



## Book reviews

**Carbohydrates.** A.F. Bochkov, G.E. Zaikov and V.A. Afanasief, VSP Science Publishers, Utrecht, 1991. pp viii + 146, price DM 127. ISBN 90-6764-118-9.

A simple trisaccharide composed of D-hexoses can have more than a million theoretical structures, only varying in stereochemistry and combination of the monomers. It may be the almost unlimited versatility of so similar looking and similar reacting accumulations of mainly alcoholic functional groups which cause so many students and professionals to shy away from a deeper contact with carbohydrate chemistry. However, the chances of getting along in chemical and biological science without a sound understanding of saccharides and their related compounds are shrinking dramatically. Carbohydrates are omnipresent now, and they are on the verge of becoming a central research topic in applied and fundamental natural sciences.

*Carbohydrates* imparts a basic understanding of carbohydrate chemistry in a lucid and sometimes even entertaining though ambitious style. Its lively use of language makes a demanding chemistry seem more easily understandable, and its way of connecting dry facts with examples or applications of general interest keeps the reader's attention.

The book opens with a chapter on carbohydrate structures, and, besides the common monosaccharide subject, the special structural features of polysaccharides and glycoconjugates are treated equally. A second chapter presents an introduction to classical and modern methods of carbohydrate analysis, followed by a third which describes fundamental synthetic strategies in saccharide and glycoside preparations. The last chapter, on applications, explains basically the multiple biological roles of carbohydrates and has therefore a somewhat misleading title, despite its interesting contents. All four chapters are subdivided in a clear manner and are generously illustrated with formulae and figures.

*Carbohydrates* is highly recommended to everybody who wants to gain an understanding of carbohydrate chemistry but finds access to this topic difficult. Presupposing some knowledge of general organic chemistry, the book introduces the all-important concepts and their applications, thus providing a sound basis for further specialization. However, for people who already have specialist knowledge but who lack an overall picture of modern carbohydrate

chemistry, the book is able to offer the missing framework. For quite another reason *Carbohydrates* is interesting for teachers of carbohydrate chemistry: it demonstrates how to impart this demanding topic excitingly.

John F. Kennedy  
Hans-J. Danneel

**Food: The Chemistry of its Components.** 2nd edition, T.P. Coultate, Royal Society of Chemistry, Cambridge, 1989. pp. xi + 325, price £9.95, ISBN 0-85186 433 3

Food is a complex system which includes four main categories of constituent: proteins, carbohydrates, fats and water. Flavouring and colouring agents, antioxidants, preservatives, emulsifiers, acidulants and other additives are found in small amounts but they, together with the main components, are responsible for the characteristics of a food product, such as taste, stability, texture, and nutritive value.

*Food: The Chemistry of its Components* provides discussion on the chemical structure, properties and behaviour of the macrocomponents of food such as carbohydrate, lipids and protein, as well as of the microcomponents—colours, flavouring, preservatives and vitamins, which are classified in terms of their function.

This book is very readable and the addition of a new chapter on water, minerals and undesirables in this second edition, as well as the revised up-to-date data, makes it an important book for understanding the constituents of food systems. It could be useful for researchers, students and those involved in food science or food technology.

Regina C.M. Paula  
John F. Kennedy

**Industrial Utilization of Renewable Resources. An Introduction.** H. Harry Szmant, Technomic Publishing AG, Basel, Switzerland, 1990. pp. xi + 188, price US\$29.00, SFr 126, ISBN 0 87762 4437

Due to the continuous and tremendous energy output of the sun, mankind can depend on the constantly