

BOOK REVIEW

Book Review

MANUAL FOR THE IDENTIFICATION OF MEDICAL BACTERIA. By S. T. Cowan and K. J. Steel. Pp. x + 217 (including Index). Cambridge University Press, London, 1965. 50s.

This very useful and relatively inexpensive book may be described as a working guide to identification which all microbiologists will welcome. The book is a development of an earlier publication of the authors—*Diagnostic Tables for the Common Medical Bacteria*—originally published in the *Journal of Hygiene*.

There is a common sense approach to the various problems of identification and a refreshing lack of dogmatism in dealing with subtle shades of bacterial variation. The authors set out clearly what they hope to accomplish and give useful references to standard works on those aspects they choose to neglect.

The main substance of the book is contained in the Tables, or rather Table-figures since they combine both functions. The authors have compiled two groups of tables, to be used according to whether the organism is Gram-positive or Gram-negative. If the organism is Gram-negative then a first-stage diagnostic table is used which distinguishes genera on the basis of shape, motility, growth in air, catalase reaction, oxidase reaction, carbohydrate breakdown, and the Oxidation-Fermentation (O-F) test. Gram-positive genera are distinguished by similar tests with the additions of spore production and acid-fastness.

After this preliminary diagnosis, more precise identification is achieved by the use of second stage, and in some cases, third stage tables. The second stage tables contain many more tests which are mainly biochemical. For example the table for *Pseudomonas*, *Chromobacterium*, *Flavobacterium* and *Acinetobacter* species contains 18 tests.

These tables are preceded by a useful, critical section on the tests used and should serve to dispel at least some illusions. It is surprising to find no mention of the usefulness of phase contrast microscopy in establishing the presence of spores. This method is rapid but depends, of course, on the possession of phase contrast facilities. It is interesting to note the means of identification explicitly not used. Early in the book the reader is informed that he will not find diagrams of the different shapes, edges, surfaces, and elevations of colonies, and of the shapes of liquefaction seen in gelatin stab cultures. Such characteristics are indeed referred to as "relics of nineteenth-century bacteriology".

The section on Theory and Practise of Bacterial Identification is crammed with information of particular relevance to the medical bacteriologist and the usefulness of multitest media and microtests is discussed.

The treatment of sterilization of media does not quite match the standard of the rest of the book. The relationship between volume of medium and time to achieve a given temperature in an autoclave could be given quantitatively. It seems inadequate merely to suggest increasing the time of autoclaving when the volume of medium exceeds 1 litre. Reproducibility of heat treatment would seem to be necessary for reproducibility of medium. The usefulness of membrane filters might well have received more attention than the 3 lines allotted in the section on sterilization by filtration. The sections on culture media, staining, biochemical methods and particularly micromethods are most useful.

The style of writing makes for easy reading as does the excellent general layout of text and tables. The index is comprehensive and there are about 700 references to original work. This book is indeed a fitting memorial to Dr. Steel whose death in 1964 was a loss not only to Bacteriology but also to Pharmacy where his career began.

M. R. W. BROWN.