

## Book reviews

**DOPAMINERGIC MECHANISMS** Edited by D. Calne, T. N. Chase, and A. Barbeau. (Pp. 427; illustrated; Dfl. 80.00.) North-Holland: Amsterdam. 1975.

As L-dopa finds its place in the therapy of Parkinsonism, interest is shifting towards other dopaminergic mechanisms in the central nervous system and this book, Vol. 9 of the *Advances in Neurology* series, is a review of recent progress in these other aspects based on a symposium in Neuilly, France, in May 1974 which was sponsored by the Institut de Recherches Servier. The major research tools are the observation of behavioural changes in experimental animals attributed to postsynaptic hypersensitivity after degeneration or pharmacological blockade of dopaminergic neurones, and the measurement of cAMP which appears to mediate at some dopaminergic receptors (there may be more than one type). Interesting adaptive changes to deficiency of dopaminergic transmitter are described which must influence the 'models' suggested to account for clinical disorders. If it is true that clinical manifestations appear only when such adaptation is exhausted, the possibility of 'replacement therapy' may be less promising than it has recently seemed to be, and we should be less tolerant of the appearance of possible supersensitivity reactions to drugs such as tardive dyskinesia. Decentralisation supersensitivity is certainly not well known. The clinician must ask himself if his knowledge of pharmacology is sufficient before using a mixture of neuroleptic drugs empirically. Dopamine agonists, such as apomorphine, piribedil, and bromocryptine have sufficient differences in their actions to suggest that dopaminergic receptors are not all identical and their pharmacological effects cannot yet be predicted from first principles. It may well be that the test preparations used by pharmacologists are insufficient for selecting clinically useful drugs—a lesson we should have learned from the so-called anti-tremor drugs. Initial hopes for *m*-tyrosine in the treatment of Parkinsonism, for instance, have not been substantiated and it is becoming clear that it is an oversimplification to define a potential anti-Parkinsonism agent as one that should mimic or complement striatal dopamine, or influence motor activity in rodents. More information is required about the interrelations between dopamine and other neurotransmitters. Studies on patients with Parkinsonism are still necessary and may be rewarding. It is well known that tremor is the symptom least responsive to L-dopa and yet it may turn out to be the best indication for piribedil. In his summing up, L. L. Ivesen

points to the necessity for an extremely high degree of precision in medicinal chemistry in the design of dopamine agonists. This exciting book suggests that this precision is near to being achieved.

J. A. SIMPSON

**AN ATLAS OF CLINICAL NEUROLOGY** 2nd edn By J. D. Spillane. (Pp. 438; illustrated; £9.) Oxford University Press: London. 1975.

It is a pleasure to be asked to review a book with which one feels so much in tune. This expanded second edition is the very stuff of clinical neurology. In these days of colour television one is apt to look down on the idea that black and white photographs can adequately represent the dynamic concepts of neurological problems. Such is the skill with which the photographs have been taken and selected that the loss of movement is not missed. Any inevitable deficiencies in the purely graphic display are compensated for by the personal and vivid style of writing. The description of the lady with bulbar palsy clutching anxiously at her handkerchief will give an immediate sinking feeling of recognition to all neurologists.

It is, however, a book for students as well as practitioners. The first edition gladdened the Aberdonian heart as an undoubted best buy in medical publishing at the time. Regrettably inflation has struck and may limit its availability to this group, although by present day standards it is still excellent value.

A. W. DOWNIE

**SYNAPSES AND SYNAPTOSOMES: MORPHOLOGICAL ASPECTS** By D. G. Jones. (Pp. 196; illustrated; £14.40.) Chapman and Hall: London. 1975.

This is a scholarly book which displays the author's deep researches against a background of evaluation of historical work and contemporary developments. This book will be of greatest value as a source-book for laboratory workers in the neurosciences who will find all aspects of synaptic structure and function discussed. There are detailed accounts of the methods of the author's advanced electron microscopy and techniques of isolating and analysing synaptic components. In addition to his cogent discussion of the work of others, the author has carefully borrowed illustrations and diagrams where necessary. The book is not easy to read because the information is condensed. There are about 1000 references and just under 200 pages of heavily illustrated text but most

research workers will wish to study this book which, at the price, they will have to borrow from libraries.

D. DOYLE

NEUROLOGICAL AND SENSORY DISORDERS IN THE ELDERLY Edited by William S. Fields. (Pp. 244; illustrated; \$19.50.) Stratton: New York. 1975.

Proceedings of symposia, with verbatim accounts of discussion following individual papers, have advantages and disadvantages. In this book there are good formal papers by well-known American neurologists, and glimpses of informality and humour in discussion so often lacking in original presentations. On the other hand, such a book takes a long time to compile, and by its publication there is much that is out of date. It is not clear when the symposium was held but some clue comes from speakers saying they were looking forward to the time when the combination of L-dopa with decarboxylase inhibitors became generally available, and that computerised axial tomography might hold promise for the future. How much value is there in using expensive space to describe in discussion an interesting case that the speaker rather inaccurately remembers? The main papers are excellent, with notable contributions on the neurological complications of skeletal disease in the aged, and the degree to which strokes should be investigated, and the potential for prevention and treatment. It is good to see aspirin recommended in selected patients in place of conventional anticoagulants, but astonishing to read that a physician of one's own vintage considered that before penicillin very few people lived beyond 60 (and not surprising that several pages are taken up disputing this!) It is a very interesting book, and well worth reading, and perhaps it is unfair that the best remembered paragraph defines a 'rich' (as opposed to a well-to-do) American as one with a place in Florida, a Caribbean island, at least one Lear Jet aircraft, and enough Cadillacs to stand on while washing it.

EDWIN R. BICKERSTAFF

THE LIMBIC SYSTEM By Robert L. Isaacson. (Pp. 292; illustrated; \$17.94.) Plenum: New York. 1974. The author disarms criticism by devoting a preface to describing his bias towards destructive lesions and electrophysiological studies on the rat and cat, and in his selection of references. Within these limits, he has provided a useful summary of the structure and function of the limbic system (in which he includes the hypothalamus, hippocampus and its septal area) for advanced students in psychology and the neurosciences. References to human studies are scanty but in general the limbic system is equated with the

'paleomammalian' brain of MacLean, and considered to have inhibitory control over the fundamental core 'protoreptilian' brain, an inhibition which he conceives as being necessary for development of learning sets—or forgetting of previously learned sets (a concept for which there is some evidence from human studies). The hippocampus can be seen as a mechanism which suppresses 'innate' or early learned responses when the unexpected happens. The amygdala is seen as accentuating the conditions of arousal and activation of the hypothalamic systems when external conditions are appropriate, a function in some ways opposed to those of the hippocampus. The neocortical brain anticipates the future. It extrapolates from the past experience of the limbic system with the valuable storage device of language.

The more conservative reader will reject the interpretations, but some conceptual schema is useful for storing and correlating data. This book is quite helpful from that point of view.

J. A. SIMPSON

PRIMATE MODELS OF NEUROLOGICAL DISORDERS (*Advances In Neurology*, Volume 10) Edited by

B. S. Meldrum and C. D. Marsden. (Pp. 362; illustrated; \$25.95) Raven Press: New York. 1975.

Attitudes towards research on subhuman primates have recently altered. There has been a general hardening in the reactions towards the use of primates for experimental purposes unless the results could not readily be obtained in a non-primate species. Furthermore, for a variety of reasons, the availability of wild-trapped animals has become increasingly uncertain and there are genuine fears of an ecological nature as to the consequences of large scale trapping of some species. A switch to purpose-bred animals may become desirable, and if so, would have far reaching consequences, not least in financial terms and in the time required before such breeding facilities could be established. The devotion of volume 10 of *Advances In Neurology* to an examination of the value of primate models of neurological disorders is therefore appropriate. It is based on a symposium held at the Institute of Psychiatry, London, in 1974, which was devoted to an assessment of the achievements of primate research in this field.

The contributions cover a wide range of topics and have been grouped into four sections, depending upon subject matter: motor disorders, epilepsy, cerebrovascular disease, metabolism and degenerative disorders, and virus diseases. It is not possible in a short review to detail individual contributions, but in general these are authoritative accounts by individuals directly involved in neurological research