

Notice

The Peripheral Nerve Study Group

The fourth meeting of the Peripheral Nerve Study Group was held at Wye College, Kent, on July 11 to 14, 1979. The Group, which was founded in 1974, meets at two yearly intervals to discuss research relevant to disease mechanisms in peripheral neuropathy. The meeting was attended by 130 investigators.

The initial session considered trophic interactions between the cellular elements of peripheral nerve and its target tissues. It emphasised the complex and vital interactions that exist between neurons, their supporting cells and their targets, and which are operative not only during development and regeneration, but also in the maintenance of the structural differentiation of peripheral nerve. In a session on morphometry, it was clear that the histological features of peripheral nerve are particularly suited to quantification, and that such studies are continuing to provide new information on development and regeneration and on the mechanisms of the different patterns of nerve fibre degeneration.

The immunopathology of peripheral nerve disorders has been an area of increasing interest in recent years so that two sessions were devoted to this topic. The subjects discussed included the immunological mechanisms involved in human and experimental autoimmune inflammatory polyneuropathies, the occurrence of humoral demyelinating activity in such disorders, the demonstration by immunocytochemical means of the distribution of basic protein and glycoprotein in nerve and the significance of immunoglobulin deposition in nerve in a variety of neuropathies. These are all areas of particular current interest.

Electrophysiological studies in experimental and human neuropathies have provided considerable insight into the mechanism of the clinical features of peripheral nerve disorders in man. A session on the pathophysiology of nerve ranged from biochemical observations on sodium channel gating components, through the conduction block related to demyelination produced by the intraneural injection of sera from animals with experimental allergic neuritis or lysophosphatidyl

choline, to potential clamp studies in diabetic neuropathy. A session on axoplasmic transport dealt with a number of conditions altering orthograde and retrograde transport, including acrylamide and IDPN intoxication, experimental diabetes and nerve compression. Discussion of these studies highlighted the current difficulty in interpreting the pathophysiological significance of changes in axoplasmic transport in such conditions.

Two sessions were devoted to toxic and metabolic neuropathies, another area of active research. Biochemical, electrophysiological, pathological and clinical aspects of the neurotoxic effects of organophosphates, ethambutol, acrylamide, *n*-hexane and methyl-*n*-butyl ketone were considered in the first. The effects of these toxins on the metabolic integrity of the nerve fibre and its energy-dependent transport systems were advanced as being essential aspects of the mechanism of distal ("dying-back") axonopathy which underlies these toxic neuropathies. The second session included observations on human and experimental diabetes and changes in cyclic GMP in experimental neuropathies.

Two sessions were also devoted to the experimental pathology of peripheral nerve disorders. Particular attention was devoted to the application of freeze-fracture techniques, although the considerable technical and sampling problems inherent in such studies were emphasised. An interesting pair of communications considered the normal structural features and the pathology of the transition zone between the peripheral and central nervous system in the spinal roots and cranial nerves. The recently introduced techniques for the recording of endoneurial pressure and their application to the study of the dynamics of experimentally-induced nerve oedema also figured, as did a study on the possible role of calcium ions in the breakdown of neurofilaments in the genesis of experimental neuropathies.

Genetic neuropathies in man and animals were the subject of the final session. Three new animal mutants were described that provide interesting models for human disease. The study of animal mutants has already illuminated pathogenetic mechanisms in neuropathies, in particular by xenograft experiments, and this field is

likely to continue to yield important conclusions.

The meeting indicated that the study of the pathogenesis of peripheral neuropathies remains an active area of research and demonstrated that effective collaboration between the neurobiologist and the clinical scientist is possible. The meeting was supported by Ciba-Geigy Ltd, the Muscular Dystrophy Associations of America and Canada, the Muscular Dystrophy Group of Great Britain, the National Fund for Research into Crippling Diseases and the Wellcome Trust. It was organised by PK Thomas (chairman), DN Landon and TA Sears.

Book reviews

Experimental Studies in Regeneration of Spinal Neurons By Tat'yana N Nesmeyanova (pp 261; illustrated; £18.50) Chichester: John Wiley & Sons. 1977.

Dr Nesmeyanova's laboratory in Moscow has been investigating the effects of damage to the central nervous system and the possibility of repair or regeneration for more than 20 years. The stimulus for this, and for many laboratories elsewhere in the world, has come from the work of Dr William Windle of the USA. Dr Nesmeyanova summarises relevant literature and her own studies, and in this monograph she describes reflex changes after spinal cord transection, the importance of afferent stimulation, regeneration of intraspinal axons in mammals, and a possible means of restoration of motor function in patients with complete or partial loss of conduction. It is clear that in Russia and in the USA the possibility that treatment might result in some functional restitution has been seriously considered and pursued despite considerable (and usually uninformed) scepticism elsewhere. The book is recommended particularly to those sceptics. Although in parts the book is naive and many of the Russian findings have yet to be confirmed by other laboratories and centres, the techniques described are of great interest and may encourage further work on the problem of return of function in the damaged spinal cord in man. The bibliography of work as indicated in

this book is extensive, particularly from the United States and from East and West Europe.

LS ILLIS

The Year Book of Psychiatry and Applied Mental Health, (pp 409 £29.50) Year Book Medical Publishers: Chicago 1979.

The current volume of this well-known series provides synopses of a larger number of papers on many topics in the general fields of psychiatry and related disciplines. Comments, sometimes on individual papers and sometimes on groups of papers, are made by the six editors, all of them senior and distinguished American research workers. Papers have been drawn from a wide range of English-language journals, but none from foreign-language journals.

The editors have had to be selective and in general they have chosen important or stimulating papers. There is good coverage of neurophysiology, biochemistry and pharmacology, child psychiatry, clinical psychiatry (with particular reference to conceptual models in psychiatry and to clinical aspects of schizophrenia), psychotherapy and pharmacotherapy. Some important topics get little more than token representation, while there is a very long section, including some not very important papers, on community psychiatry.

Within these limitations—and it would take a much larger volume to provide adequate representation of all the topics listed in the index—the book is a valuable source of easy reference to papers in psychiatry published in English up to Spring 1978. It can be warmly recommended to medical librarians.

JL GIBBONS

Sphingolipidoses and Allied Disorders, Volume 1 M Adachi, L Schneck, B Volk, eds. (pp 260 £16.50) Churchill Livingstone, London, 1979.

The area of genetically-determined storage diseases of the nervous system is one of ever-increasing complexity in which new entities and variants of previously described disorders continue to be recognised. This small volume in

the Annual Research Reviews series under the editorship of DF Horrobin is concerned specifically with those disorders in which storage of sphingolipids is the principal change in the nervous system, and consists of twelve chapters dealing with the gangliosidoses, Gaucher's disease, Fabry's disease, Krabbe's disease, metachromatic leukodystrophy, lactosyl ceramidosis, Niemann-Pick disease, Wolman's disease, Refsum's syndrome, fucosidosis, mucopolipidosis and the sea-blue histiocyte syndrome. It is an unillustrated volume which first summarises existing knowledge on clinical, biochemical and pathological aspects of these disorders and then reviews recent advances made over the past five years or so. It is an exhaustive review with over one thousand references, which covers all aspects of these disorders including biochemical diagnosis, prenatal diagnosis, detection of the heterozygous state, and attempts at parenteral enzyme replacement therapy which appear to hold some promise in at least some of these conditions.

This book will be of interest to those who are directly involved in the field of inherited metabolic diseases but is unlikely to be of great value to the adult neurologist other than for occasional reference.

FL MASTAGLIA

Mechanisms of Pain and Analgesic Compounds (Miles International Symposium Series, 11th) Edited by Roland F Beers, Jr, and Edward G Bassett (pp 520, \$51.35), Raven Press, New York, 1979.

This book records the proceedings of a 3-day conference held at the Johns Hopkins Medical Institutions in 1978. It comprises 40 contributions divided into sections: Recent clinical contributions to the understanding of mechanisms of pain and pain relief, an overview of the neurological significance of pain, endogenous substances having analgesic action, peripheral mechanisms of pain and analgesia, mechanisms of opioid analgesia and dependence, and new leads for the development of analgesics. Each contribution concludes with an extensive list of references, and each section with a critical discussion.

The title of the book is perhaps misleading. The book deals predominantly with theoretical issues, and clinicians working in a pain clinic will not find here a consideration of mechanisms for causalgia, phantom pains, referred pains, and other equally perplexing painful conditions. Given, however, that this is a book mainly dealing with selected and theoretical aspects, it has many distinguished contributors provide articles mostly of a review nature—both important and timely in this rapidly advancing field. To the reviewer, particularly interesting contributions included Long's article on "Neuroaugmentation Procedures for Chronic Pain" and Goldstein's on "Endorphins and Pain: A Critical Review", but there is a wealth of information to be found in this book which, as the cover suggests, will certainly appeal to those working in diverse but related fields.

The book is well produced, with good index, and is reasonably priced. It represents a very useful and up-to-date review of much of the theoretical basis of pain and pain-relieving drugs.

GD SCHWARTZ

The Concept of a Blood-Brain Barrier By Michael Bradbury (pp 465, illustrated; £22.00) Chichester: John Wiley, 1979.

The blood-brain barrier has long been a fruitful source of confusion to basic scientists, clinicians, and examination candidates alike. Professor Bradbury, a major figure in barrier research, has written an excellent review of this intractable subject. He locates the barrier fairly and squarely in the cerebral capillary endothelium, where there is now respectable anatomical and experimental evidence to confirm it. After reviewing the precise diffusion characteristics of the major metabolites and drug groups, he concludes that the primary function of the barrier is to maintain cerebral homeostasis, rather than to exclude specific exogenous endogenous toxins. The weakest part of the book is unfortunately the first chapter, where the hopeful will no doubt begin their search for the fundamental truths. Although it contains first rate material, it seems confused, hazardous, and ineffectively illustrated,