

and appropriate brevity with essential references to more detailed texts. The object of the chapter is to give the reader an 'orienting overview' of the field as it has developed. The authors deal with relaxation mechanisms, cross-relaxation and the nuclear Overhauser effect, briefly with NMR spectrometer design before passing on to biochemical applications which include, for example, quantitation of metabolites, intracellular pH measurement and metabolic compartmentation and the study of macromolecules *in vitro*.

Electron spin resonance is covered in Chapter 2 (R.C. Sealy, J.S. Hyde and W.E. Antholine) the introduction to which tells us that there are 2000 papers per year containing ESR data! The beginner is not advised to start here. The chapter gets into nitroxide probes after 4 pages. Biological free radicals in a variety of systems are discussed and there is a substantial section on the effects of paramagnetic transition metals. A very comprehensive chapter with almost 300 references.

The longest chapter of the book (Chapter 3, 124 pages) is devoted to Mass Spectrometry (J.C. Tabet and M. Fétizon) which as a result of the development of new peripheral techniques (e.g. the coupling of MS with gas chromatography) and new ionization techniques has had an enormous impact on the analysis of both chemical and biochemical molecules in recent years. This chapter, which is largely addressed to the expert, concludes with a detailed discussion of applications to steroids, peptides, polysaccharides, antibiotics, heterocycles and alkaloids. It is a valuable survey of both the methods used and the power of the technique.

In contrast to NMR, ESR and MS, circular dichroism (CD) and the associated technique of

optical rotatory dispersion (ORD) are not perhaps central services in many laboratories. However, most biochemists are well acquainted with the application of CD and ORD, particularly to the determination of protein secondary structure. The chapter by D.W. Urry (Chapter 4) gives a very clear exposition of the theory behind these techniques, which could be recommended to an undergraduate. The applications naturally cover polypeptide conformation, the knotty problem of light scattering in CD is considered in depth and the chapter concludes with an application to the purple membrane of *Halobacterium halobium*. The author has struck a good balance between theory and application here.

At the time of writing L.N. Johnson (Chapter 5, Protein Crystallography) states that there are well over 200 protein structures which have now been solved by X-ray diffraction methods. The discussion of these methods is one of the most readable the reviewer has come across. Directed to the biochemist and the biochemistry undergraduate the chapter gives an excellent overview of the techniques and clearly emphasises the rate-limiting step in structure determination – the problem of obtaining protein crystals. Recent developments including discussions of the value of molecular dynamics, synchrotron radiation and neutron diffraction are included. This is a most illuminating contribution.

The volume is well produced and should be an essential purchase for any comprehensive academic library. It is a valuable source book for practitioners and teachers of physical biochemistry and this reviewer will be looking forward to Part B.

Malcolm N. Jones

Basement Membranes

Edited by S. Shibata

Elsevier Science Publishers; Amsterdam, 1985

466 pages. \$107.80, Dfl.290.00

The publication of the Proceedings of the First International Symposium on Basement Membranes

held in Japan is particularly timely. Rapid progress in our understanding of the chemistry of the

macromolecular constituents of basement membranes has led to an interest in their role in morphogenesis and disease. The application of molecular biology, immunology and ultrastructural studies has led to the concept of a dynamic structure-function interrelationship between the basement membrane matrix and the associated cells.

The main part of the text is divided into six sections comprising forty articles, each about ten pages in length. The sections on glycoproteins and proteoglycans, biosynthesis and molecular biology and ultrastructure and tissue localisation are concerned with the fundamental aspects of basement membranes. Emphasis is placed on recent findings rather than review material and the reader will therefore gain an insight into 'the state of the art' in this rapidly expanding field. A further section is devoted to the role of basement membranes in renal and lung disease, where the emphasis is placed on the isolation and characterisation of basement membrane antigens. The value of

monoclonal and monospecific antibodies in the investigation of the aetiology of these important diseases is also demonstrated. Further papers are concerned with neoplastic and inflammatory disease. The final section on the role of basement membranes in morphogenesis provides a comprehensive insight into this fascinating area of research. Twenty-two contributions to the poster session are also included as short two-page articles.

The book is in a camera-ready form but the variation in type-face between the different articles does not detract from the presentation. A particularly pleasing feature are the illustrations which are of a uniformly high standard and in some cases highly imaginative. This book is easy to read and should therefore appeal to the non-specialist interested in basement membranes, while the high quality of the authorship will ensure it a place in research laboratories interested in connective tissues.

R.G. Price

Comparative Endocrinology: Developments and Directions

Edited by C.L. Ralph

Alan R. Liss; New York, 1986

xii + 190 pages. £29.00

The book is Volume 205 in the series Progress in Clinical and Biological Research and contains eight papers which record the proceedings of the 10th International Symposium on Comparative Endocrinology.

The first paper deals with the history of comparative endocrinology and is followed by papers on Neuropeptides in Molluscs, Endocrine and Genetic Regulation of Vitellogenesis in *Drosophila*, Prolactin Action in Teleosts, Structure-Activity Studies on Gonadotropin-Releasing Hormone, Suitability of The Mammalian Model in Reproductive Endocrinology, Growth Hormone in Birds and Embryonic Diapause in a Marsupial. Clearly, the book is not as comprehensive as suggested by the Editor but the contributions are generally interesting, well written and up-to-date.

The case that studies with lower organisms make a tremendous contribution to our understanding of mammalian endocrinology is well supported by the book. The appeal of the book, however, is more likely to be to the already informed comparative endocrinologists and even some mere endocrinologists than to the comparative novice. It is more likely to find a home on the shelves of active research groups than of undergraduate students. The book is neatly produced by litho-offset of typed manuscript and would have been better value for the price if 28 of the pages had not been devoted to a list of names and addresses of conference participants.

R.F. Murphy

Explore the latest publications in Comparative Endocrinology, and find Comparative Endocrinology experts. Questions (30). Publications (4,936).
The cover page of General and Comparative Endocrinology, volume 263, published on 13 April 2018 is the picture presented in our article 'Gonadotropin receptors of *Labeo rohita*: Cloning and characterization of fulllength cDNAs and their expression analysis during annual reproductive cycle' published in the same journal page 21-31.
Hormones regulate growth, development, metabolism, and other complex processes in multicellular animals. For many years it has been suggested that hormones may also influence the rate of the aging process.