

Two sections were devoted to biochemistry and immunology; the principal subjects here were the structure and behaviour of the myelin protein and the electrophoretic analysis of the cerebrospinal fluid protein. In the section on epidemiology the contributors dealt with the incidence of multiple sclerosis among immigrants from high to low risk areas in the world.

These are subjects which are of the greatest interest to neurologists and their presentation in a form which can be digested at leisure is especially welcome.

In the style of such symposia, the discussion after each paper is reprinted. What may have been enjoyable and instructive at the time does not reproduce well in print and some of the participants appear to have been distinctly petulant. A brief summary or comment by the session chairmen might have been more effective. The editors and publishers must be congratulated on producing this account of an interesting meeting so promptly.

IVAN T. DRAPER

MUSCLES—TESTING AND FUNCTION. 2nd ed. By H. O. Kendall, P. Florence Kendall, and Gladys E. Wadsworth. (Pp. 284; illustrated; £9.00.) Churchill Livingstone: Edinburgh. 1972.

No extensive review of this type of book is required, but it is a pleasure to draw attention to an unusually good book on the testing of muscle function. Photographs of human muscles in action are excellent, well produced, and show what is intended and no more. They are accompanied by unusually lucid drawings and a very adequate though brief text, which includes useful hints on isolating the muscle under test as well as sufficient anatomical information to satisfy all clinical requirements. Many of the manoeuvres were unfamiliar to me and will be particularly valuable in the EMG laboratory. Important errors in testing some muscles are illustrated. Terminology is according to the third edition of *Nomina Anatomica*. The authors make modest claims for the book, but this is one to keep and use long after more pretentious books have been discarded.

J. A. SIMPSON

ANALYSIS OF BIOGENIC AMINES AND THEIR RELATED ENZYMES Edited by David Glick. (Pp. 350; illustrated; £8.25.) Wiley: New York. 1971.

This is a supplement in the series *Methods of Biochemical Analysis*. Since its biogenic amines include acetylcholine the title may be, if not inaccurate, at least incomplete but the likelihood of misunderstanding is small, so accustomed have we become to grouping these chemical transmitter substances as a distinct entity. The book deals with the measurement

of catecholamines, acetylcholine, serotonin, and histamine; their synthetic and degradative enzymes and their metabolites. Each chapter is written by a separate author but the imbalance inevitable with such a treatment is of little consequence since the book is not intended to be read in its entirety. This is essentially a 'Methods' book for workers wishing to measure one or other of these substances. For such, this book will be invaluable. It offers a selective, critical, and up-to-date description of the techniques available, an extended description of those used by the author with practical information on the likely sources of difficulty, and how to overcome these. A particularly welcome feature is the extensive bibliography.

In recent years interest in these transmitters has extended far beyond the limits of the neurophysiologist, neuropharmacologist, and biochemist. In medicine generally, and particularly in psychiatry, neurology, and anaesthesia, explanations of disease and of drug action are now possible in terms of these transmitters. For the new recruits this has brought to the field there could be no better introduction than the appropriate chapters of this book.

J. S. GILLESPIE

TREMORS AND TREMOROGENIC AGENTS By R. W. Brimblecombe and R. M. Pinder. (Pp. 196; illustrated; £5.) Scientifica: Bristol. 1972.

In the first third of this monograph the authors, one a neuropharmacologist, the other a medicinal chemist, review the definition, measurement and physiology of tremor. The origins of physiological tremor and tremor due to extrapyramidal and cerebellar disease are discussed, but 'although a large amount of information is now available, it is still not possible to make any categorical statements concerning the precise cause of the tremors'. Although physiological tremor is attributed to oscillation in the stretch-reflex servo-loop, no mention is made of the effects of vision or the introduction of visual delays on this phenomenon. In the remaining two-thirds of the book the authors expand at length on their own field of the pharmacology of substances that produce tremor. They attempt to classify the large number of known tremorogenic substances into those acting on cholinergic brain mechanisms (muscarinic and nicotinic agonists and anticholinesterases) and those acting by altering brain amines (neuroleptics, phenethylamines and indoles). In doing so they follow the presently fashionable concept of Parkinsonism being the result of imbalance between central cholinergic and aminergic function, and include a chapter on the biochemistry of Parkinson's disease. Although using this concept as a framework, the authors do not con-

fine themselves rigidly to it; they present a carefully balanced account of the known pharmacological effects of each drug, and are at pains not to over-emphasize those actions that fit in with the general notion. Finally, the authors briefly discuss the drugs currently used to treat tremor.

No similar comprehensive contemporary monograph on tremor exists and this book will serve as a useful reference to the many scientists who have tried to unravel the mystery of tremor. However, it is more a progress report than a definitive work, for, as the authors conclude, 'It has become increasingly clear during the preparation of this monograph that any attempt to draw generalised conclusions concerning tremor, whether normal or disease—or drug-induced, is doomed to failure'. Future work, helped and perhaps prompted by this book, may allow the authors to modify this conclusion.

C. D. MARSDEN

**ESSENTIALS OF THE NEUROLOGICAL EXAMINATION** By Bernard J. Alpers, and Elliott L. Mancall. (Pp. 173; illustrated; £2.50.) Blackwell Scientific Publications: Oxford; and Davis: Philadelphia. 1971.

This is in general a good book, well and clearly written, and by American standards good value for money. Despite the fact that according to the authors it has been reduced to the bare essentials of neurological examination, it is very comprehensive. I can make only minor criticisms: no mention is made of Beever's sign, despite long lists containing some less valuable signs and reflexes. The differences between voluntary and reflex lateral gaze paralysis is not clearly described. In a book of this size and nature no mention is made of tumour diagnosis and I could find no reference to false localizing signs. Twelve pages are devoted to aphasia and associated phenomena, but the brain-stem reticular substance is not mentioned once. The positive signs of hysteria deserve a fuller account.

A valuable bench book for the wards, but possibly too comprehensive for the undergraduate student.

J. H. D. MILLAR

**CEREBRAL BLOOD FLOW** Edited by J. S. Meyer and J. P. Schadé. (Pp. 437; illustrated; ca. \$32.75.) Elsevier: Amsterdam. 1972.

A competition for the least helpful book on the cerebral circulation would be a close run race these days. Many have been conference proceedings with all the limitations which these impose on the composition of a coherent account of any subject. But this book was planned by two editors, who invited contributors to write on specific topics. If the editors had a plan in their minds they have covered up their tracks skilfully, and as they do not even write a pre-

face they are not tempted to give away any clues. There are chapters on related topics which present different, and sometimes conflicting, views, but such chapters do not even appear beside each other. The book begins with two idiosyncratic methods of measuring blood flow, one from Japan and one from Bulgaria; as one of these authors has 14 references and the other 27 references to himself, each is obviously advancing a rather personal view. Other fringe methods are described, but nowhere do the editors attempt to put this complex subject in perspective. Scattered through the book are animal studies and clinical investigations of either normal or abnormal blood flow, in between random eruptions of pure methodology. There are a few good chapters, but their authors must be embarrassed to find the context in which they appear. After about a decade of measuring cerebral blood flow a critical appraisal of the state of the art is badly needed. It is a pity that the effort and energy of so many in this field was wasted on this disorganized book, and the opportunity lost for a responsible stocktaking.

BRYAN JENNETT

**THE FORMATION OF NERVE CONNECTIONS** By R. M. Gaze. (Pp. 288; illustrated; £4.) Academic Press: London. 1970.

One must admire the courage of an author who tackles a central problem of neurobiology at a time when the jigsaw will not fall into place. It has taken a long time to review because it is extremely difficult to carry the argument(s) marshalled from one short sampling period to the next because Dr. Gaze starts out with one theory, follows it to the point of failure, and then abandons it to start anew. Drawing his evidence from the innervation of muscle, skin, and eye, the author examines the connections between neurones. Are they predetermined genetically or are they induced by functional requirements on a chemo-affinity basis? There may be no simple answer, both mechanisms seem to occur in the nervous system. If the conclusions hint at a neurological indeterminacy principle this book will be an invaluable guide to strategy for future experimenters.

J. A. SIMPSON

**ASPECTS OF THE EPIDEMIOLOGY OF MENTAL ILLNESS: STUDIES IN RECORD LINKAGE** Edited by J. A. Baldwin. (Pp. 226; £4.50.) Churchill Livingstone: Edinburgh. 1972.

This volume describes the creation of a record-linkage system which made possible the maintenance of a cumulative index of all patient contacts with the psychiatric services in North-East Scotland, a region based on the city of Aberdeen, and its medical school. Dr. J. A. Baldwin was responsible for the