BOOKS RECEIVED

The pathogenesis of infectious disease

The first edition of Professor Mims' book was received with considerable enthusiasm. Rather than dealing with microorganisms from the systematic or clinical point of view, he considered the interplay between the organism and its host. The study of microbial pathogenicity has always been one of the most demanding areas of microbiology dealing as it does with two variables—host and parasite. Professor Mims succeeded in explaining the subject with brevity and clarity, using examples from all areas of microbiology. Although a virologist, he did not allow his own subject to distort the book's balance.

The quality of the first edition is reflected in the 6-year gap between it and the second edition. The changes are minor: some revision and updating of references and of the sections on phagocytosis, immunity and diarrhoea, together with a new section on the role of infectious agents in diseases of unknown aetiology. Little more is needed. One can, of course, find mistakes, generalisations and oversimplifications, but these are few and far between and almost inevitable in a book of this breadth written by a single author. The price has been kept remarkably low and the second edition is only slightly longer than the first. It remains excellent value for money and will, I am sure, long continue to be a standard text.

C. S. F. Easmon

Principles and practice of disinfection, preservation and sterilisation

This large book is divided into three sections, on disinfection, preservation and sterilisation. The disinfection section begins with a brief history, from 450 BC to the present day, and then covers, in great detail, the chemistry of 15 different groups of disinfectants. The chemistry is well described, in detail not easily obtained elsewhere, together with the antimicrobial effects, but includes some older references that could be misleading to an inexperienced person. After considering factors influencing the efficacy of disinfectants, such as concentration, temperature, pH, the presence of organic matter and the type of organism, the different tests for investigating antimicrobial activity are described, including practical tests for instruments and surfaces, with useful references on practice and statutes in other countries. Disinfectant mechanisms and kinetics are covered in an excellent chapter, followed by discussion of the biochemical and biophysical actions of disinfectants on different components of the cell and its wall; these are summarised in a useful table and diagram, comparing different mechanisms of the various groups. A short chapter on microbial resistance, dealing mainly with heavy-metal ions, is followed by the problems of hospital disinfection. The need for a disinfectant (or cleaning) policy is emphasised, as well as the unnecessary use of disinfectants on walls and floors when detergent suffices; care of anaesthetic equipment is carefully considered. The section ends in a discussion on the use of disinfectants as "antiseptics", dealing mainly with skin and burns, and of the problems of plasmid-coded resistance.

The second section reviews the preservation of industrial products and is of no relevance to the medical microbiologist. The third section concerns sterilisation. The kinetics of thermal death (D value) are well explained, as are the conditions affecting it, and there is a chapter on the physics of autoclaving. Industrial applications are reviewed for the medical and food industry, concentrating on thermal processing of contaminated products and highlighting the microbial risks. Other methods of sterilisation, namely, radiation, gas (ethylene oxide) and filtration, are
well explained. The final chapter on the “Control of the sterilisation process”, is the most important one in the book for the medical microbiologist; it gives a good overview of the subject, with full details of physical, chemical and biological monitoring, including perspectives in “sterility control”.

In conclusion, this book covers an enormous field in great depth, although a shorter version for medical microbiologists would be very useful. Its very large reference collection should prove invaluable both for research and for clinical microbiologists. This book also offers a better scientific understanding of the subject for many of those clinical and allied workers who are expected to apply their skills in this field.

D. V. SEAL

Laboratory-acquired infections


This is an attractively presented, well produced and conveniently sized book that deals comprehensively with the subject of laboratory acquired infections. The text is well researched with over 700 references, bearing witness to the author’s extensive reading and long standing interest in the subject.

Mr Collins is well known in microbiological circles for his forthright views on safety and these are reflected in the method of presentation. Indeed, his use of the first person singular may prove to be a source of irritation to many but it is perhaps excusable in certain circumstances. For instance, some readers will learn for the first time why the Howie Code split Category B organisms into two groups. The fact that the author makes it clear that he was a member of the Howie Working Party gives authority to his explanation that this was done to avoid the publication of a minority report.

In the excellent chapter on microbiological safety cabinets, it is not clear why the Interim Advisory Committee, convened to update the Howie Code, still favours the Class I to the Class II cabinet in which to handle pathogens. One is left with the impression that cost, installation and maintenance are the important considerations whereas the Committee view is based on the difference in rate of flow of the air intake into the working aperture.

In the chapter on autoclaves, laboratories that have purchased unsuitable models are criticised and this is timely. His comment that thermocouples “are copper-constentan wires covered with PTFE” is true, but, as other types are available, the statement should not be made without qualification. To say that such thermocouples “are very thin and will not interfere with the door seal and gasket of the autoclave” is not necessarily true for all autoclaves and it is certainly not the best way to study temperature gradients in loaded autoclaves.

Mr Collins deals firmly with sceptics of the need for safety measures in laboratories. Indeed, he goes so far as to say that those laboratories that found themselves committed to considerable expenditure to conform to the Howie Code are just those which conceivably were guilty of apathy in this field in the past.

Many of the illustrations are of high quality and clearly illustrate points in the text but those which illustrate containers for the transport of laboratory specimens and the documentation required to get pathogens through customs are of poor quality and are therefore unhelpful. In spite of these minor criticisms the book represents a prodigious degree of energy. It could be read to advantage by all who work in this field. Certainly, all who teach microbiology should possess a copy as it brings together under one cover a vast amount of data which could only be obtained by the pursuit of scattered articles or reference to a number of American text books.

There is little doubt that this is the definitive work on this subject in the UK and the author is to be congratulated.

A. E. WRIGHT