

## Topics in Chemical Mutagenesis

Series Editor F J de Serres. *Volume 1: Genotoxicity of N-nitroso Compounds*, edited by T K Rao, W Lijinsky and J L Epler. pp 271. (1984). *Volume 2: Single-cell Mutation Monitoring Systems*, edited by A A Ansari and F J de Serres. pp 289. 1984. both \$39.50  
ISBN 0-306-41445-7 (Vol 1) and 0-306-41537-2 (Vol 2)

A series of specialist books of interest to researchers in mutagenesis and carcinogenesis has been launched by Plenum in conjunction with de Serres, largely to provide detailed updates on their monumental *Comparative Chemical Mutagenesis* (1981). Unlike this predecessor, these books are specially commissioned and are not conference proceedings. From these first two volumes, this series should prove a valuable, albeit costly, addition to the library of any institute involved in genotoxicological research.

Volume 1 provides comprehensive and detailed reviews of virtually all aspects of nitroso compound biology with only one surprising omission: there is no mention to the one naturally occurring *N*-nitroso compound, streptozotocin. Volume 2 is devoted exclusively to mammalian cell systems and covers not only mutational systems (based on haemoglobin variants) and cytogenetic methods (including SCE) but also assays for unscheduled DNA synthesis. The authors have, on the whole, succeeded admirably in not only reviewing their subjects but providing many useful experimental protocols rather after the style of *Methods in Enzymology*. For readers of *Biochemical Education* whose interest in mutagenesis is primarily educational, certain of these protocols could prove expensive however.

J H Parish

## Molecular Biology and Pathogenesis of Coronaviruses

Edited by P J M Rottier, B A M van der Zeijst, W J M Spaan and M C Horzinek. pp 404. Plenum Press, New York and London. \$57.50 ISBN 0-306-41616-6

The family of coronaviruses has attracted considerable attention in recent years from both molecular virologists interested in their unique replication strategy and from viral pathologists concerned with mechanisms of virus persistence and neurotropism displayed by certain mammalian coronaviruses. This volume consists of over 40 full research papers delivered at an EMBO workshop of the same title which was held in June 1983. Although much material has appeared elsewhere in journals, RNA virologists will appreciate the general availability of a comprehensive review volume and, in particular, the two useful overview chapters on molecular biology and pathogenesis.

G E Blair

## Drug Resistance in Bacteria

Edited by S Mitsuhashi. pp 429. Japans Scientific Societies Press, Tokyo and Thieme-Stratton Inc, New York. 1982. DM 148. ISBN 0-86577-085-9

This book represents the published proceedings of a conference. It does not pretend to be a particularly systematic survey of the field, but several of the papers are particularly interesting short accounts of work. The papers are divided into nine sections as follows and I have indicated in brackets those papers which particularly caught my eye for one reason or another.

Replication (IS Mutagenesis by Arber and Iida, Replication of R6-5 by Timmis *inter al*); Transposition (Tn2603 by Yamamoto *et al*); R Plasmids (Macrolide Resistance Mechanisms involving RNA modification by Horinouchi and Weisblum); *Pseudomonas* pyocyanin genes (Shinomiya *et al*); Lactamases (for some reason

there is an extremely interesting article by Umezawa on aminoglycoside resistance in this section); Penicillin Binding Proteins (all four articles are of interest); Resistance Mechanisms (interesting reviews by Davis and Silver *et al*); Epidemiology (this includes the first paper I have read on transfer of drug resistance in *Bacteroides* by Umemura *et al*); New Drugs (this includes an interesting paper by Inoue *et al*, on *nal* mutants). In summary this book contains several useful papers and can be recommended as part of a collection on drug resistance in a medical or biochemical library.

J H Parish

## Lipids in Plants and Microbes

By J L Harwood and N J Russell. pp 162. George Allen & Unwin, London. 1984. £19.50 or £7.95 (paperback).

ISBN 0-04-574021-6 or 0-04-574022-4

This relatively short book admirably describes the diversity of lipids within the plant and microbial (bacterial and fungal) kingdoms, their structures, importance and metabolism. It pulls together topics and interests of workers in many fields, without falling into the trap of becoming a morass of detail.

A short introduction is followed by a brief but thorough discussion of the major lipid types, and includes fatty acids, acyl lipids, terpenoids and sterols, cutin, suberin and waxes in plants, and cell wall and envelope lipids in bacteria. The next chapter covers the subcellular distribution of lipids in the different membrane structures found in plants and micro-organisms, and mentions aspects of asymmetric lipid distribution in bacterial cell membranes.

Metabolic aspects are outlined concisely in Chapters 4 and 5 and include the formation *de novo* of saturated and unsaturated fatty acids, and their subsequent incorporation into appropriate lipids. Type I and II fatty acid synthetases are described. Biosynthesis of a range of terpenoids and other complex lipids is also covered; in addition, degradation of acyl lipids and oxidation of fatty acids are dealt with separately. Comparative aspects between plants, fungi and bacteria are emphasized, and this provides a particularly useful feature of this book throughout.

The final chapter touches upon the role of lipids in membrane structure and function. It includes such variations in nature as the saturated ether-linked alkyl groups residing in the bidiphytanyl tetraether lipids in archaebacteria, and the role of lipopolysaccharide in the virulence and survival of pathogenic species. The book concludes with selected review references for each chapter.

The text is relatively free from error, although the cyclopropane structure has been printed incorrectly (Fig. 2.1) and *N*-acyl derivatives are not esters (p 9). More seriously, triacylglycerols are found in *Streptomyces* spp (see p 10, 93 and 144) whereas di- and monoacylglycerol species previously detected probably arise through lipolytic action. Despite these minor criticisms, this book can be readily recommended to all workers interested in the general background to problems related to plant and microbial lipids. It is modestly priced.

N M Packer

## Biochemistry of Differentiation and Morphogenesis

Edited by L Jaenicke. pp 301. Springer-Verlag, Berlin, Heidelberg, New York. 1982. ISBN 3-540-12010-6

A collection of papers presented at the Mosbach Colloquium der Gesellschaft für Biologische Chemie. Useful as a broad summary of current research in this very large area. Topics include gene expression, transfer of genes, cell differentiation, cell recognition and morphogenesis.

N F Cooper