

Book Reviews

***The Maillard Reaction in Foods and Medicine* O'Brien, J., Nursten, H.E., Crabbe, M.J.C., Ames, J.M. (Eds.). Cambridge: The Royal Society of Chemistry, 1998. (ISBN 0854047336, 464pp, Price £69.50)**

There is probably only one chemical reaction which is of sufficient importance that it can be the basis of an ongoing series of international symposia. That reaction is the Maillard reaction. It was initially thought to be a simple nucleophilic addition between amino groups and carbonyl groups which may be of importance in the browning processes which occur when food is processed. More recently it has been established that it plays a key role in many diseases including diabetes, ageing, and cancer. This area alone has stimulated, in the past few years, a rapid development in research into the complexities of the reaction.

The Maillard Reaction in Foods and Medicine is the compilation of the proceedings of the 6th International Symposium on the Maillard reaction. The book contains the manuscripts of the oral presentations (including the plenary lectures) and abstracts of the poster presentations. The manuscripts of the oral presentations are grouped into sections reflecting the diverse interest in the Maillard reaction from basic chemistry through food and proteins to medical problems. The first section, Reaction Mechanisms, contains 13 chapters, several of which report radical new insights into the complexity of the formation and rearrangement of Amadori products. Sections on Kinetics and Analytical Aspects, Food Technology, and Flavour Chemistry follow. The final two sections, Toxicology and Antioxidants, and Health and Disease in which there are 27 chapters, reflect the growing recognition of the importance of this reaction and the effect of its products in numerous medical conditions. Although only very short abstracts of the poster presentations are included in the proceedings, the importance of this communication to the success of the symposium by presenting state-of-the-art research is immediately obvious. Full correspondence addresses are included for all authors so enabling further information to be obtained.

This single volume has brought together current research across the many disciplines where the Maillard reaction is recognised as being of importance. By not restricting topics to those which would be of interest only to chemists, or food scientists, or clinical investigators it has succeeded in merging different research strategies and approaches which should stimulate further studies. It is highly recommended.

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***GC/MS A Practical User's Guide*, Edited by McMaster, M., & McMaster, C., New York: Wiley-VCH, 1998 (xii + 167pp. Price £38.95. ISBN 0-471-24826-6)**

Gas chromatography (GC) is a powerful technique for detection and analysis of organic compounds. A disadvantage of GC is a spectroscopy requirement, usually mass spectrometry (MS), for confirmation of peak identity since different chemical substances sometimes come in the same retention time. Mass spectrometry is based on the ionisation of compounds when they are bombarded with a beam of electrons to form positive molecular ions which subsequently break down to smaller fragments. The combination of GC and MS systems forms an instrument capable of separating mixtures into their individual components and identifying and providing quantitative and qualitative information on the amounts and chemical structure of each compound. Nevertheless, GC/MS still possesses a weakness: its volatile component requirement. Owing to this requirement, it has some molecular weight limits. Recently, liquid chromatograph (LC) connected to a mass spectrometer has been developed to offer the best potential for the laboratory. With LC/MS systems almost anything that can be dissolved can be separated without much sample preparation or derivatisation.

This book *GC/MS: a practical user's guide* gives a general introduction of GC/MS and LC/MS, such as systems and costs in the opening chapter. Details of sample preparation, GC/MS instruments and the procedure of setting up and running a GC/MS system are presented in the following chapter. The second part of this book deals with GC/MS optimisation such as setting up and operation systems, data processing, and system maintenance. Specific applications of GC/MS such as in environmental testing and in structural interpretation are discussed. Modern GC/MS systems such as ion trap GC/MS, triple-quadrupole GC/MS, laser time-of-flight GC/MS (GC/TOF-MS), and Fourier transform GC/MS (GC/FT-MS) are also presented. Finally, many techniques of