

also play a role. All such considerations are explored in Chapters 7–9. In the final chapter, a potential set-up of a pressure-controlled stirred vibrating fluidised bed reactor is presented for the gas–solid hydroxyethylation of potato starch. The process is optimised and compared to the classical slurry process. Further, additional research topics are defined which are required to obtain a safe and accurate scale-up.

Overall, this is an interesting and extremely informative thesis which is well presented and thoroughly referenced. It should prove useful to anyone working within the starch industry or those in academia with interests in starch chemistry.

Charles J. Knill
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Sugarless — Towards the Year 2000. Edited by A.J. Rugg-Gunn. The Royal Society of Chemistry, Cambridge, UK, 1994. x + 197 pp. Price £37.50. ISBN 0-85186-495-3.

It is scientifically well established that frequent consumption of sugar, particularly between meals, increases the risk of dental caries. The World Health Organization (WHO), therefore, recommends the use of non-cariogenic sweeteners in frequently consumed snacks. Over the past 15 years, epidemiologists have charted a pattern of decreasing caries incidence amongst children in the majority of industrialised societies. However, many children still suffer considerable dental health problems.

This volume is based on the proceedings of an international symposium held at the University of Newcastle-upon-Tyne, UK which provided an opportunity for the discussion and exploration of ways to reduce sugar consumption in the United Kingdom, and to review the progress already achieved in this endeavour. The programme consisted of talks by nutritionists, dentists, food scientists, industrialists and experts on food legislation. The two principal groups of sugar containing products that were targeted were confectionery and liquid-oral medicines.

Sections in this volume chart the considerable progress that has been achieved in recent years, as well as indicating areas where further work is required in order to facilitate and encourage the move towards a sugarless diet. Specific products covered include sugar-free chocolate, sugar-free gum and non-sugar medicines. Information and discussion on the legal status and regulations regarding non-sugar sweeteners is also provided. Other topics covered include the sugar eating habits of children and adults, manufacturing opportu-

nities with non-sugar sweeteners, and advice to consumers on the selection of medicines.

This is a well presented and informative volume, dealing with important consumer conscious issues and is recommended for those with interests in any area of food science.

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Environmental Chemistry. By Stanley E. Manahan. Lewis Publishers, CRC Press, USA, 1994. 811 pp. Price £48.00. ISBN 1-56670-088-4.

In past decades, chemical processes producing massive amounts of a wide variety of chemicals have given humankind an unprecedented standard of living and quality of life. However, this has exacted a price of pollution and environmental degradation. On the other hand, it is only through the enlightened applications of chemistry that environmental quality can be improved. It is essential, therefore, that anyone entering the chemical profession have a basic understanding of environmental chemistry and its applications.

Environmental Chemistry may be defined as the study of the sources, reactions, transport, effects and fates of chemical species in water, soil, and air environments and the effects of technology thereon. All major areas of environmental chemistry are discussed in the revised sixth edition of this classic book, which is organised in 26 chapters, including Aquatic chemistry, Atmospheric chemistry, Chemistry of the geosphere and soil, and Hazardous wastes. New chapters have been added to the sixth edition to reflect the evolving nature of environmental chemistry, and these include: Environmental science and technology, Environmental chemistry and chemical cycles, Technology, Resources and energy. Also included for the first time are sections on the Fundamentals of Chemistry, Organic chemistry and Environmental biochemistry.

This book is written with two major goals: to provide an overview of chemical science within an environmental chemistry framework; and to provide the basics of environmental chemistry for those who need to know about this essential topic for their profession or for their overall education. *Environmental Chemistry* will help its reader to understand the ways in which this discipline can contribute to environmental preservation and improvement. This essential reference is a must for all environmental scientists.

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