

will also prove extremely useful for those in academia with interests in food analysis for nutrition labelling and hazardous contaminants, as well as undergraduate and postgraduate students in such disciplines.

**Charles J. Knill
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Miscellaneous Foods by W. Chan, J. Brown and D.H. Buss. The Royal Society of Chemistry, Cambridge, UK, 1994. vii + 193 pp. Price £27.50. ISBN 0-85186-360-4.

Miscellaneous Foods presents an authoritative update on up to 82 nutrients for 418 foods. The foods covered include fats and oils, sugars, preserves, confectionery, savoury snacks, beverages (including alcoholic beverages), soups, sauces, pickles, other miscellaneous foods and baby foods.

The data in *Miscellaneous Foods* are from the UK Nutrient Databank which is maintained by The Royal Society of Chemistry and the Ministry of Agriculture, Fisheries and Foods. A range of printed and computer-readable products is regularly produced from this databank. This is therefore a valuable source of information with easy access to anyone in the field.

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Isopentenoids and Other useful Products: Evolution and Function — ACS Symposium Series 562. Edited by W.D. Nes. American Chemical Society, Washington, DC, USA, 1994. viii + 255 pp. Price \$69.95. ISBN 0-8412-2934-1.

Compounds without biochemical precedent may derive from hitherto unknown or defunct biosynthetic pathways, or may in certain cases be geological transformation products. The diverse range of isopentenoids, including steroids, in sediments billions of years old demonstrates the antiquity of their biosynthetic pathways. This volume describes the evolution of pathway sequencing of natural products and critically examines the selection pressures that influence change in the structure of natural products. The structure and stereochemistry of a range of natural products, including isopentenoids, sterols, triterpenes, lignins and fatty acids is addressed in some detail.

Particular attention has been given to isopentenoids and sterols because of their importance in biology. Sterols are chiral natural products that form biomolecular complexes in cells. They have extremely widespread distribution in living organisms, e.g. in bacteria, algae, fungi and higher plants and animals.

The chapter on the evolution of lignan and neolignan biochemical pathways should be of some interest to carbohydrate chemists and biochemists. Some lignans and neolignans participate in lignin synthesis and hence have important roles in determining physicochemical

and mechanical properties of cell walls, whereas others act as antioxidants and biocides.

This volume was developed from a symposium at the 205th National Meeting of the American Chemical Society in Denver, Colorado, USA. It is an interesting and extremely well-referenced volume that is most suitable for graduates and professionals in all areas of natural product chemistry, biochemistry and phytochemistry.

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Bacterial Cell Wall. Edited by J.-M. Ghuysen and R. Hakenbeck. Elsevier, Amsterdam, 1994. xxiv + 581 pp. Price Dfl. 350; US\$200.00. ISBN 0-444-88094-1.

Prokaryotic and eukaryotic cells possess many differences between each other, especially differences in the walls of the cell which are not only morphological. Bacterial cell walls contain unique polysaccharides, proteins and lipids. Due to the lack of internal vesicles, the bacterial cell wall is the main organelle producing biomolecules which bacteria require. Thus, research of bacterial cell wall properties and functionality is of great interest to the pharmaceutical and biochemical industry.

Bacterial Cell Wall aims to provide an integrated collection of contributions from respected authorities on the subjects forming a fundamental reference book to the bacterial cell wall and consists of 27 chapters. The history of bacterial cell wall research is summarised in Chapter 1. Peptidoglycans, the basic matrix of the bacterial cell wall, are discussed from Chapter 2 to Chapter 8. The topics include structure and biosynthesis of the cell wall, related enzymes like penicilloyl serine transferase, and peptidoglycan hydrolases. Teichoic and lipoteichoic acids, lipoglycan, and cell-wall associated proteins are discussed relating to the cell wall of Gram-positive bacteria in Chapters 9–11. Lipopolysaccharide, lipoproteins, porin (outer membrane channel protein), and the secretion mechanism of Gram-negative bacteria are highlighted in Chapters 12–20. The periplasm, the trans-shipment region in the bacterial cell wall, is focused on in Chapter 21. Signal transduction pathways on the bacterial cell wall, which are important for bacteria to adapt to changing environmental conditions (Chapters 22–24) and acquired resistance to known antibiotics (Chapters 25–27) are discussed.

This book covers the basic concepts as well as virtually all subject areas involving the bacterial cell wall, even though no chapter is spared for the cell walls of *Mycobacterium tuberculosis* and *M. leprae*, as the Editors mention. This is undoubtedly a worthwhile purchase for research groups working on bacterial biology.

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