two chapters look at the outcome of the survivors with haemorrhages and those with leukomalacia. The last chapter deals with the comparison of two modalities, ultrasound and computed tomography.

All the illustrations in this book are of very good quality. As only the areas of germinal matrix related haemorrhages and leukomalacia are dealt with, other books will still be required to cover other important areas, such as the different types of infections and the congenital abnormalities. As these problems are also encountered in the premature infant, it is difficult to understand why these matters are not included in this book.

Little information is given about the different methods of measuring the size of the ventricles. The authors are apparently not very keen on performing any measurements. Measurements, performed once or twice a week may be very helpful in choosing the right time to intervene when ventricular dilatation appears to be progressive.

The authors stress very well the pitfalls in diagnosing leukomalacia and show interesting follow-up scans, such as ventricular dilatation and widening of the inter-hemispheric fissure, the latter not having been reported previously.

It is nice to find an imaging book which contained two chapters dealing with the outcome of the infants with the different types of brain lesions. The number of infants available for follow-up in the haemorrhage group is a bit disappointing, but the data available do support findings in other

follow-up studies. The number of infants with normal ultrasound scans who subsequently developed major or minor handicaps was quite high. This could be due to the fact that transient periventricular densities have too often been diagnosed as a normal periventricular halo. More evidence has recently become available that these transient periventricular densities, also called "flares" are the milder end of the spectrum of leukomalacia. The follow-up data of the infants with cystic leukomalacia are more complete and show the poor prognosis of the survivors.

The last chapter which compares ultrasound with CT is a useful guide for those involved in the management of these infants and will help them to choose the right imaging technique for diagnosing the different types of lesion. They show that non-haemorrhagic leukomalacia, or strands or septi in the ventricles can be missed using CT scans, but that convexity lesions are more readily seen using this technique.

This book can be recommended to all involved in scanning premature infants in the neonatal intensive care unit.

LINDA DE VRIES

**TRH and Spinocerebellar Degeneration.** Edited by Itsuro Sobue. (Pp 268; \$74.00.) Amsterdam: Elsevier Press, 1986.

The attempts to identify an effective therapy for ataxia which have been made in the last decade or so do not add up to a tremendous success story. Impressive results from one centre, regrettably infrequently obtained from a well designed double blind trial, have rarely been confirmed in another.

The rationale for many of the proposed therapies for ataxia, particularly cholinergic compounds, is rather tenuous. Superficially it is difficult to see why thyrotropin releasing hormone (TRH) should confer any benefit on ataxic patients. TRH was first shown to improve ataxia in an ataxic mouse mutant (rolling mouse Nagoya) in 1977. Noradrenaline is present in abnormally high concentrations in the cerebellum and brainstem of these mice, and TRH accelerates noradrenaline turnover in the brain. It is known that there are noradrenergic afferents projecting to the mammalian cerebellar cortex, although their function is unclear. A recent observation which is possibly important, but not stressed in this volume, is that TRH appears to play a role in regulating GABA receptors in the cerebellum; GABA is the major neurotransmitter of Purkinje, basket and Golgi cells.

In this book, Sobue and many con-