

Epithelial Calcium and Phosphate Transport: Molecular and Cellular Aspects

Progress in Clinical and Biological Research: Volume 168

Edited by Felix Bronner and Meinrad Peterlik

Alan R. Liss; New York, 1984

xxiii + 392 pages. £52.00

This contains the proceedings of the Second International Workshop on Calcium and Phosphate Transport across Biomembranes, held in Vienna in March 1984. It consists of 58 short articles, reproduced photographically from typescript. These deal with a variety of topics, including Ca^{2+} -ATPase, Na-Ca exchange and the measurement of intracellular free Ca^{2+} . Strictly speaking, only about half of the articles deal with epithelial calcium and phosphate transport, and a few are on totally unrelated topics.

The articles vary in quality, from good to downright awful. Some report work in progress, while others give only a brief summary of the authors' work, and refer to published papers for more details. The latter tends to be frustrating, particularly because it is prevalent with the more highly respected authors. There is an index, but unfortunately there are no reports of the discus-

sion that must have occurred. This makes it difficult for the reader to assess current areas of controversy, such as the importance of Na-Ca exchange at the basolateral surface in epithelia.

The current volume is intended as a continuation of the proceedings of the First International Workshop on Calcium and Phosphate Transport across Biomembranes, published as Calcium and Phosphate Transport across Biomembranes, edited by F. Bronner and M. Peterlik, Academic Press; New York, 1981. It will obviously be of most value to those who already have that volume. Although it provides a collected source of information on a variety of topics, the coverage is uneven, depending as it does on those who attended the workshop. Conference proceedings have to be exceptional to make the resulting publication worthwhile. This is not.

T.B.J. Simons

Intracellular Perfusion of Excitable Cells

Edited by P.G. Kostyuk and O.A. Krishtal

John Wiley & Sons; Chichester, 1984

133 pages. £10.00 (paperback), £20.00 (hardback)

The perfusion of the classical giant nerve preparation, squid axon, was first performed over twenty years ago. Since then a variety of perfusion or dialysis methods for other excitable cells have been

developed. The aims of such techniques have been two-fold; either to change intracellular composition and so study its effects on membrane excitability, or simply as a means to achieve low-

resistance access to the cell interior for electrical studies.

This book is the fifth volume in the International Brain Research Organisation series on Methods in the Neurosciences. Chapters by different authors describe a number of perfusion techniques, including methods for large cylindrical axons and muscle fibres, suction pipette methods for neurones and isolated cardiac cells using glass or plastic pipettes, and the glass funnel method developed for oocytes. Additional chapters describe cell isolation techniques and some theoretical aspects of electrical measurement on perfused cells.

In a book which aims to provide guidance on the available methods of perfusion and on their implementation, sufficient technical detail is important. In this respect an excellent account of glass funnel perfusion, in which isolated cells are placed inside a pipette tip, is given and the method should be applicable to cells other than oocytes. Plastic pipette methods are clearly described as are the techniques for giant axons and muscle fibres. The

chapter on cardiac cells is less helpful, dealing mainly with the problems of achieving good voltage-clamp control and with perfusion primarily as a means to this end.

There is overlap between the introductory sections of some chapters and also some contradiction concerning the 'washout' of calcium channel activity in perfused neurones. This is treated in chapter 2 as an avoidable consequence of cell damage, but as an important process giving insight into the metabolic needs of these channels in chapters 3 and 5. I am surprised at the omission of a chapter on the whole-cell patch clamp, which certainly gives some control over intracellular composition and may be applied to a wide range of cells too small for other methods. The book also has many typographical errors. Despite these reservations, the book should provide a useful introduction to available perfusion methods for workers wishing to use these techniques in the investigation of the control of excitable cell function by intracellular factors.

N.B. Standen

A Clinical Companion to Biochemical Studies (2nd Edition)

by Victor Schwarz

W.H. Freeman and Co.; New York, 1984

xiv + 162 pages. £11.95

Closely resembling its predecessor in style and objectives, the second edition of this book has six new chapters dealing with thalassaemia, insulinoma, vitamin D-dependent rickets, rheumatoid arthritis, cholera and the Ehlers-Danlos syndrome. Of the chapters present in the first edition the one on 'Chinese restaurant syndrome' has been omitted; the others have been either substantially re-written or up-dated. There are more references than before and more questions at the ends of chapters. The book aims "to demonstrate to students in early years the close relationship between biochemistry and clinical medicine", and "to generate interest in biochemistry by drawing

attention to its fundamental role in the disease process, its diagnosis and treatment".

Each chapter deals with a single disease and begins with a 'Case History' containing selected clinical and biochemical symptoms relevant to the disease. Intentionally, since the book is designed for students in preclinical years, the information given in these 'Case Histories', is not sufficient to enable the diagnosis to be made. A short 'Discussion' follows in which the disease, its diagnosis and treatment are explained in biochemical terms so far as this is possible. The author, deliberately, makes no attempt to be systematic or comprehensive; of the twenty-seven diseases covered fourteen are in-