BOOK REVIEWS

Microbial Physiology, 3rd edition

A. G. MOAT and J. W. FOSTER. 1995. ISBN 0-471-01295-5. Wiley-Liss, Inc., New York, Pp. 580. £100.00.

This is the third edition of a text designed to cover the ever-widening field of microbial physiology. In this volume the authors have felt it necessary to revise completely the material included and the order in which it is presented in order to ensure that the reader has a good grasp of molecular genetics and molecular biology before more detailed aspects of microbial cell structure, intermediary metabolism and growth are covered. All of this factual information is compressed into 12 chapters within some 560 pages. Some of these chapters are more extensive than others, especially those on Macromolecular Synthesis and Processing, Bacterial Genetics, Regulation of Prokaryotic Gene Expression, and Carbohydrate Metabolism and Energy Production. When one begins to read the text in some detail, it is clear that the intended audience for this textbook is the undergraduate student in microbiology and emphasis is placed on the historical basis of the subject. However, the authors have perhaps taken this concept too far since many of the illustrations are taken from articles that are 20–30 years old. The quality of reproduction is poor in many cases and fails to convey an accurate message to the reader.

Each chapter is liberally sprinkled with diagrams showing various molecular mechanisms, chemical structures and metabolic pathways. However, the quality of some of the printing makes the legibility of the material fairly difficult. This is especially true when one tries to follow some of the biosynthetic pathways. The scale of some of the diagrams is too small for easy reading and interpretation. Few of these diagrams distinguish the important from the less important information so it may be difficult for the average student to decide what should be retained for examination purposes. It may be that the publishers have sacrificed quality for selling price of the finished product.

Notwithstanding these criticisms in the presentation of the text, the authors have provided a comprehensive account of the diverse physiological processes which take place within the microbial cell. The text is concise and full of factual information which is selectively referenced at the end of each chapter. Only key papers are cited for further reading by the enquiring student. However, in several instances the references are 10–15 years old which might make their access more difficult.

One other point that should be stated in this review is the apparent lack of any attempt by the authors to relate the growth characteristics of micro-organisms to the more detailed biochemical processes occurring within and outwith the cell.

Although it is some years since the reviewer studied microbial physiology and subsequently taught several aspects of the subject, it is my impression that there are better texts on the market which will appeal to the British undergraduate student in microbiology.

C. G. GEMMELL

The Molecular Repertoire of Adenoviruses I Virion Structure and Infection

Edited by W. DOERFLER and P. BOHM. 1995. ISBN 3-540-58828-0. Pp. 280. DM 192.00 (Hardback).

The Molecular Repertoire of Adenoviruses II Molecular Biology of Virus-Cell Interactions

Edited by W. DOERFLER and P. BOHM. 1995. ISBN 3-540-58829-9. Pp. 278. DM 185.00 (Hardback).

The Molecular Repertoire of Adenoviruses III Biology and Pathogenesis

Edited by W. DOERFLER and P. BOHM. 1995. ISBN 3-540-58987-2. Pp. 310. DM 198.00 (Hardback).
All three volumes published by Springer Verlag, Berlin

These three volumes were initiated to mark the 40th anniversary of the discovery of adenoviruses in 1953–54. Since their discovery, the clinical spectrum of disease caused by adenoviruses has been shown to include respiratory, gastrointestinal and ocular infection. Model systems using adenoviruses have also become established as favourite tools to dissect intracellular biological events in mammalian cells. The emphasis in these books is firmly on molecular aspects of adenovirology and, in particular, on the model systems that adenoviruses provide for molecular biologists. Mechanisms for virus-cell receptor recognition, virus penetration, transcriptional control mechanisms, gene expression in mammalian cells and molecular suppression of host defence mechanisms are covered in thorough and impressive detail.

This basic research could soon have relevance to clinical practice as adenoviruses are being considered as vectors for human somatic gene therapy. Two chapters in Volume III describe replication deficient recombinant adenoviruses and adenovirus-DNA transfection complexes as possible approaches. I felt, however, that an opportunity was missed to bring together basic and clinical research. A clinical overview of the problems to be overcome in the gene therapy field would have been most welcome.

In summary, these three volumes provide an authoritative review of adenovirus molecular biology. There is, however, little coverage of clinical or diagnostic material and as such they cannot be recommended as essential reading for the busy clinician.

D. J. WOOD

Clostridial Neurotoxins

Edited by C. MONTECUCCO. 1995. ISBN 3-540-58452-8. Springer Verlag, Berlin. Pp. 278. DM 190.00 (Hardback).

The 12 chapters of this multi-author book cover the main