

The wide range of weapons used in the armoury against brain tumours is therefore justified: these are reviewed in the second volume.

The more traditional treatments by chemicals and irradiation are now complemented by immunotherapy, hyperthermia and ultrasound; in fact, by any agent, chemical, physical or biological, which has the slimmest hope of improving the doggedly poor survival rate of patients with intrinsic malignant brain tumours. With the exception of multiple sclerosis, there is probably no other disease of the nervous system, or for that matter of any other organ, which has spurred human ingenuity to its full stretch in the quest for cure. Combinations of drugs, fractionation of irradiation, manipulation of the blood-brain barrier, alteration of body temperature and boosting of immune responses have all been tested; but the survival rate with glioblastoma multiforme has scarcely changed during the last 30 years. The promise of recent developments in the understanding of the molecular and cellular aspects of cerebral malignancy described so comprehensively in the first volume has yet to be fulfilled.

PL LANTOS

Sleep Mechanisms. *Experimental Brain Research Supplementum 8.* Edited by A Borbély and JL Valatx. (Pp 330; \$32.90.) Heidelberg: Springer-Verlag, 1984.

Zuoz is at one end of the Engadine ski marathon, Maloja at the other. The first few km from Zuoz to the Muottas Muragl lower station restaurant can be an exhilarating experience but it pays to remain at the Northern end. The contributors to this winter research symposium volume seem to have worked round the clock at the Hotel Castell, and the results are almost as exhilarating as the skiing. Seventeen European countries from Moscow to Naples, and Israel are represented but, reflecting the comparative lack of interest in sleep research, the UK is not. This is one of the best symposia on any sleep-related subjects I have read. The topics are physiology, neurochemistry, genetics, metabolism and hormones, evolution and circadian rhythms. There are outstanding reviews by Parmeggiani on autonomic nervous system changes during sleep, by Ursin on endogenous sleep factors, Valatx on the genetics of animal sleep-wake systems (the HLA system is involved with the sleep of mice as well as of men), Elmqvist on cerebral circulation and metabo-

lism in sleep, and Wever on circadian aspects of human sleep. However, this selection is invidious. There is not a dull section in the book and the chapter by Mukhametov from Moscow on the way marine mammals sleep (the dolphin has unihemispheric sleep!) will intrigue anyone with the slightest interest in biology. The idea that endogenous depression is primarily a circadian rhythm disturbance has gained some credence in the last decade, and the section on circadian rhythmicity will be of great interest to psychiatrists. I suspect that the results of sleep studies in depressives may merely reflect previous sleep lack, and sleep deprivation is not an effective long-term treatment. However, the connection between sleep and mood is of fundamental interest. Borbély develops the idea that two separate processes underlie sleep regulation: one a function of sleep and waking itself whilst the other is controlled by a circadian oscillator. In depression both of these processes may be abnormal. For once the cover blurb is surprisingly accurate — “these contributions provide all scientists and clinicians interested in sleep research and its applications with rapide (sic) access to a wide range of recent results in an important area”. Highly recommended.

JD PARKES

The Epilepsies: A Critical Review. By Robert A Aird, Richard L Masland, V Dixon, M Woodbury. (Pp 320; \$61.50.) New York: Raven Press, 1984.

The continued expansion of basic and clinical research into those aspects of neurosciences related to epilepsy presents a problem to busy clinicians who feel they should keep abreast of these developments, but are deterred by lack of time from reading the many publications from various symposia which have been published over recent years.

This book, by three eminent American authorities, brings together, summarises, and stimulates thought on the advances in our understanding of seizures and the epilepsies that have occurred during the last decade. Whilst it is written with the clinical neurologist in mind it covers a very broad spectrum of the neurosciences ranging from the basic mechanisms of seizure discharge at a cellular level, through to the social management and counselling of patients with epilepsy.

The book begins with an excellent review of the ionic, membrane and cellular

abnormalities of seizure discharge and the mechanisms of seizure spread. All the major hypotheses of control of seizure activity are discussed, and criticised. The clinician would be hard pressed to find a better overview of this particular subject. From here the book goes on to cover the controversial ground of seizure classification and places particular emphasis on problem areas including the vexed question of how partial are complex partial seizures, and to what degree their symptomatology may be related to spread to limbic structures either unilaterally or bilaterally. Further chapters provide a very comprehensive coverage of aetiological factors in seizures, and a great deal of up to date epidemiological data has been summarised. This section finishes with an appraisal of genetic aspects of epilepsy.

The second half of the book is concerned with the management of epilepsy. This is necessarily more discursive and less scientific but contains some excellent chapters including one on general pharmacokinetic principles of treatment and the mechanisms of drug actions. Subsequent chapters deal with the choice of individual drugs for specific epilepsies and there is a useful chapter on sources of failure in the management of epilepsy. Social aspects of epilepsy are also well covered.

There have been many recent publications derived from symposia held on limited aspects of research into epilepsy. The merit of this book is that it draws together and reviews a wide range of differing spheres of knowledge of practical advance to the clinician faced with managing the patient with epilepsy. The text is concise, comprehensive, up to date, and as the title suggests critical. Clinicians will I am sure find the first half of the book on more basic aspects of seizures and epilepsies fascinating. One's only criticism might be the slightly less critical approach of the second more directly clinical part of the book. Here it is of some interest to read the recommendations of American clinicians for the choice of antiepileptic drugs for specific seizure disorders. It would appear that treatment with drugs such as phenobarbitone and phenytoin is more frequently initiated by the American physician than by his European colleague. It seems likely that this may be due to the more restrictive policies of the American Federal Drug Administration. This section of the book also fails to emphasise clearly enough the methodological inadequacies of studies which have been undertaken to compare the efficacies of anti-epileptic

drugs in man, and its conclusions are therefore open to criticism. I would, nevertheless, thoroughly recommend this book to all physicians caring for patients with epilepsy.

DW CHADWICK

Manual of Clinical Problems in Neurology. Edited by JP Mohr. (Pp 345; \$19.95.) New York: Little Brown, UK Distrib: Quest Publishing Agency, 1984.

This work is based on a series of neurological lectures given to candidates for the Board examination in internal medicine. As such it has a strong American emphasis. It is a multi-author work—some 11 specialists contributing to the 17 sections. These are divided into conventional subject titles as Stroke, Neuropathies, Infections and also by symptom titles as Disorders of Consciousness, Pain, Movement Disorders. Ninety six topics are discussed, some 44 by the editor.

There is a wealth of material covered in these topics which often provide a succinct appraisal of particular problems. In many there is a brief account of relevant anatomy, and often an up to date discussion about pathogenesis. There is emphasis on clinical presentation, and relevant investigations and treatment are discussed. Following each topic are a few key references, none more recent than 1983, with single line annotations. It is difficult to single out individual topics but those by the editor on *Stroke* (with a good account of the management of patients with asymptomatic bruits) and on *Metabolic Disorders*, by HO Lueders on *Epilepsy*, and by Noble J David on neuro-ophthalmic problems, deserve special mention.

There are some criticisms. It is disappointing in a pocket book of readily available information to find no clear guidelines to the anti-microbial chemotherapy of bacterial or tuberculous meningitis. The phrase "specific and adequate antibiotic therapy" does not seem very useful. There is no mention of tetanus and vertigo seems poorly covered. There are debatable points in the investigations: lumbar puncture to aid in the diagnosis of cerebral metastases and angiography in the management of patients with acute strokes certainly carry risks. The material is said to be based on commonly occurring diseases but this appears uneven. More space is devoted to carnitine and myoadenylate deaminase deficiencies without mention of thyrotoxic myopathy. There are also irritating points: migraine is not mentioned in the index and

Olszewski is correctly spelt in the references but not in the text.

The book is in soft covers with spiral bindings, useful for the pocket. It is reasonably priced. It may prove an important source of information for its intended American audience but may have a less secure market in this country where it is not likely to replace the more conventional texts, although it has much to recommend in it.

T FOWLER

Neural Tissue Transplantation Research. Proceedings in Life Sciences Series.

Edited by Robert B Wallace, Gopal D Das. (Pp 243; \$41.90.) Heidelberg: Springer-Verlag, 1983.

This book contains eight chapters written by members of leading laboratories involved with neural tissue transplantation research. As such it gives a comprehensive overview of the field. This last statement is given with some qualifications, however, as the material was presented at a neurosciences symposium in 1981 and research in the area has been moving at rapid pace. Nevertheless, the chapters are sufficiently complete to provide a good background to the area and to serve as a reference source.

In the introduction, Gopal Das gives an summary of the main conceptual and technical considerations underlying transplant procedures. His essay includes a historical background. It gives details of survival of grafts with respect to age of recipient, age of donor, characteristics of transplanted cells, features of the interface that develops between the host nervous system and the graft. It also discusses the relative merits of different graft techniques, that is solid vs suspension grafts, and provides definitions of what constitutes successful grafts.

The brain contains certain areas, matrix zones, of relatively undifferentiated cells, which can multiply and differentiate. Walter Kirsche describes features of these zones as they are found in different classes of vertebrates and he discusses their role in both normal development and in the regeneration of the nervous system after brain damage. Matrix zones have a special importance because they can facilitate the growth of other tissue and also because cells from matrix zones retain the ability to migrate and differentiate, characteristics which are essential for transplant success.

If transplants are to achieve adaptive functions within the host, transplanted cells must be able to send forth axons to connect

with host cells. Monica Oblinger and Gopal Das, using the cerebellum as the receptor site, describe different aspects of the connections made between transplants and host. They describe techniques of examining the interface, the effects of age of the host, the cellular reorganisation in the host site, and they contrast fibre growth patterns with patterns seen in normal development.

Transplants can also serve a tool to examine other experimental problems. Lawrence Kromer describes the use of transplants to examine the regenerative capacity of the adult central nervous system. Severed pathways in the central nervous system often do not regenerate, but transplants can promote regeneration, which suggests many possibilities for examination of the properties this tissue that allow it to provide a beneficial environment for regeneration. Among other procedures, descriptions of the effects of grafting neurons of major transmitter systems, including cholinergic, dopaminergic, noradrenergic, and serotonergic systems are described, particularly with respect to the effects they have when implanted into a damaged limbic system.

One of the most striking feature of nerve cells is their ability to take on a physical identity, which not only makes them recognisable but also must be essential to their functional roles. In the developing brain their maturing individuality does not occur in isolation but must be influenced by ambient events. Raymond Lund and Steven McLoon describe features of the retinal transplantation technique that makes it useful as a procedure for isolating the cells individual developmental goals from the constraints imposed on it by its neighbourhood. They describe research in which retina are taken from rat embryos and transplanted into the tectal midbrain visual area of immature and adult rats. The technique permits examination of such questions as whether the retina develops normally, whether it makes normal connections with the host brain, and how its connections compare with those of other types of grafts. Development seems to depend importantly on the type of tissue grafted; retinal are conservative with respect to their own development and the associations they make with the host, whereas tissue from the cortex may make a number of types of abnormal connections. Ake Seiger describes a somewhat different model system which has the advantages of allowing easy visualisation of graft consequences. Cells of the different central and peripheral monamine systems are grafted into the