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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about the activation and importance of descending control mechanisms in chronic pain in man.

Fordyce considers learning processes in pain, and Merskey lucidly reviews the complex relationships of pain complaints to psychiatric disease. There are chapters on the behavioural measurement of pain, outlining the many difficulties and pitfalls of the psychophysical methods involved (Wolf), and psychodynamic aspects of pain including conversion reaction, hypochondriacal reaction and psychotic depression (Pilowsky). Hilgard reviews the role of hypnosis in pain treatment, tackling some of the major criticisms of the methods and results of this form of treatment. Finally, Sternbach considers some wider aspects, including ethnic differences in expression of pain, psychogenic pain, the economic consequences of chronic pain, and the relevance of litigation. The major forms of psychological treatment currently in use for chronic pain are described, including relaxation therapy, biofeedback, cognitive and behavioural methods. Sternbach ends with the observation that there have been very few studies of the efficacy of any psychological methods of treatment.

All too often, chronic pain is mechanistically interpreted in terms of nerve impulses and chemical changes. This book provides a wider framework and a realistic clinical perspective. It is recommended reading for all those dealing with patients with chronic intractable pain and it serves as an excellent general introduction of the subject of chronic pain.

JW SCADDING

Ultrasonic Diagnosis of Cerebrovascular Disease. Edited by M P Spencer. (Pp 306; £57.50.) Dordrecht: Kluwer Academic, 1987.

There was initially some concern that the introduction of intravenous digital subtraction angiography would make ultrasound examination of the extracranial and cerebral vessels obsolete. However, this has not turned out to be the case and hospitals wishing to investigate vascular problems should have access to an ultrasound department.

This excellent book gives a state of the art presentation of Doppler evaluation and ultrasound imaging of the carotid and vertebral arteries and in addition of the transcranial Doppler technique. A few of

the chapters are rather historical and the techniques described rarely or no longer used in departments where more modern techniques are available, for example Duplex scanning. However, even these chapters will provide useful background for someone wishing to become acquainted with non-invasive assessment of the cerebral vessels.

Many multi-author books suffer from a lack of uniformity and purpose but the subjects covered by the various chapters are well chosen and there is a pleasing uniformity on which the editor should be congratulated. The book is clearly written and well illustrated and should be available in any hospital with an ultrasound department and will prove an ideal introduction and reference book to anyone interested in non-invasive assessment of cerebral vessels.

DJ THOMAS

Cellular and Molecular Basis of Cholinergic Function. (*Ellis Horwood Series in Biomedicine.*) Edited by M J Dowdall and J N Hawthorne. (Pp 941; DM 340.) Weinheim: VCH Verlagsgesellschaft mbH, 1987.

Every 3 years sees a world-wide gathering of those interested in the cholinergic systems. This volume records the proceedings of the sixth such meeting held in Buxton, Derbyshire in May 1986. It consists of approximately 1000 pages divided into over 100 chapters which cover every aspect of cholinergic function. This particular volume is dedicated to the memory of Dr Brian Ansell who contributed much to this area but who sadly died after the Buxton meeting.

In the initial chapter Professor Wilhelm Feldberg reflects on the discoveries of major importance made by himself and others in the 1930's and which were largely responsible for the current interest that exists in cholinergic systems. There follows a series of 23 chapters devoted to the characterisation of cholinergic receptors and their second messenger systems. The important issues of receptor classification and purification are particularly emphasised. In a subsequent section detailed consideration is given to acetylcholine release, the functional properties of synaptic vesicles, the synthesis of acetylcholine and the regulation of cholinergic neurons by trophic factors and other regulatory molecules. The final series of chapters cover functional changes in cholinergic transmission in patho-

physiological conditions. Initially, the actions of a variety of neurotoxins are described since they have contributed enormously to the study of cholinergic systems. The focus of the book then turns to the effect of aging and diet on cholinergic function, disorders of neuromuscular transmission and Alzheimer's disease. There is also a very mixed section on the action of lithium and other psychotropic drugs which seems out of place.

Clearly, there is an enormous amount of data contained within this volume. The editors and publishers are to be congratulated in publishing this volume so soon after the meeting. As such, it provides an up-to-date account of cholinergic research. The chapters do, however, vary enormously in quality and depth of coverage. Some are highly detailed providing a state of the art appraisal of important areas. Others are so short and superficial as to be of no use to the reader. Whether this reflects the space allocated to different topics or the differing views of authors towards the conference proceedings is not clear. It is pleasing that this is a typeset volume and at least looks homogenous as opposed to the camera-ready volumes which so often follow meetings and which allow editors virtually no editorial intervention.

Certainly this will be a highly quoted reference volume until the next triennial meeting of the group. The presentation of the book overall is good. I noted some mistakes in indexing and the placement of running titles. The print quality varied in the copy sent for review. It is a volume many will find useful but unfortunately not one many individuals will be able to afford. At £110 it will stretch the budgets of many librarians.

P JENNER

Multiple Sclerosis, Immunological, Diagnostic and therapeutic aspects. *Current Problems in Neurology 3.* Edited by F Clifford Rose and Rosemary Jones. (Pp 260; £26.00) London: John Libbey & Co Ltd, 1987.

This volume is based on a symposium supported in the autumn of 1986 by the Association for Research into Multiple Sclerosis. It contains 33 contributions covering selected aspects on the immunologic diagnostic and therapeutic features of the disease. These naturally reflect and express the interests and enthusiasms of the many individuals and teams involved and not all of the ideas expressed would likely have been found