malian clock is not nearly so accurate, but can continuously correct internal and external time. The conventional view expressed in this stimulating book is that the pineal conveys its message exclusively via melatonin, although recently it has been shown that in some species pinealocytes send nerve axon-like processes to neighbouring parts of the brain, and in future it may be necessary to consider neuronal as well as hormonal control of the biological clock by the pineal.

A great deal is known about the physiological role of the pineal and melatonin in animals, much less in man. The book starts with a brilliant review by RV Short of *Time, the Universe—and the Emperor penguin*. This bird has an incredible life history, in one of the most extreme environments in the world, and its survival is due to the correct timing of a host of physiological responses. The pineal is of particular importance in the onset of puberty and control of oestrus in seasonally breeding animals, and melatonin is now of commercial importance on both sheep and deer farms.

This symposium is mainly about how the light message, via the retina and pineal, influences the testis and the ovary. Many strange species, including Japanese quail, Iguanid lizards, Syrian, Turkish and Djungarian hamsters, as well as house sparrows, are described, and mechanisms considered whereby the photoperiod modulates the ability of oestradiol to suppress pituitary secretion of luteinizing hormone.

The pineal in man, not a seasonal breeder, is a much more difficult topic and, as stressed by Arendt, there is no good evidence for a major physiological role of the human gland. This notwithstanding, recent demonstrations of major changes in melatonin rhythms with human puberty, investigation of melatonin as a possible hypnotic, studies of the effect of bright light pulses in depressed patients, and the use of melatonin by pilots to influence jet-lag, are topics of current interest. At present, no clear conclusions about these subjects are possible, but it is useful to have the critical evaluation in this volume.

The book is well produced, with good illustrations, an accurate index, and careful editing by David Everest and Sarah Clark. It is a credit to Vincent Marks and Josephine Arendt, who proposed the symposium, and who played a major part in the development of melatonin assays. The volume is mainly of specialist interest, but investigation of disorders of human timekeeping is dependent on many of the ideas discussed here. Highly recommended.

JD PARKES

Proceedings of the Fourth World Congress on Pain, Seattle. (*Advances in Pain Research & Therapy Vol 9.*) Edited by Howard L Fields, Ronald Dubner and Fernando Cervero. (Pp 951; \$153.00.) New York: Raven Press, 1985.

The study of pain is a particularly multidisciplinary area of medicine and keeping up-to-date is therefore especially difficult. It is a hopeless task attempting to be familiar with advances in fields as disparate as neurophysiology, neurochemistry, neurology, surgery, anaesthesia, and psychiatry, and one is therefore thankful to the International Association for the Study of Pain under whose auspices have appeared the journal *Pain* with its periodic references to the current literature, and books such as the present *Advances in Pain Research and Therapy*.

This book comprises selected papers from the Proceedings of the Fourth World Congress on Pain held in Seattle in 1984, and as with previous volumes in this series, it is immaculately and expensively produced by Raven Press. The book is of course only as good as the papers delivered at the symposium, and there are some very good papers indeed. The individual styles of the contributors I think enhance rather than detract from the overall presentation, and certainly make more interesting reading. Since there is little attempt at cohesion and so many topics are covered, whether the reader will find what he is looking for may be unpredictable, and I suspect the book will be mainly used for browsing or specific reference purposes, especially in view of its high price.

Readers of this book, however, will be rewarded by some outstanding contributions. A personal selection would include Perl's masterly introductory overview "Unraveling the story of pain", Basbaum's update on cytochemistry of the dorsal horn, Willis' contribution on thalamocortical mechanisms, and a thoughtful and very up-to-date chapter on evoked cerebral potentials and pain by Bromm. The chapter on mechanisms of neuropathic pain by Ochoa and colleagues has the great bonus of a particularly lucid as well as entertaining style ("Anyone who claims to understand how the sympathetic system influences pain is probably mistaken or has chosen to explain only some aspects of a complex issue"), and neurologists will be as intrigued as surgeons that over the past five years Rosomoff's unit has managed over 1000 patients with demonstrated intraspinal compressive lesions like herniated disks or bony stenosis without

surgical removal; despite leaving the space-occupying lesion in situ, management of the peripheral musculoskeletal problems has resulted in restoration of function even at long-term follow-up of up to seven years, and good relief of pain.

This book undoubtedly records the state of the art in 1984, and fully justifies its title. Contributors, editors and publisher are to be congratulated.

GD SCHOTT

McAlpine's Multiple Sclerosis. Edited by WB Matthews, ED Acheson, JR Batchelor, RO Weller. (Pp 358; £32.00.) Edinburgh: Churchill Livingstone, 1985.

Although there is very little of McAlpine remaining in this, the fourth edition of *Multiple Sclerosis*, the editors do explain that they continue to use his name in the title in order to honour his enthusiasm for the creation of the original *Multiple Sclerosis* published in 1959 together with Compston and Lumsden.

This book has become the definitive work on multiple sclerosis. The editors have arranged the script into three sections. The first, by Donald Aitchison is concerned with the epidemiology of the disease. Brian Matthews discusses the clinical aspects of multiple sclerosis and finally the immunological and pathological aspects are shared by Batchelor and Roy Weller.

The epidemiology of multiple sclerosis has fascinated neurologists for many years and Aitchison takes us through the development of our understanding of its epidemiology and also outlines the known epidemiological facts which point so clearly to pathogenesis.

Brian Matthews' writings on the clinical aspects of the disease are masterly and here any student of the disorder will find answers to many of the questions he may have posed in his clinical practice. The common and unusual presentations of the disorder are clearly described and although Matthews modestly states that "the differential diagnosis of multiple sclerosis obviously covers a large field in clinical neurology and cannot be covered completely in a brief chapter", he has almost achieved just that.

A chapter follows on the laboratory diagnosis of the disease with a clearly written review of the value of evoked potential studies and a critical but very fair discussion of the recent controversy over the possibility of

Book reviews

a specific test involving cell motility in an electrical field.

Following a description of the pathophysiology of the disorder, there is a review of treatment which includes a consideration of immunotherapy, plasmapheresis, dietary treatments, anti-infective treatment and the recently controversial use of hyperbaric oxygen. The clinical trials involved in assessing these various treatments are critically reviewed and Matthews considers the means of managing specific symptoms arising in the course of the disease, that is, psychological problems, tremor, spasticity and others. The book finishes with two elegant chapters on current views of the immunological and the genetic aspects of the disorder and the neuropathology of the disease.

Beautifully produced and well-indexed this volume is essential for all those involved in clinical neurology and with the investigation of the problems of multiple sclerosis. Hopefully in years to come further editions will keep us equally up to date with developments and an improved understanding of multiple sclerosis but here with the 1985 volume we have as good a review of the problem as exists in the world literature.

JB FOSTER

chemistry involved in cerebral artery spasm.

In each of the remaining sections there are some very good chapters on practical problems such as trigeminal neuralgia recurring after treatment and adjacent chapters on different ways to manage tumours of the pineal region. The section on orbital tumours gives an over-view of this corner of neurosurgery and the last four chapters in the hydrocephalus section address in a pragmatic way the recurring problems concerning hydrocephalus.

I have found this series of books to be of great value, as they represent a form of recently updated neurosurgical textbook. This volume is no exception and if it is picked up by any neurosurgeon in training, I suspect he would feel a strong compulsion to read it from cover to cover. More experienced neurosurgeons may not agree with everything that is said, but will find the other chap's point of view put forward forcefully and in a clear manner.

RA JOHNSTON

Principles of Neurologic Diagnosis. By Erwin B Montgomery, Michael Wall, Victor W Henderson. (Pp 286; £13.70.) Edinburgh: Churchill Livingstone, 1985.

This American book provides a welcome change from the usual textbooks in which a description of neuro-anatomy followed by disorders of the various neurological systems. There are similarities with *Practical Neurology*, by WB Matthews, which is a gem. Here, chapter headings are entitled, "Right-sided Weakness" and "Left Gaze Paresis", "Galactorrhea and Double Vision", "Sudden Difficulty Speaking". The approach is one of short clinical presentations of typical cases and a logical thinking-aloud of the thought process involved in reaching an anatomical diagnosis. The authors are to be congratulated on the simplicity of the text and the simple but adequate line drawings which are always on the page facing the relevant text. This makes it easy to assimilate the anatomical pathways. Many drawings were repeated several times in the book. They described the features which would lead one, for example, to conclude that the corticospinal tract was involved in a lesion, for example, brisk jerks and a positive Babinski sign, but as with many neurological texts, they do not adequately describe the various patterns of weakness typical of, in this case, a pyramidal

lesion but in others a cortical lesion; or, in others, perhaps a root distribution. There are several unfortunate errors in the text, which should have been spotted in proof reading and may perhaps confuse the inexperienced reader. There are some left/right confusions as well, and a left homonymous field defect is clearly demonstrated when a right one should have been shown (p.127). The section on pharmacological tests on the pupils in Horner's syndrome is not a model of clarity. The anatomy, however, in relation to language disorders, lacunar syndromes, and the significance of doll's eye movements were particularly well covered. There were some inconsistencies in nomenclature, for example, Cheyne Stoke's respiration was defined in detail, yet words such as diencephalon, corona radiata and anisocoria were introduced without any explanation.

Although the authors decry the use of rote learning, it becomes clear that in cases involving the peripheral nervous system it would be impossible to work out the anatomy without the extensive innervation charts provided.

In general, I think this is a book that should be thoroughly recommended for medical students and I suspect it will find its way onto a lot of residents' and consultants' shelves. The frequent anatomical drawings are particularly valuable.

With a little attention to detail in the text, I would recommend this warmly and at £13.50 it represents a welcome change from the expensive text books that are usually presented.

JE REES

Clinical Neurosurgery. (Congress of Neurological Surgeons Vol 32.) Editor-in-Chief: John R Little. (Pp 680; £54.00.) Baltimore: Williams & Wilkins, 1985.

This book is the published proceedings of the 1984 Meeting of the Congress of Neurological Surgeons of America, and comprises 660 pages divided into seven sections. The first section contains the presentations by Dr Rizzoli who was the honoured guest and he gives a fascinating and first-hand account of Dr Walter Dandy's contribution to neurosurgery. There is also an interesting chapter on "Dandy's brain team" and the life of a neurosurgical resident at that time.

There are sections on cerebro-vascular surgery, cerebello-pontine angle tumours, trigeminal neuralgia, pineal tumours, orbital tumours and hydrocephalus. Most of the chapters have a strong clinical bias and are generally well-written and adequately illustrated. There is a very good chapter on cerebral arterial spasm which, for me at any rate, encapsulates the scientific knowledge to date behind this serious neurosurgical problem, especially for those without a detailed background in the intricate bio-

Neurobiology: Molecular Biological Approaches to Understanding Neuronal Function and Development. (UCLA Symposia on Molecular and Cellular Biology. New Series Vol 24.) Edited by Paul O'Lague. (Pp 212; £52.00.) New York: Alan R Liss Inc, 1985.

The work is a record of one of the UCLA Symposia on Molecular and Cellular Biology which were established in 1972, to provide an interdisciplinary forum for scientists involved in new developments in biological research. The present volume presents new developments in the molecular biological approach to understanding neuronal function and development.

The book contains a series of detailed papers dealing with cytoskeletal archi-