The editors promise further volumes devoted to information storage and membrane transport, drug and anesthesia effects and the role of membranes in viral infection. It is not altogether clear how these topics necessarily relate to membrane fluidity and it is possible that the series title may, in the longer term, appear over-restrictive. Nevertheless, the editors should be congratulated on these first three volumes which together give an excellent overview of the present situation in this important field of membrane research.

Patrick Williams

Adenosine Receptors (Receptor Biochemistry and Methodology Vol. 11)

Edited by D.M.F. Cooper and C. Londos

Alan R. Liss; New York, 1988

134 pages. $42.00

Research on purinoceptors – those receptors that transduce the extracellular actions of purine nucleosides or nucleotides, notably adenosine and ATP – is rapidly expanding. This book is therefore a welcome addition to the series on Receptor Biochemistry and Methodology edited by Venter and Harrison. The emphasis as in the previous volumes is to include details of methods; not necessarily at the practical experimental level but certainly in sufficient depth to understand the reasons behind the strategies employed, though this bias is not equally evident throughout the book. Thus three of the 8 chapters serve only as reviews of different aspects of adenosine receptor biochemistry: those by Londos (ch. 5) on coupling of adenosine receptors to G_s or G_i proteins; Marquardt (ch. 6) on adenosine and mast cells; and Polmar et al. (ch. 7) on possible roles of adenosine receptors on white cells, particularly lymphocytes. Although each is succinct it is a pity that so little methodology is presented in these chapters. Without it the usefulness of this volume is diminished, since they add little to what can be found reviewed elsewhere. Other perennial problems with multi-author volumes surface in this book. The lack of firm editorial control has led to substantial overlap between the introductory sections of several chapters. In addition, very few references beyond 1986 are cited, and of these most are in the form 'in press, 1987'.

Despite these criticisms, the book as a whole is a valuable addition to the small available library on purinoceptors. The first four chapters provide clear method-oriented texts on adenosine receptor characterization. Jacobson gives a detailed overview of the strategies and successes in the chemical design of novel adenosine receptor agonists and antagonists. Patel and Linden follow this with the design and potential use of photoaffinity labels for adenosine receptors. By this time the reader is already familiar with the classification of adenosine receptors into at least 2 subclasses, and the next chapter by Bruns describes how ligand binding studies have been used with considerable success to localize and characterize pharmacologically high-affinity A_1 receptors, and with much more limited success (because of their lower affinity), A_2 receptors. In chapter 5 Cooper summarizes attempts to purify the A_1 receptor. Although this chapter, hopefully, will soon be out of date, when successful isolation and cloning of the receptor (not yet reported) is announced, the problems involved have not been insignificant and Cooper carefully describes them. The final chapter (Jarvis), although strictly an interloper, because it deals with attempts to purify the nucleoside transporter rather than a receptor, is also valuable because the difficulties encountered here point out the complementary approaches that have been necessary, and again raise the hope that the transporter protein will soon be cloned.

By then it will be time for a new volume in the series to update this one. It should also be possible

to shed more light on the exact nature of the transduction mechanisms at adenosine receptors that fit poorly into the A_1/A_2 classification in terms of rank order of potency of agonists and lack the effect of adenyl cyclase, and which thus gets very little mention here. In addition, I hope consideration will be given to the relationship in evolutionary or functional terms, between adenosine receptors and the other major class of purinoceptor, P_2 receptors recognising adenine nucleotides. In the interim period, this volume will be of great value to those entering the field of adenosine receptor biology, particularly if they require good overviews of how to set up methods to characterize adenosine receptors or their cellular actions. It also provides a convenient summary and aide-mémoire to those already working in this area. And, importantly, the publishers are to be congratulated on providing a commendably cheap volume which like the others in this series, is extremely good value by comparison with some of their competitors' books.

Jeremy Pearson

Frontiers in Excitatory Amino Acid Research

Neurology and Neurobiology Volume 46

Edited by E.A. Cavalheiro, J. Lehmann and L. Turski

A.R. Liss; New York, 1988

745 pages. $130.00

This volume represents the collected papers presented at the symposium, entitled 'Excitatory Amino Acids '88', that was held in Manaus, Brazil, during March and April of that year. That the book has been produced so promptly is a tribute to the organisation of the editors and publishers, which is to be applauded.

The book is introduced with a review by J.C. Watkins, whose immense contribution to developing this field of study makes such a prominent position especially fitting. There follow chapters on the excitatory functions of amino acids, with special reference to receptors and changes in neuronal metabolism; receptors and neural pathways and electrophysiological aspects of the activities of excitatory amino acids. Three chapters on the uses of excitatory amino acids antagonists then follow, which include papers on epilepsy, anxiety and spasticity. A further three chapters explore the roles of excitatory amino acids in learning and memory and in the functioning of sensory and motor systems.

A group of papers concerned with factors that modulate NMDA receptors (prefaced by an interesting review by D. Lodge and colleagues) is followed by two chapters on the more pathological aspects of excitatory amino acids, including papers on endogenous excitotoxins (prefaced by a review by J.W. Olney) and in ischaemia, hypoglycaemia and stroke.

A book of this nature, consisting as it does of a collection of camera-ready papers, does not endear itself to the reader as a work to be cherished for its own sake. However, this is not the function that is here intended. Instead the editors and publishers have attempted to assemble a collage of current research which, inevitably scattered throughout numerous primary sources, would be hard to find even by those fortunate enough to have access to excellent library facilities. The standard of the papers presented is very high and, in reading them, a strong sense of the excitement generated by the rapid progress of this research field is conveyed. Thus, the primary aim of the book is clearly achieved and, as a result, it can be firmly recommended.

P.B. Nunn