

BOOK REVIEW

DISINFECTION AND STERILIZATION. Theory and Practice. By G. Sykes. Pp. xviii + 396 (including Index). E. and F. N. Spon, Ltd., London, 1958. 75s.

There are several established works on disinfection and sterilisation, but the rapid accretion of information on these subjects makes any new publication acceptable if it has been competently prepared. This book is welcome on this score as well as on others. The greater part of the text is so well written as to be understandable, and this is an achievement in a field in which the vast amount of experimental results obtained has not been matched by a corresponding advance in fundamental knowledge. Microbiologists derive from a variety of scientific disciplines; many experiments providing comparable results have been designed for quite different purposes and, too often, with an inadequate understanding of the essential principles of biological investigations. The writer of such a book must attempt the almost impossible task of correlating published information, and most microbiological books suffer in this attempt. The author of this book has not always been more successful in this than his predecessors; for example, parts of the chapter on phenols and related substances lack the precision of most of the text. Occasionally the evidence presented does not seem to support the author's conclusions. This however is far from being general throughout the book, and those parts of the subject where the experimental evidence is consistent and particularly those in which the author has had personal experience are presented with admirable clarity.

The general plan is not very different from that of similar publications, and this is perhaps unfortunate as the first part on the Theory of Disinfection and Methods of Testing is not the best in the book. Possibly because bacteria often behave similarly to chemical reagents microbiologists have attempted to explain the metabolism, reproduction and death of cells in terms of the equations and graphs of physical chemistry. Mr Sykes, although himself a chemist, clearly recognises this as an oversimplification, and commences his chapter on the theory of disinfection by a discussion on microbial enzymes. He continues, however, with a section on the "dynamics of disinfection" with the latest elaborations, which he does not marry too happily with the remainder of the chapter. The next two chapters on methods of testing disinfectants and antiseptics reflect the author's great practical experience although there is considerable variation in the amount of critical attention given to the different methods referred to. It hardly seems necessary to describe the phenol coefficient tests in full detail as this detail is readily available to those who need it, and the space so used could have been allocated to lengthen descriptions of other tests and to an assessment of their merits and applications. So many of these tests, and indeed of the experiments assessing sterilisation procedures, depend on the practicability of producing visible growth from small numbers of damaged cells, that a chapter might well have been allocated to this aspect.

Part II, which discusses methods of sterilisation, and Part III, on disinfection and sterilisation, are very good, and all pharmacists who are concerned with these subjects should read them. Nevertheless, anyone who expects to find a complete pharmaceutical treatise telling him how to sterilise any particular pharmaceutical preparation or material is likely to be disappointed. Information on the sterilisation of hypodermic syringes, plastic tubing and rubber gloves and dry powders where it occurs is incidental and sometimes is not even indexed. Chemical

BOOK REVIEW

disinfectants are discussed in five chapters following the usual pattern in such books, and there are references to most substances in current use. It is a commentary on the quality of much experimental work in this field that the author, after noting the limitations of the phenol coefficient earlier, has perforce to refer to such coefficients in providing quantitative information on a variety of substances for which this coefficient has little significance. There are no chapters on the antibiotics and sulphonamides because, as the author explains, they are already covered in other volumes. So are most other antibacterial substances, and it is doubtful if antibiotics can be denied a major role in a modern book of this sort; indeed there are frequent references to them in the text. The last part of the book is on preservatives and preservation and deals with a subject in which the author has himself worked. As with the rest of the book wherever this applies, the section is well done. It is a pity that it could not have been expanded as it is obvious that the author has much more to say on this subject. Sufficient is written, however, to show how much more work has to be done on the preservation of pharmaceutical preparations.

The book is a competent and useful work which does credit to the author and to the publishers. The first impression is likely to be rather more favourable than subsequent impressions because the subjects described are in a condition which makes any book on them unsatisfactory to its readers unless the author chooses to simplify by an autocratic selection of evidence which Mr. Sykes does not. It should not be regarded as a pharmaceutical textbook written primarily for the pharmacists and students of pharmacy; it is obviously not intended to be so circumscribed. However, the author's long experience in pharmaceutical microbiology produces this effect to some degree, and many pharmacists and pharmaceutical students will find the book useful and, until a more specialised work becomes available, even essential.

K. R. CAPPER.