

Firstly, authors were asked to put selected data into the context of existing literature. Some have provided this (e.g. Clark et al., Costall and Naylor) but most did not, and thus much of the book is a collection of specialized papers which can be found in more detail in the journal literature. Secondly, in a rapidly moving field a collection of original papers becomes rapidly dated and the long-term usefulness of the book is diminished. Thirdly, those chapters which do successfully review the literature are dotted throughout the book and are somewhat lost in the mass of original research. On the positive side, there are some good review

chapters. Palacios gives a good account of the molecular neuroanatomy of 5-HT receptors, Wallis summarises 5-HT electrophysiology well, and Hoyer gives an excellent account of 5-HT receptor second messengers. If the reader is content with a few review articles and a snapshot of good research in 5-HT during 1990 then this book will be a welcome addition to the shelves. At such a high price, however, many will feel a subscription to *Trends in Pharmacological Sciences*, which has so many 5-HT reviews, is a better investment.

Ian Kitchen

Neurotransmitters and Epilepsy (Frontiers of Clinical Neuroscience, vol. 11); edited by R.S. Fisher and J.T. Coyle, Wiley-Liss: New York, 1991; x + 260 pages. £79.00, \$99.95. ISBN 0-471-56848-1.

In the last fifty years evidence that a compound acts as a central neurotransmitter has been rapidly followed by claims that it plays a key role in epilepsy. In the 1950s acetylcholine was the focus of attention; the '60s and '70s were dominated by GABA and the '80s by glutamate. The monoamines have been a brooding presence for the last 30 years and the neuropeptides have had many walk-on roles, with the opiates starring in the occasional art-house production.

The present volume is derived from a lecture series for neurosurgeons, and its contents reflect this. Explanatory chapters about neurotransmitter receptor mechanisms emphasize second messenger mechanisms, rather than basic electrophysiology or the molecular biology of receptors. Individual neurotransmitters are, however, presented largely in terms of cellular electrophysiology. Acetylcholine merits only 5 pages, serotonin 4. GABA, noradrenaline and opioid peptides are given more extensive chapters. Glutamate and its receptors get two chapters; the first of these (by one of the editors) is marred by gross errors in the diagrams of molecular structures, the second (by John Lehmann and others) concerns NMDA receptors. Two chapters come close

to the presumed objective of the lecture series which is to involve neurosurgeons in contemporary neuroscience. Nihal de Lanerolle and Dennis Spencer describe changes in neurotransmitter systems in seizure foci removed at operation as assessed by immunohistochemistry. Anders Lehmann and Anders Hamberger describe the use of pial or intracerebral dialysis to determine the extracellular concentration of amino acids and other neuroactive compounds.

This volume differs markedly from the earlier volume with the same title (Humana Press, 1987, edited by P.C. Jobe and H.E. Laird) that was organized in terms of animal models and had a greater neurochemical emphasis. This volume provides a useful summary of data relating to abnormalities of neurotransmitter function in epilepsy. It should enhance the understanding of neurologists conducting drug trials in epilepsy and surgeons performing resections. It might provide background reading for postgraduates moving into epilepsy but an authoritative sourcebook for neuroscientists does not yet exist.

Brian Meldrum

Plant Cell and Tissue Culture (Methods in Molecular Biology Volume 6); edited by J.W. Pollard and J.M. Walker, Humana Press; Clifton, New Jersey, 1990; v + 597 pages. £59.10. ISBN 0896031616.

The culture of plant cells and tissue has attracted the attention of industrialists interested in exploiting the technology for the production of fine chemicals. However, perhaps of greater interest is the fact that the techniques described in this book underpin much of modern plant cell biology which is reliant on the ability to regenerate plants from transformed cells. This volume contains information on both these topics and also covers an impressive array of allied applications. Accordingly, this book will provide a useful touchstone for those requiring access to the appropriate methodology but who are not necessarily familiar with the primary literature.

There are a total of 52 chapters in this volume and they range from introductory material on the establishment of a cell and tissue culture laboratory and the preparation of media to detailed

discussion of transformation protocols, generation and analysis of mutants and culture methods relevant to the industrial environment. The editors of this volume are to be congratulated as they have assembled a series of entries which appear to cover the field in its entirety. There is much to interest the plant cell biologist in the chapters of this book. In addition to in-depth coverage of the standard techniques the book also contains methods for the production of fern gametophytes, zygotic embryos and the generation of enucleate cells. It is this breadth which sets it apart from other books dealing with the same subject. Unfortunately, the cost of achieving this breadth is reflected in the rather steep purchase price. For this reason it seems likely that this book will find a home in University and Institutional libraries rather than in home and office book cases.

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