

BACTERIOLOGY AND IMMUNITY

Topley and Wilson's Principles of Bacteriology and Immunity

Third edition, revised by Prof. G. S. Wilson and Prof. A. A. Miles. Vol. 1. Pp. xi + 970 + xlv. Vol. 2. Pp. viii + 971-2,054 + xlv. (London: Edward Arnold and Co., 1946.) 2 vols., 60s. net.

THIS edition, the third in seventeen years, following four printings of the first and seven of the second edition, indicates a large and steady demand for the work. The late Prof. Topley had withdrawn from authorship, and the latest revision has been undertaken by Profs. Wilson and Miles. The plan of the work, which is divided into four parts in two volumes of about a thousand pages each, has remained as before.

Part 1, by way of introduction, treats of "General Bacteriology", including the history of the science, bacterial morphology and metabolism in their broad aspects, with subsequent chapters on matters of practical interest to the hygienist and physician concerning disinfection and what may be summed up as chemotherapy. Then the phenomena of antigens and antibodies are considered, and this part closes with sections on bacterial variation, classification and the bacteriophage. Part 2, headed "Systematic Bacteriology", commences with a short description of methods of obtaining pure cultures of bacteria and identifying them. Following this, a series of chapters deal with the various groups of bacteria in a sequence which would probably not be used in teaching the subject, since it begins with Actinomyces, then goes on to *Erysipelothrix* and *Listerella*, next to the tubercle bacillus group, diphtheroids, anaerobic or micro-aerophilic Gram-negative bacilli of the Fusiformis group, etc., while *Streptococcus* and *Staphylococcus* come later. This part, which finishes with the general properties of the animal viruses, comprises a most extensive collection of the characters of a very large series of bacteria and will prove of much use to workers in the fields of veterinary and economic bacteriology as well as to medical bacteriologists. Part 3, which occupies three hundred pages, is concerned with "Infection and Resistance". These important subjects are considered very fully and with a wealth of detail. Part 4, the final division of the work, is entitled "The Application of Bacteriology to Medicine and Hygiene". Here the chapter headings correspond to a considerable extent with those in Part 2, and much information is given for clinicians and administrators about the diseases caused by the pathogenic members of the groups discussed earlier. But, of course, complete correspondence is impossible, since, for example, suppuration is due to a wide variety of organisms. Toward one third of the way through the list one finds in sequence chapters on "Cholera", "Meningitis", "Gonorrhœa", "Scarlet Fever and other Diseases due to Hæmolytic Streptococci", "Pyogenic and Wound Infections", "The Bacteriology of Rheumatic Infections and of Endocarditis". This indicates that meanwhile only piecemeal treatment of bacteriology is possible. Such is likely to remain the case until 'general' bacteriology is studied for its own sake and the chief interest ceases to be the production by a given organism of a specific disease or some particular chemical reaction. However, it may be argued whether the most suitable arrangement is secured by separating by more than eight hundred

pages consideration of the microscopic and cultural characters of the tubercle bacillus and the diphtheria bacillus from the sections on tuberculosis and diphtheria; after all, the production of these diseases is the most noteworthy characteristic of the two organisms. Accordingly, it will be clear that the work is essentially one for reference. To the practising bacteriologist the book is invaluable; it gives very full lists of publications, and the attention paid to recent literature effects a great saving in the reader's time by indicating what he ought to consult in the original. It may, of course, be considered captious to criticize the book for what it does not contain, but, like a number of other text-books on bacteriology in English, it omits very largely details of procedures.

While it is self-evident that skill in bacteriological methods cannot be acquired except by practical work in the laboratory, nevertheless a considerable amount of description and specification in print is required for reference. Also, advances in knowledge can come only through the channel of experimental methods. Therefore, it is to be regretted that no companion volume is available dealing more extensively with the authors' laboratory practice. A further loss of another kind is entailed by limiting consideration to the ordinary bacteria, spirochetes, rickettsiæ and viruses, while omitting pathogenic Protozoa and Fungi. The pathogenic Protozoa, which are so like many of these other organisms in their effects on the living body of the host, and which are studied by essentially similar techniques, could with great advantage have been included. Discussion on the causes of bacillary dysentery and exclusion of amœbic dysentery is a case in point. Also, any exposition of chemotherapy must suffer from a presentation which, with the limitations imposed, cannot help devoting chief attention to the sulphonamides and penicillin. In connexion with chemotherapy one wonders what is the authority for the statement (p. 155) that Ehrlich's great pioneer work "started in 1905 with a systematic search for a cure for syphilis". The reviewer remembers well remarks made by Ehrlich (about 1906) emphasizing how the experimental pharmacologists up to that time had chiefly concentrated on toxicology, while his own aim was "kranke Tiere heilen".

The book as a whole is emphatically not for the use of the higher forms in schools. So far as undergraduate and postgraduate students preparing for examinations are concerned, one feels that a few selected chapters should be prescribed as a training on how to assess the literature critically. However, we owe a debt equally to the authors and the publishers of "Topley and Wilson's Principles" for making this mass of up-to-date information available at a very modest price. The authors must also be congratulated on the organisation which has enabled them to marshal the almost overwhelming mass of printed matter which has had to be dealt with in its preparation. A conservative estimate places the contents at about 1,200,000 words, while the Medical Research Council's "System of Bacteriology" in nine volumes contains about two million words. It is unfortunate that exigencies imposed on the production of a book such as the "Principles" make it necessary to deal with an actively growing subject like bacteriology in this way. A series of monographs would, we think, serve much better the interests of users. These separate volumes could then be brought up to date independently as advances required.

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