The Biology of Hyaluronan. Edited by D Evered and J. Whelan. Ciba Foundation Symposium 143, John Wiley & Sons Ltd, Chichester, 1989 x + 298 pp. ISBN 0 471 92305 2. Price: £32.50, US$57.95

Hyaluronan is a well known naturally occurring polysaccharide containing alternating *N*-acetyl-D-glucosamine and D-glucuronic acid as repeating disaccharide units. The reducing end of the *N*-acetyl-D-glucosamine is linked to the nonreducing end of the D-glucuronic acid by 1–4 glycosidic bonds, while the reducing end of the glucuronic acid is linked to the nonreducing end of the *N*-acetyl-D-glycosamine by 1–3 glucosidic bonds. Hyaluronan is a name suggested to be used when the polysaccharide is mentioned in general terms. Hyaluronic acid and haluronate should be reserved for the acid and salt forms of the polymer, respectively.

Hyaluronan is one of the major components of the extracellular matrix and is found in abundance in some tissues like synovial fluid and vitreous humour. Being a naturally occurring polymer, hyaluronan does not give a foreign body reaction when implanted into a living body, and has an excellent biocompatibility which makes it a very useful material in the biomedical field

The 16 chapters in this book are the result of a symposium promoted by the Ciba Foundation They give an excellent overview on hyaluronan, with different approaches, starting with an introduction which gives an historical background of hyaluronan. A chemical view on secondary structures of hyaluronan in aqueous solution and its implications is presented in the second chapter. In the following seven chapters many new aspects concerned with the metabolism of hyaluronan are presented, such as turnover of hyaluronan, regulation of the enzyme required for hyaluronan synthesis, the enzymatic pathways of hyaluronan degradation, interaction of hyaluronan with the cell surface and hyaluronan-binding proteins in cartilaginous tissues.

The last seven chapters deal with the role of hyaluronan in the tumour, the immune system, the nervous system, its concentration in tissues and body fluids in disease states, as well as its clinical uses The *Biology of Hyaluronan* is a very well illustrated and updated book which gives an excellent overview of earlier and current researches on chemical, biochemical and biological aspects of hyaluronan. All the questions and answers from the symposium have been included in the book as a stimulating discussion section at the end of each chapter, which gives in general more information on the subject than that contained in the chapter.

The book is a very useful and rare source of information on biological and medical research of hyaluronan It should be recommended to cell biologists, biochemists and physical chemists, embryologists and developmental biologists, oncologists, pathologists and rheumatologists, but also to students involved in the field

Eduardo H. Melo
John F. Kennedy

Analysis of Carbohydrates by GLC and MS. Edited by C. J Biermann and G. D. McGinnis, CRC Press, Boca Raton, Florida, 1989 ix + 292 pp ISBN 0 8493 6851 0 Price US$176 00

The analysis of the monosaccharide residues in carbohydrate containing materials is central to understanding the structure and properties of these materials. With carbohydrate polymers being important as structural components, viscosity modifiers, antigens, informational molecules and chemical messengers, it is important to understand the fine details of structure and how changes in a very limited number of residues can dramatically change the properties or function of the material In the early 1970s G.G S Dutton published two reviews in *Advances in Carbohydrate Chemistry* and *Biochemistry* which provided the GC chromatographic data on a wide range of monosaccharide derivatives In the ensuing 15 years the number of monosaccharides which have been discovered has been considerable, with new deoxysugars, aminosugars, aminouronic acids and branched-chain monosaccharides being found in antibiotics and bacterial polysaccharides, and the need for an up-to-date reference text was overdue

This volume provides a compilation of the methods of derivatization available and the optimum columns and chromatographic conditions, but each chapter also contains a discussion on the relative merits of the various conditions etc together with information useful to the practising analyst and examples of separations from a broad spectrum of subject areas The discussion on hydrolysis and other glycosidic linkage/cleavage methods is very useful with comparisons of the various methods and the degree of decomposition of the monosaccharide residues which can be expected Such aspects are frequently omitted when carbohydrate analyses are performed.