

in the treatment of diseases. However, before this can be fully exploited our knowledge of these molecules, and their mode of action, must be fully investigated.

The series of books 'Progress in Leukocyte Biology' focuses on the biology of granulocytes, mononuclear phagocytes and lymphocytes. This volume (10A) concentrates on 'The Molecular and Cellular Biology of Cytokines' while a sister volume covers 'The Physiological and Pathological Effects of Cytokines'. It covers very many areas related to cytokines. These include: their molecular biology and gene expression; producing and processing methods; receptor regulation and recently discovered receptors; signal transduction within cells, molecules which inhibit cytokine activity; anti-cytokine antibodies; novel cytokines; the inter-relationships of cytokines, endocrine hormones and neuropeptides; and the variety of effects that cytokines have on target tissues.

The book contains papers dealing with interleukin 1, interleukin 6, tumour necrosis factor, colony stimulating factors, interferons, transforming growth factor β , fibroblast growth factor, platelet-derived growth factor and new 8000–10 000 molecular weight cytokines. References will also be found to a number of hormones including insulin, neurokinin, somatomedin and parathormones.

Many of the concise papers (about 6 pages long) are well written and introduce much new information on the cytokines, their effects and ways in which they may be regulated and identified. The new developments and rapid expansion in our knowledge of these molecules are clearly evident.

The general presentation of the papers and the production of the book are very good. As in all such proceedings using camera-ready contributions, there is considerable variation in the typeface, figures, legends, titles and references. For example, in many cases, titles of papers are included in the reference section of the contributions, while in others they are not. The exact addresses of the contributors are included in sufficient detail to allow easy correspondence and it is a feature which should always be included in all such conference proceedings. The contents and index sections are good.

This book will provide much of useful information for anyone involved in cytokine research. It will also be useful for those beginning to learn the complexities of cytokines provided they already possess a good background in the area.

R. O'Kennedy

Molecular Mechanisms in Cellular Growth and Differentiation; Edited by A.R. Bellvé and H.J. Vogel; Academic Press; San Diego, 1991; xxii + 365 pages; \$95.00.

Ancient Gaul, as all the world knows, was divided into three parts. This book is also divided into parts — five if you believe the list of contents, but in reality twenty-five, because each chapter stands alone, and in spite of a valiant attempt to link them together, that the editors make in the preface, they are concentrated and unconnected. The common theme of growth and development is far too wide to be encompassed in one volume.

For whom is the book written? It was developed, as the editors coyly put it, from a Biomedical Sciences Symposium organised by the College of Physicians and Surgeons of Columbia University. As such, many of the contributions are those that you would expect to find presented at symposia: up-to-the-minute reports of work that is proceeding in the authors' laboratories, with latest evidence concerning issues that at present hang in the balance. Unfortunately that minute is somewhere in 1987 (although about half of the authors have made use of an opportunity to update references in 1988) and the issues in many cases are long since resolved. Thus the specialists who would have found these chapters highly instructive in late 1987 or early 1988, are doomed to disappointment. Just five chapters have been updated since 1988, and one, by Reid et al. is a thorough review containing

nearly 300 references, which has been updated to about the end of 1990.

As to content, eighteen of the twenty-five chapters deal with growth factors, their mechanism of action, receptors, relationship to oncogenes and role in development. Of these, the review by Reid et al. of the regulation of gene expression in cultured liver cells by hormones and extracellular matrix, mentioned above, is worth reading, and the chapter by Gelbert on the *Drosophila* β TGF homologue, the decapentaplegic gene contains material that will have more than passing significance. Also updated are chapters on seminiferous growth factor by Bellvé and Zhang, pp60^{c-src} phosphorylation, by Hunter et al., and on G-protein aggregation, by Rodbell. The last seven chapters include five on homeotic genes, one on retinoic acid in pattern formation, and one on villin expression.

In summary, this volume is unlikely to be much read. Proceedings of symposia need to be published much more rapidly to be of use to specialists. If a collection of reviews is required, it needs to be commissioned as such from the authors. This book misses both targets.

J.A. Smith

Lipid Biochemistry — An Introduction; By M.I. Gurr and J.L. Harwood; Chapman and Hall; London, 1991; xviii + 406 pages; £19.95.

This easy to read fourth edition of Lipid Biochemistry is much

altered from previous editions containing new chapters as well as

an altered emphasis of the original material. It should certainly be looked at again by those who had not found the earlier editions suitable for their courses for recommendation to students.

One major change is a stress on the function of lipids. The division of functions chosen by the authors is structural, storage and metabolic (although a misleading heading in the summary chapter suggests the third aspect is lipids in metabolic control). While these divisions may not be entirely appropriate they work for the majority of the book.

The book starts with a chapter outlining methods for the isolation, separation and detection of lipids and another chapter gives a full account of fatty acid structure and metabolism. Much of the rest of the book is new. Major aspects of lipid metabolism are reviewed in two chapters on lipid as energy stores (in plants and animals) and metabolism of structural lipids. Further functions of lipids are dealt with in two chapters covering many different topics from lipids in cellular structures to membrane fusion

and pulmonary surfactant. Other parts of the book deal with the involvement of lipids in health and disease.

The advantage of the book is that all major aspects of lipid metabolism are covered in one volume and thus it will be of great benefit to those looking for a readable review of lipid biochemistry. However, the disadvantage is that because of the wide cover of subject matter only a summary can be given for many subjects. One such area is inositol lipids and second messengers which is reviewed in only four pages. In other cases the inclusion of a few extra words would have provided much more information. Thus the conversion by cyclic AMP of inactive triacylglycerol lipase to an active form is given but there is no mention of phosphorylation by a kinase! There are also one or two confusing diagrams but overall the volume fills an important gap in the literature.

M.P. Rogers

Membrane fusion; Edited by Jan Wilschut and Dick Hoekstra; Marcel Dekker: New York, Basel, Hong Kong, 1991; xvii + 902 pages; \$234.00.

The objectives of the editors in planning this volume were ambitious and laudable. In their own words: 'The purpose of this book is to provide the reader with an overview of recent progress in research on membrane fusion as it relates to (these) diverse areas of scientific interest'. The result is a large, multidisciplinary, multi-author volume containing a wealth of information on the theory and applications of membrane fusion, but regrettably it fails to achieve its stated purpose. The reason is clear: almost all of the contributions were completed in early 1986 and few have been more recently updated.

There are morals here for all who might be considering similar projects; sixty-six contributors (sixteen of whom have in the interim moved laboratories) is just too many academics to try to harness together for any such team effort. Any volume like this which aims at ... 'supplying a comprehensive view...' for a readership comprising '...molecular, cell and membrane biologists; biophysicists; biochemists; virologists; biotechnologists; microbiologists; immunologists; physiologists; and graduate and medical school students in biophysics, biochemistry, physiology, virology, cell biology and biotechnology...' is likely to end up satisfying almost no individual reader. And, finally, when as a result, it costs \$234, who will be able to buy it?

But what of the material covered here? The book is divided into six parts, each comprising various chapters on related topics. The first part comprises three chapters on general aspects of membrane structure, lipid polymorphism and intramembrane forces. One might think that this material might not suffer from the publication delay but Parsegian and Rand, who wrote the third chapter, draw attention to the fact that the period from 1986 to 1991 was one of rapid progress and their contribution does not adequately reflect these changes. The second section deals with

fusion in model membrane systems and with nine chapters is the most extensive; it provides a good background on the kinds of approaches aimed at elucidating molecular mechanisms of fusion and discussions on the relation of model systems to biological membranes. The next section considers the best understood systems, namely the fusogenic properties of enveloped viruses, studied in model and cellular systems. The contributions here I felt have withstood the test of time best, with the reviews by J. Lenard and by D. Hoekstra being very readable. Section four, with seven chapters on intracellular membrane traffic, is the one where progress, particularly in the molecular and genetic aspects of the topic, has been most marked; many reviews and books have covered this topic more recently and it is to these that a general reader would turn at this time. Section five briefly considers cell-cell fusion, with chapters on myoblast fusion, and sperm-egg fusion during fertilization. The final nine chapters are headed 'Applications of Membrane Fusion Techniques'. Collectively, they make fascinating reading, covering, for example, production of monoclonal antibodies, use of liposomes in drug targeting, and applications to genetic engineering. But here, as throughout this volume, one knows for a fact, or one suspects, that the story has moved on, the techniques have been modified and new questions are being asked.

Overall, therefore, although there is much of general background interest here, this volume largely comprises a presentation of old goods in new packaging, and cannot be recommended for anyone seeking up-to-date information on research on membrane fusion.

J.W. Payne