Matters arising

amplitude interferential pattern in all muscles of lower limbs, especially in tibialis anterior. Many polyphasic potentials were recorded in all examined muscles. In the arms we also found signs of myopathic involvement, with predominant distal distribution, but they were of lesser degree than in the legs. Peripheral nerves evaluation disclosed no pathological changes in the arms, but showed a decrease in the motor conduction velocity in the peroneal nerve bilaterally (42 and 43 m/s, normal 49.5, SD 3.9). A neuromuscular biopsy was performed. Sural nerve biopsy revealed an increased number of clusters of small myelinated fibres, with a density of myelinated fibres at the lower limit of normal values (5850/mm²) and a shift to the left of the histogram of myelinated fibres, indicating an abnormal prevalence of small ones. There were no other abnormalities on electron microscopy. Biceps brachii muscular biopsy was consistent with a primary muscular disease. Endo- and perimysial connective tissues were markedly increased. Nuclear centralisation was present in some fibres, as well as fibre splitting and abnormal size variability. Inflammatory reactions were lacking. Histo-

chemistry (ATPase 9.4-4.6-4.3, NADH, PAS, Oil Red O, acid phosphatase) was normal. Some subsarcolemmal myeloid bodies but no vacuoles were seen on electron microscopy.² Our findings are in agreement with the data of Orrico *et al.*,¹ which suggest that distal myopathy could lead to generalised muscular involvement. This fact is more evident if patients are examined long after the onset of the disease, as in our case. The histological features of proximal muscular involvement are much more prominent than are suggested by the clinical evidence. We also found mild signs of peripheral neuropathy, and this finding was already described by Edstrom³ and by Stalberg and Ekstedt,⁴ but not confirmed by Markesbery *et al.*⁵ These morphological differences are probably due to the existence of different variants of the disease. In our case EMG evidence of peripheral nerves involvement were present since the earliest stage of the disease, so that they contributed to the initial misdiagnosis.

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Book reviews

Handbook of Parkinson's Disease. Edited by William C Koller. (Pp 520; \$79.75 (USA and Canada) \$95.50 (all others).) New York: Marcel Dekker, 1987.

It is a tribute to the progress achieved by modern research that the last decade has seen such a glut of symposia and proceedings devoted to Parkinson's disease and its treatment. But each of these publications is ephemeral and one suspects is of limited value to clinicians and neuroscientists. Perhaps daunted by the speed of progress and the fear of being quickly out of date writers have yielded few textbooks or handbooks—which by nature should be more comprehensive, yet more durable. Professor Koller of Loyola University, Maywood, Illinois, has braved this challenge, armed with contributions from neuroscientists, many well known, from the States and a few from Europe and Australia.

The result is a remarkably complete and detailed analysis of Parkinson's disease and of related topics, encompassed in 26 chapters and 475 pages. All essential aspects of the basic sciences and animal models are

covered; clinical sections embrace the mental state, autonomic disorders, dysarthria and classification. There are eight chapters on treatment describing all the drugs, pharmacology and a valuable section on stereotactic surgery which may be underused in the UK. The topical brain grafting is not neglected. Rehabilitation and psychosocial aspects are dealt with. And, there is a useful appendix listing in detail the clinical scales, disability and functional staging of the disease, lists of drugs used, their dose and cost; the addresses of national patient help organisations are appended.

I have only one grouse: the exhaustive references are in places chaotic—chapter 17 omits paper titles; chapters 5, 13, 15 and 26 list authors alphabetically whilst others are in numerical order.

Considering the enormity of the task confronted, Koller is to be congratulated in producing a most useful handbook, filled with detail and expertise. It is unfair to pick out individual contributions, but it would be even more unfair not to mention a superb and beautifully illustrated History of Parkinson's disease by Kenneth Tyler which sets such a high tone for the succeeding chapters. There are controversial statements and emphases which may provoke some

readers, but overall I would strongly recommend this book to all practising neurologists, trainees, and to investigators of Parkinson's disease.

JMS PEARCE

Physiology and Pathophysiology of the Cerebrospinal Fluid. By Hugh Davson, Keasley Welch, Malcolm B Segal. (Pp 1010; £120.00.) Edinburgh: Churchill Livingstone, 1986.

Davson's work and writings have inspired a wide spectrum of neuroscientists, basic and clinical, for almost half a century. *The Physiology of the Ocular and Cerebrospinal Fluid* was published in 1956 and subsequently expanded as *Physiology of the Cerebrospinal Fluid* in 1967. That book provided, for me, a voyage of genuine intellectual excitement both by its elucidation of the principles and by its idiosyncratic exposure of treasured observations long buried in the literature. My pleasure at being asked to review this third edition would have been all the greater had the invitation

arrived a week before instead of after purchase of my own copy. After many false starts it was only whilst in the shadows of our Lady of Rocamadour that I managed to come to grips with this formidable task, like one of the pilgrims come to do penance before the Black Virgin. It took many hours before it dawned that it was not simply my tired brain that could not cope but that the book itself was not as well written as it should have been. The basic problem is that the book started life as a monograph and has just "grown", without the radical type of restructuring required to become an efficient and effective reference book, with over 4000 references.

There are passages where the authors must have skimmed through a pile of reprints, dictated their impressions but failed subsequently to reread and integrate the new knowledge into the old fabric. Since 1967, the world of blood brain barrier and cerebrospinal fluid has merged with that of the cerebral circulation, with considerable unification of the mathematical modelling and experimental techniques involved as revealed in Rapoport's *Blood Brain Barrier in Physiology and Medicine* (1976). Unfortunately the same opportunity has not been grasped in this third edition of "Davson" and there is infuriating repetition and piecemeal treatment of some subjects, for example water permeability. There is overlap between chapters so that a reader would have to know the book quite well in order to know where to go for specific bits of information. Rumour hath it that the manuscript was delayed before publication which explains why publications of 1987 are not in the reference list.

The first half of the book reproduces much from 1967, with appropriate updates. Chapter 1 presents an introduction to cerebrovascular anatomy; it is less than systematic and does not highlight features of physiological significance. There is no discussion of innervation of cerebral blood vessels, either extrinsic or intrinsic, no references to modern literature, no critical discussion of the problems of measuring CSF volumes in man or animals nor mention of Weller's re-examination of the components of the human cerebrospinal fluid pathways.

Chapter 2 is a memorable exposition of the principles required to determine the chemical composition and secretory nature of the cerebrospinal fluid. A quantitative description of the blood cerebrospinal fluid barrier follows in chapter 3 with glimpses of Davson's humour—"the use of clearance in permeability studies rather tends to confuse even the initiated". Unfortunately the dis-

crepancy between figure and text when describing the rate of penetration of radioactive sodium from blood into lateral ventricle, cisterna magna and lumbar sac is faithfully continued from the 1967 volume. Some phenomenological and methodological aspects of the blood brain barrier are described in chapter 4 but the treatment is a little discursive. The reader has to wait until chapter 5 to learn, in the middle of morphological aspects of the various barriers, how Crone has used electrical impedance across the capillary wall to estimate ionic permeability. This chapter is a much expanded and most valuable analysis of the functional histology of the various barriers and includes descriptions of special regions of the brain such as the circumventricular organs. Some of the electron micrographs are displayed with no guidance to the details of what is shown or where. There is a lack of discussion both of the possible role of the glycocalyx and of astrocytic effects on the blood brain barrier. The controversy over the mechanism of hypersmotic effects on barrier function, whether via opening of tight junctions or via enhancement of vesicular transport, is not examined in detail. Some of the footnotes require editorial control—some are difficult to understand but at least serve to stimulate the reader to read the original article; others repeat what is already elsewhere in the text. Where there are areas of anatomical or histological controversy, terms such as mesothelial, leptomeningeal and glial elements are not always defined, despite the fact that the distinction between them is what apparently has proved controversial.

The physiology of secretion of the cerebrospinal fluid is presented in chapter 6 followed by 200 pages of special aspects of the lower brain barrier and blood brain CSF relations. The observations reported are fascinating but make for rather laboured reading.

The acid-base characteristics of the cerebrospinal fluid are reviewed in chapter 9, which is followed by a delightful chapter on the drainage mechanism of cerebrospinal fluid.

The last half of the book is concerned with pathological conditions and includes an account of cerebral oedema; more lucid and concise accounts are available. The description of CSF proteins is exhaustive and is followed by a new chapter on ontogeny and comparative physiology of the cerebrospinal fluid. The chapter on Cerebrospinal Fluid Pressure includes some valuable old material but the inclusion of Kedem and Katchalsky's type of thermodynamics is not really very helpful in the middle of what is

otherwise a clinically orientated chapter. The last three chapters are devoted to hydrocephalus and include its general features and descriptions of both prenatally determined and acquired forms. It is difficult to know for whom these chapters are designed—if they are for a basic scientist, then a simpler and more logical classification of the causes could have been provided. There are some interesting tidbits in these chapters for experienced clinicians but they do not form a comprehensive account of hydrocephalus.

This is a formidable work and I am very much the wiser for having persevered to the end. However I would almost certainly not have read it had I not had to produce a review and this is the book's greatest problem. Who now has the time to read it? Which individuals can afford it? The tragedy in 1987 is that, on both sides of the Atlantic, pressures on resources and in particular time, are such that works like this will go under-read. It might appear churlish and disloyal to be a little critical of Davson's new classic, but I am mindful that of the many legacies owed to him, sycophancy is not one.

JD PICKARD

The Psychology of Pain. Edited by Richard A. Sternbach. (Pp 256; \$34.00.) New York: Raven Press, 1986.

The first edition of this book proved very successful and this much revised second edition is likely to be equally popular. The title is to some extent misleading, since basic neurophysiology and neuropharmacology are also covered in several of the chapters. In addition to strictly psychological aspects of pain. In the opening chapter, Melzack provides a masterly brief review of current neurophysiological knowledge about mechanisms of acute and chronic pain, including neuropathic pain and deafferentation states. He goes on to differentiate the sensory discriminative from the motivational-affective aspects of pain and discusses the evidence for neocortical or cortical processes in exerting control over both of these. Frenk *et al* describe centrifugal inhibitory mechanisms with particular emphasis on attempting to understand the behavioural stresses which are capable of activating these systems. At a time when electrophysiological recordings in animals have repeatedly demonstrated the potency of such systems, it is a sobering thought that we understand almost nothing

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