

the title is really rather misleading since seven of the ten chapters are concerned with calcium currents and calcium channels, and only the last two chapters (on the fate of calcium ions in the nerve cell and on the functional role of calcium) address those other aspects of calcium (such as intracellular release, sequestration and extrusion) which biochemists most frequently study, and relatively briefly at that. However, there are many other books which emphasize these aspects. Within these limitations, this book

provides an interesting addition to the calcium literature, which has three advantages: it is clear, concise and well produced; it is personal (as opposed to the usual multi-author conglomerate); and it is inexpensive.

D.A. Brown

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**The Collagens: Biochemistry and Pathophysiology;** by Eugene J. Kucharz, Springer-Verlag, Berlin, Heidelberg, 1992; xviii + 430 pages. DM 218.00.

In this day and age of multiple authorship of text books it is surprising to find a text on such a relatively complex subject as collagen by a single author. Dr. Kucharz admits to a fascination with his subject and this is certainly evident, particularly in the section of the book dealing with collagen from the viewpoint of the clinical physiologist.

Nearly three quarters of the text are devoted to clinical aspects of the collagens. This is well written and is a much needed contribution to the literature on collagen. The writing is precise and eminently readable, and the author puts into context early work in the field with more recent references, thus achieving an interesting historical perspective. The monograph is presented so that early chapters deal with the structure, biosynthesis, degradation and turnover of collagen before developing the pathophysiology. The structure and biosynthesis of collagen are well presented, but the section on degradation is disappointing. Happily, this criticism does not apply to the bulk of the book, although there are several printing errors and incorrect references. However, since there are well over 2,500 references, the percentage error is relatively low. Sadly, there are no references later than 1989 and it would seem that the publication of this book may have been unduly delayed. The bulk of the book which deals with the pathophysiology of the collagen molecule includes chapters on embryological development and the effects of ageing and, rather surprisingly, a brief account of phylogenetic aspects of collagen. Other chapters cover hormonal regulation, antigenicity and

immune responses of collagen, diseases where genetic alterations of a collagen molecule are known to occur and other diseases not primarily of collagen such as scleroderma where abnormalities of collagen metabolism are nonetheless probably involved. Subsequent chapters deal with collagens of specific tissues, such as the eye and liver etc., and with musculoskeletal, cardiovascular, respiratory and reproductive systems. The relationship between the physiological function of the tissue and the nature of its matrix are clearly and concisely described.

Finally, the nature and source of stroma in malignant tumours and pharmacological control of collagen synthesis and metabolism are described and discussed. All the chapters apart from the introductory sections are short and succinct and rarely more than 10 pages long which makes for easy reading. There is rather a paucity of illustrations, however, and some illustrations, such as that for the relationship between tumour growth and connective tissue matrix, are contrived and add little to the value of the text.

This is a work of considerable scholarship and should be of interest to clinicians and scientists alike. I would certainly recommend it as an introductory text to postgraduate students starting work in this field.

Jacqueline B. Weiss

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**Retroviral Insertion and Oncogene Activation (Current Topics in Microbiology and Immunology, Vol. 171);** edited by H.J. Kung and P.K. Vogt, Springer-Verlag, Berlin, Heidelberg, 1991; x + 179 pages. DM 136.00.

In the ten years since the first reports linking retrovirus integration and oncogene activation, tumors associated with chronic retrovirus infections have been a rich source of information about cellular oncogenes and their functions. A text that brings this important body of knowledge together in a single, concise volume is therefore to be welcomed, and when it is part of such a well established series, one opens the book with relish. A glance through the list of contributors only increases these expectations since all are eminently qualified to do justice to the

subject. It is perhaps because of these high hopes that the book as a whole proved to be something of a disappointment.

The main reason is that the chapters are really separate reviews and do not complement one another or form part of a logical scheme. They begin with an overview of retrovirus integration and insertional mutagenesis by Hsing-Jien Kung and his colleagues. As one of the editors, Kung has clearly tailored his text to the needs of the book. The chapter outlines the mechanisms of oncogene activation and compiles a list of known target genes, but more

importantly makes a brave attempt to account for the various ways in which the *myc* gene in particular can be activated in different systems. The next chapter by Lock et al. is very different, dealing principally with the impact of retroviruses on mouse genetics. While the review is informative and relevant, the subject remains rather esoteric to non-geneticists. Nusse on the other hand gives a lucid, no-nonsense account of insertional mutagenesis in mouse mammary tumors and spends the rest of his chapter describing properties of the target genes. While this is both incisive and well written, it has a different perspective from the previous chapters, and stands in stark contrast to the following chapter by Neil and his co-workers. Here the emphasis is on virology, providing a very comprehensive account of the feline leukemia virus system. At times, this seems more detailed than is warranted, but such a criticism is much more apt for the closing chapter by Lazo and Tsihliis. By trying to cover every aspect of the murine leukemia viruses, from the sequences of their enhancers to the genes that they affect, the impact of this important chapter is completely dissipated.

Even the most conscientious of editors cannot control the quality of the chapters and, since they all cover some common ground, there will inevitably be the overlaps and omissions. In this context, the preface is highly illuminating since the editors refer to six chapters when there are only five and pointedly thank only some of the contributors for preparing their manuscripts on time. This could account for the book's rather dated feel, as if much of it were written two or three years ago, and one cannot help but wonder what was left out. It would have been helpful to have more discussion of multi-stage events in transgenic animals or the dependence of target gene specificity on the route of infection or nature of the virus. A single, authoritative update on viral integration or enhancers would also have been justified.

Despite these reservations, this is the type of book that will attract a large readership when it appears on library shelves, but at DM 136 it is unlikely to appear to individual purchasers.

Gordon Peters

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**Mechanisms in Blood Coagulation, Fibrinolysis and Complement System;** by Torben Halkier, Cambridge University Press; Cambridge, 1991. xvi + 467 pages. £ 60.00.

The systems discussed in this volume are often treated in the literature as being quite separate and distinct, despite their strong mechanistic and regulatory similarities. Torben Halkier has chosen to group them together and stress the principles that unite them. In so doing, he echoes the sentiments of Oscar Ratnoff, who has argued that the distinctions between these defence systems are man-made and serve only the convenience of researchers. In life, in contrast, 'the devices through which the body protects itself form a seamless web, unwrinkled by our artificialities' (1969) *Adv. Immunol.* 10, 145-227].

The book is in four parts, the first three dealing with the individual systems listed in the title. Each is presented in good depth, suitable for final-year undergraduates and post-graduate students in both basic scientific and clinical disciplines. They would also be worthwhile reading for researchers in any one of these areas, whose knowledge of the related systems may be limited. The fourth section introduces the kinin system and deals with a number of topics that are relevant to all of these cascade systems. This section also unites the volume, with chapters on haemostasis, serpins and evolutionary considerations, among

others, and thus stresses the similarities and integrated functioning of the systems.

The style of writing is logical and concise. The book is easy to read and understand. The references are up-to-date and comprehensive. The illustrations are simple and use consistent representations of the motifs that occur frequently in the proteins that are discussed. While less lavish than the diagrams that embellish many modern books on protein structure and function, the diagrams in this book convey information simply and clearly.

The subject matter of this book was originally designed as a course for undergraduates in Århus, Denmark, where there has been a traditional strength in these areas. The students on this course have clearly been privileged in being taught about these topics in a comprehensive way that acknowledges both the diversity and unity of the cascades that make up the mammalian defence system.

Nuala A Booth

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**Saccharomyces;** edited by M.F. Tuite and S.G. Oliver, Plenum Press; New York, 1991. xv + 327 pages. \$ 69.50.

This book contains nine authoritative contributions which detail and discuss certain themes related to the *Saccharomyces* species, including growth, genetics and metabolism. The introduction by the editors traces the historical importance of fungi to man from the "classical" yeast biotechnology used in brewing and baking (covered in chapter 7) to the modern

techniques of genetic engineering, which have enabled the expression of heterologous genes in yeast (covered in chapter 6) to produce medically useful recombinant proteins, e.g. a vaccine against  $\beta$ -hepatitis.

Research into the basic cellular mechanisms of the eukaryotic cell can be carried out at a molecular level using yeast as a model