Contemporary Clinical Neurophysiology (Supplement No. 34 to Electroencephalography and Clinical Neurophysiology) Edited by W. A. Cobb and H. Van Duijn. (Pp. 577; illustrated; price not stated.) Elsevier Scientific Publishing: Amsterdam. 1978.

This book comprises the invited lectures which formed the basis for individual contributions to the Round Tables and Symposia at the Ninth International Congress of Electroencephalography and Clinical Neurophysiology in Amsterdam in 1977. Three main topics are covered — Electroencephalography, a short section on Therapeutic Electrical Stimulation, and Electromyography. The former topic incorporates data processing and automatic reporting in clinical EEG; behavioural correlates of evoked potentials and slow potentials, attentiveness and consciousness in epilepsy and experimental models of epilepsy. The section on electromyography covers motor control, structure and function, central EMG, neuromuscular physiology and pathophysiology. The papers are in general short, informative, and clearly illustrated. In summary, the book is an excellent source of information on clinical neurophysiology.

ANNE P. MCGEORGE

Cerebral Motor Control in Man: Long Loop Mechanisms Progress in Neurophysiology, Volume 4. Edited by John E. Desmedt. (Pp. 392; illustrated; Sw fr 118.) S. Karger: Basel. 1978.

Starting with the observations of P. H. Hammond in 1964, there have been a number of papers on muscular responses to stretch or relaxation which indicate that the monosynaptic spinal stretch reflex is followed by at least two responses with latencies suggesting that they are also reflex, though it is difficult to dissociate the later responses from voluntary reactions. The timing of these responses, and their modification by local anatomical lesions, indicate that they are reflexes mediated by "long loops" traversing supraspinal parts of the nervous system. Correlation of the human studies with experimental work on primates suggests that one passes via parietal association cortex to pontine nuclei and thence to cerebellum, leaving by the dentate nucleus and so to the major motor outflow; another, ascending by spinocerebellar fibres and from sensory cortex to pontine nuclei,

leaves the cerebellum by the interpositus nucleus to red nucleus and reticular formation, possibly playing a role in holding a position against loads and in stopping a movement. Kornhuber has already suggested basal ganglia and cerebellar differences between ramp and ballistic movements. Some of the reports in this book reach contradictory conclusions. It is not feasible to abstract the different views but the interested reader should study the book carefully as it gathers together 22 excellent papers from the main workers in the field. Neurologists trained 30 years ago may have a sense of déjà vu with regard to many of the concepts, re-emphasised rather than newly discovered, and will see little merit in abandoning clinical terms for those of servo engineering, as suggested in one chapter, but the opportunity to time delays of responses traversing cortex and cerebellum promises new techniques for clinical neurophysiology and for the study of drug actions on the intact nervous system. Professor Desmedt is to be congratulated for this valuable compendium.

J. A. SIMPSON

Pathophysiology of Spinal Cord Trauma By J. L. Osterholm. (Pp. 212; illustrated; \$19.50.) Charles C. Thomas: Springfield, Illinois. 1978.

This is a monograph in the Bannerstone Division of American Lecture Series in Neurosurgery on the studies carried out since 1968 by Professor J. L. Osterholm and his colleagues at the Thomas Jefferson University, Philadelphia.

The spinal cord is very sensitive to mechanical trauma, not because its tissues are especially fragile since it is not common for even a major fracture dislocation to lacerate the cord, but because of a process termed necrotising haemorrhagic necrosis that starts in grey matter, and later spreads to white matter, and eventually to the entire cord.

The response of the cord to injury varies with time, force, the particular segment of cord injured, and the species of experimental animal used. This has inevitably produced conflicting reports in the literature. An experimental model that produces a standardised injury—morphological and biochemical—to the spinal cord was, therefore, required and subsequently established by

the author and his team.

There is evidence that blunt injury to the cord induces increased activity in the noradrenaline bulbospinal pathway and at the same time releases sufficient local noradrenaline to cause toxic effects, possibly mediated through the microcirculation. Current evidence, therefore, strongly suggests that cord damage is transmitter-mediated and raises the hope that the lesions may be either prevented or at least minimised by drug treatment.

The most disappointing aspect of this book is the relative lack of information about the physiology (function, metabolism, and blood flow) of the spinal cord. Considerable detail is given about the response of the cord to mechanical trauma and yet basic information about the response of the normal microcirculation to changes in blood gases, blood pressure, and various pharmacological agents in the preparations used by the authors is scanty. This inevitably means that some of the conclusions reached by the author are rather speculative. In spite of this the monograph is informative, and should be of interest to anyone concerned with injury to the spinal cord.

D. I. GRAHAM

The Pathogenesis of Hypertensive Encephalopathy By L. M. August.

(Pp. x+111; illustrated; DM68.00.) Acta Neurochirurgica, Supplement 2, Springer-Verlag: Vienna, New York. 1978.

Variation in the calibre of the pial vessels of animals with accelerated phase hypertension was first described in the mid 1950s. It was found that when the blood pressure became excessively high a pattern of alternate constriction and dilatation sometimes developed in the pial arterioles—the so-called "sausage-string" appearance. Further studies suggested that the narrowed segments were in "vasospasm" which in turn caused a reduction in the local cerebral blood flow and ultimately caused the symptoms and signs of hypertensive encephalopathy. It was the use of different methods by different investigators that led to the alternative hypothesis, namely that a high intraluminal pressure is the most likely cause of the encephalopathy.

This monograph describes a series of experiments using a closed window technique to study the reactivity of

the pial vessels, the development of brain "oedema", and changes in the intracranial and cerebral venous pressures during acute hypertension. Dr Auer, in common with other workers, found that severe induced hypertension causes cerebral arteriolar dilation, an increase in cerebral blood flow and dysfunction of the blood-brain barrier. There is, therefore, increasing, if not conclusive, evidence that forced dilatation and over-distension of the cerebral resistance vessels and cerebral "oedema" formation are the pathophysiological basis of hypertensive encephalopathy.

This treatise contains a useful and informative account of the past and present knowledge in this field, and summarises that clinical significance of the experimental results at the end. It is well illustrated with some coloured figures and cites most of the relevant literature. This book is highly recommended to those with an interest in the microcirculation of the brain.

D. I. GRAHAM

Low Back Disability Neurosurgical, Orthopaedic, and Radiological Symposium Edited by B. R. Selecki. (Pp. 198; illustrated; \$A25.00.) Australasian Medical Publishing: Glebe, NSW. 1978. In 1934 Mixter and Barr, by publishing their classic paper, opened the way to the rational treatment of patients suffering from low back pain and sciatica. Nearly half a century later the syndromes arising as a result of degenerative disease of the lumbar spine can still present difficulty in management. Attitudes of orthopaedic surgeons and neurosurgeons to these problems often differ, and it is in an attempt to unify the clinical approach, as well as to improve our understanding of them that this monograph has been written. The major part of the text is the responsibility of experienced surgeons, particularly interested in spinal disorders who are ably supported by contributions from neurologist, pathologist, and radiologist. There is a wide discussion on all aspects of low back disability ranging from experimental work, through the clinical features, to a comparison of treatment techniques and their results. The radiological chapter is quite outstanding though somewhat marred by the quality of the illustrations. Interesting is the little use made of water soluble contrast myelography

at the time of this symposium when in the United Kingdom it had become quite standard. In the clinical sections there is a wealth of important information—the appreciation of which is sometimes difficult because of the design of the plates and tables which accompany the text. These are, however, minor criticisms of what is otherwise a most helpful and interesting presentation of the subject. The conclusions in the final chapter are wholeheartedly endorsed, particularly those concerning the need to train surgeons specially to deal with spinal conditions—unfortunately in my view a concept unlikely to gain wide acceptance, or support, in this country.

J. A. RUSSELL

Regional Cerebral Blood Flow By H. J. Gelmers. (Pp. 96; illustrated; D.fl 60.00.) Van Gorcum: Assen. 1978.

This volume has all the marks of a published thesis. It deals principally with the author's experience of measurement of cerebral blood flow in 64 patients using the methods developed by Lassen and his colleagues in Copenhagen—that is, a multidetector system for extracranial detection of gamma radiation after intracarotid injection of xenon.

The book is sadly out of date—for instance, there are only a handful of references dating after 1975. It might be of mild interest to those using similar methods, but the original papers by Lassen's group and by many other groups would be far more valuable and comprehensive. Unfortunately, there is little of scientific interest or clinical value to either the general reader or the expert in the cerebral circulation.

A. MURRAY HARPER

Sleep Disorders. Diagnosis and Treatment Edited by Robert Williams and Ismet Karacan. (Pp. 417; illustrated; £22.50.) John Wiley and Sons: Chichester. 1978.

This American volume is essentially a "state of the art" review of a number of sleep problems mainly from the point of view of clinicians involved in sleep research. The authors are in the main very eminent in the areas they have chosen to review, and overall it is a credit to the editors that the style is so harmonious although there are surprising omissions in some areas.

The book is divided into three parts:

(1) primary disorders consisting of insomnia, narcolepsy, and sleep apnoea syndromes; (2) secondary sleep disorders—in depressive illnesses and major psychoses including organic brain disease and in most medical and surgical conditions; (3) the use of the sleep laboratory in the investigation and treatment of impotence.

Inevitably, there is a great variability in the quality of the available data leading to some very full review chapters while other chapters consist of limited and recent experiments. However, it is a credit to the authors that the experimental data are explicitly stated so that generalisations are largely avoided. The main effect I found was a feeling of dissatisfaction with the apparent gaps in many areas but this is in its way a stimulant to research. In other ways the book presents a coming of age of sleep research confirming that there are now sufficient basic data on normal sleep to allow research to move towards the clinical fields increasingly. After all many of our patients die in their sleep!

I was particularly pleased to see a chapter discussing the behavioural approach in the treatment of insomnia which, if sufficiently successful on a large scale, would allow alternative to hypnotics.

The main snag in the volume is the cost which I think will prevent many individuals from using the book to advantage, but I must commend it to all interested readers.

J. I. EVAN

Tay-Sachs Disease: Screening and Prevention Edited by Michael M. Kaback. (Pp. 433; illustrated; \$45.00.) Alan R. Liss: New York. 1977.

This book contains papers given at the first international conference on Tay-Sachs Disease which was held in 1977 together with the discussions printed verbatim. In scope it ranges from the biochemistry and molecular biology to the religious significance particularly to the Jewish Community. The main emphasis is on the practicalities of heterozygote detection, antenatal diagnosis, and the impact of such programmes on communities and individual families. Experience is related from the United States, Canada, Israel, the UK, and South Africa. The book contains