Book reviews

Glutamate as a Neurotransmitter (Advances in Biochemical Psychopharmacology, Vol 27) Edited by G Di Chiara and GL Gessa (pp 452; \$55.76) New York: Raven Press, 1980.

This is a volume forming part of the proceedings of an excellent meeting on "GABA and Glutamate as Transmitters" held in Sardinia in May 1980. A companion volume on GABA has already appeared and a further volume on the basal ganglia work presented at the meeting is imminent. The book is well timed since the meeting was held almost 20 years after the first demonstration of glutamate as a transmitter substance. It carries the spirit of the meeting from which it came and which I attended. It was an exciting and well organised meeting and this too applies to the volume on glutamate. It is the most comprehensive and up-to-date work on glutamate currently available. Every aspect of glutamate function in the CNS is covered; distribution, synthesis, uptake and release, metabolic changes, receptors and the toxicologic changes induced by kainic acid and other glutamate analogues are all covered. In such a work it is difficult to commend individual presentations. Cotman and colleagues provide an excellent introduction leading to the comprehensive chapters by Fonnum and by Storm-Mathisen on glutamatergic pathways. McLennan, Watkins, Davies, Krogsgaard-Larsen and Roberts all provide a spectrum of enlightening studies on glutamate receptors. Coyle, Di Chiara, Olney, Ben-Ari and Schwarcz emphasise toxicological aspects of glutamate function by presentation on kainic acid and other neurotoxins. Lastly, the relationship of neuronal glutamate function to neurological diseases including epilepsy, Huntington's chorea and Picks disease are discussed.

The volume emphasises the comprehensive studies that are being carried out on this excitatory neurotransmitter, which is fascinating because of its involvement both in neurotransmission and as an intermediate normal metabolic pathway. This book is a must for

all those working in this field and also is excellent value at £28 for 452 pages.
PG JENNER

Fundamentals of Human Neuropsychology By Bryan Kolb and Ian Q Wishaw (pp 501; £11.10) Oxford: WH Freeman & Co, 1980.

This is an introductory text intended primarily for undergraduate students with little knowledge of basic neuroscience or psychology which extends the traditional approach of comparative and physiological psychology to the study of human brain function. There are excellent (for the intended readership) sections on the nervous system, basic neurology and the techniques and problems of neuropsychological research. As befits their theoretical perspective the authors devote chapters to the sensory and motor systems which are sometimes overlooked in human neuropsychology, and throughout the book they emphasise the continuity between animal and human studies. This is a legitimate point of view and one which has hitherto been under-represented in the neuropsychological literature but there are other, equally fundamental aspects of the subject which the authors totally disregard. There is virtually no discussion of recent experimental investigations of the amnesic syndrome, linguistic analyses of dysphasia are dismissed in a single sentence and the acquired dyslexias, which are now of great interest to cognitive psychologists, are mentioned only in the context of disconnection syndromes. There are several brief and informal case reports which illustrate particular points rather clearly but much relevant data from studies of patients with cerebral lesions is omitted or discussed only in the most superficial and general terms. The authors are rightly sceptical about some of the exaggerated claims made for the power of neuropsychological assessment as a diagnostic tool and their comments on the design of test batteries could usefully be brought to the attention of some practising clinical neuropsychologists; but this is by no means a handbook of clinical practice.

In short, Kolb and Wishaw have produced a textbook suitable for the

readership they intended to attract—undergraduates interested in extending their knowledge of physiological psychology further up the phylogenetic scale.

G RATCLIFF

Central Neurotransmitter Turnover Edited by CJ Pycock and RV Taberner (pp 189; £11.95) London: Croom Helm, Ltd, 1980.

This volume in part is the proceedings of a Symposium held at the British Pharmacological Meeting at the University of Bristol, April 1980. The book contains chapters on the determination of turnover of catecholamines, 5HT, acetylcholine, aminoacids and peptides, with shorter chapters on the application of such techniques appended. The introductory chapter by Korf is an excellent review of this topic but overlaps with the following works by Sharman (catecholamines) and Curzon (5HT), each of whom provide interesting comments on the state of the art in these fields. Each author clearly outlines the application of the currently available techniques and indeed point to the most applicable methods of assessing transmitter turnover. Ansell emphasises the more exact knowledge of acetylcholine turnover while Fonnum's chapter emphasises the difficulties involved in assessing aminoacid turnover. Indeed, only GABA has received major emphasis but the topic is well reviewed. The last major chapter by Harmar and Keen was not presented at the original meeting but is probably the best contribution to this book. It is an excellent account of peptide turnover and although highlighting the dearth of knowledge at present I learned much from this review. The application papers are clearly used to enlarge the book to a reasonable size but add little. This is not the fault of the authors who have presented their studies well within the space provided, but the idea of application of the techniques does not come across. It is a pity that the editors did not try to enlarge the original contributions or add further chapters in the same vein. However, overall, an excellent little volume to interest the many workers in this field. I certainly will recommend it to

students and graduates alike. The price, however, may be prohibitive—£12 for 190 pages.

PG JENNER

The Neurophysiology of the Cerebral Cortex By Lynn Bindman and Olof Lippold (pp 411; £47.50) Maidenhead: Edward Arnold, 1981.

This is a most handsome and impressive book, which would be of the greatest help to undergraduate and postgraduate students if they could afford it. It is up to date, well produced and profusely illustrated with helpful diagrams and figures, many of them original. The style is excellent, fresh and critical almost throughout, with no mere repetition of received opinion, and is consequently a joy to read.

The book is divided into sections on structure, electrophysiology, neurochemistry and neurophysiology, the last of these being the longest. There is a 32 page index and there are 1500 references, well up to date and placed together at the end. I found the chapters on the input of information to the cortex, processing in the visual cortex and motor functions of the cortex particularly valuable. The authors are rightly at pains throughout to emphasise the importance of species, preparation, and depth and agent of anaesthesia, in all their critical discussions; and at many points, where the experimental evidence is inconclusive or a piece of evidence is missing, appropriate experiments are suggested. A critical approach like this is necessarily a personal approach, and one is bound to find points at which one disagrees with the conclusions reached. These are, perhaps not surprisingly, often found where the authors' views are well known and controversial. Thus, it is suggested (p73) that the technique of response averaging (whether unit or mass response) "... tend(s) to give response patterns which do not exist at all in reality..." Again, the observation that mass brainpotentials can be subject to contamination by muscle action-potentials becomes inflated into the view (p126) that the alpha rhythm is generated by eye muscle tremor and (p138) that the slow waves of sleep are generated by rapid eye movements (which actually occur in a different stage of sleep). These views were presumably originally pro-

posed in order to make people look to their methods and controls; but now they have gained a life of their own, and the critical presentation of evidence from both sides of a controversy, so evident elsewhere in the book, is lacking at these points.

But these are "good" faults; they stem from the enthusiastic partisanship of real experimentalists with a point of view, and are easily seen and forgiven. It would have been all too easy to write a less critical, less controversial and less interesting review of current knowledge of the workings of the cerebral cortex, and the authors were right to do it their way.

DN RUSHTON

Neural Blockade in Clinical Anaesthesia and Management of Pain Edited by Michael J Cousins and Phillip O Bridenbaugh (pp 719; £62) London: Harper & Row Ltd, 1980.

This is one of the best books on the subject that I have read. It opens with an informative section on the development of local anaesthesia which includes a useful four pages of "potted history." Chapters on pharmacology, physiology, applied anatomy and physiology and equipment follow. Regional techniques should never be embarked upon lightly, and precautions and dangers in administration get a good airing. Local analgesic drugs have doses too, and you will not be allowed to forget this! Thereafter techniques are described in detail, each body area being dealt with in turn (it is therefore easy to find one's way about this big volume). Specialised surgical applications of techniques follow and there is a useful (and salutary) section on complications. The last section of the book is concerned specifically with the treatment of pain and is dealt with very comprehensively within a comparatively small compass. The multi-disciplinary approach to pain is emphasised and the "philosophy" of the Pain Clinic outlined. This should be compulsory reading for those thinking of starting this work.

Finally, epidural and intrathecal opiates have a mention. Respiratory depression has been reported after their use. This warning is repeated here: and cryoanalgesia, TCNS, intravenous sympathetic blockade and hypnosis have not been omitted. I was very

interested in the technique of coeliac (celiac!) plexus block as outlined. Is not the loss of resistance test (with air or "local") as satisfactory as feeling the vibration of the peri-aortic structures transmitted to the needle? Ease of injection is mentioned later in the description. I have the impression that 7.5% phenol in water is as good a neurolytic agent in thoracic sympathetic block as the alcohol recommended, and perhaps a little less likely to produce post-injection neuralgia. And I should like to have seen mention of the relationship between the pain clinic and the hospice and religious affiliations; but this is really "nit picking." I enjoyed the book immensely and recommend it heartily. It is full of good things—a book to be consulted by any doctor who may be concerned with neural blockage and pain work. The editors are to be congratulated. It is well documented with an excellent bibliography. But oh! the price—£62. Librarians should buy it now, and doctors put their book tokens together for their own copy.

CDT JAMES

Progress in Clinical and Biological Research. Volume 39—Neurochemistry and Clinical Neurology Edited by Leontino Battistin, George Hashim and Abel Lajtha (pp 512; \$38.00, Dfl 72) New York: Alan R Liss Inc, 1980.

This book gives the contributions to a symposium held in Istanbul, Turkey in September 1979. The communications are grouped into five major areas: demyelinating diseases, convulsive disorders, extrapyramidal diseases, peripheral neuropathies and immunopathology, with a miscellaneous group of articles which include vitamin deficiency, steroids, aminoacids and amines. The emphasis generally is on the underlying biochemistry of the various neurological disorders, with some comments on problems of treatment. The main value of the book would therefore be appreciated by clinicians and research scientists requiring information on possible basic mechanisms associated with these disorders rather than by scientists wishing to be informed on the clinical aspects. This is not surprising as the symposium was organised under the auspices of the