

providing a great deal of information this book also provides a detailed guide to the original literature.

Anyone interested in the Crustacea as experimental animals will find this book indispensable, and there is much in it that the ecologist too can benefit from reading.

J. GREEN

DIDACTIC PLANT PHYSIOLOGY

Pflanzenphysiologie

Von Prof. Henrik Lundegårdh. Pp. xv+717. (Jena: Gustav Fischer Verlag, 1960.) 48.70 D.M.

NOBODY having the least acquaintance with Prof. Lundegårdh, either personally or through his published work alone, will expect any book written by him to be tamely conventional. It is perhaps proper therefore to make it clear at the start that, although highly individual, this still sets out to be a general text-book and succeeds. Moreover it attempts, what is admittedly one of the most desirable and yet most difficult achievements in didactic plant physiology, its comprehensive treatment from a single pen. It is characteristic of the author that no concessions whatever have been made to the difficulties he has challenged either by limiting their scope or by shirking them as they arise. On the contrary, the book's limits have been set even wider than might be considered essential; there is, for example, a much fuller treatment of the straight anatomy of the higher plants than is generally considered needful in the context. Less surprisingly, though equally important, the roots of metabolic physiology in chemistry and enzymology receive fully adequate treatment; and the frontiers of physiology with genetics are not forgotten, nor those ecological connexions through which Prof. Lundegårdh himself made his first approaches to physiology.

His unfolding of the subject follows natural lines, proceeding from the organization of the cell and the general properties of protoplasm, through metabolism, nutrition and water balance, to growth and plant movement.

Prof. Lundegårdh has himself made important contributions in many of these fields during the course of his long and distinguished career as a research botanist, and the fact is not hidden from the reader. His adventurous mind has led plant physiologists along more than one exciting trail during the past generation, and this book is sure to make a striking impact on the minds of those students into whose hands it comes. They must surely be stimulated, if they have it in them, to creative thought on their own account. When Prof. Lundegårdh states a case you are left in no doubt about the nature of the problem or his own personal solution of it. You may be stimulated to more or less violent disagreement; but, even if you are of one mind with the author, you are very likely to feel that the matter has been illuminated for you from a new angle. It is probably not possible to write an account of the present state of plant physiology which would satisfy all, or even most, specialists and, if it were, the result would inevitably be much duller than the book Prof. Lundegårdh has written. It appeared first in 1950 in the Swedish language and the version now published in German has been considerably enlarged and partially rewritten. It would be pleasant if it were possible to think that in the next few years an English edition would also be

appearing so that it might exercise its influence on the undergraduates of our own botany departments.

W. O. JAMES

BACTERIOLOGY OF THE MOUTH

The Microbial Flora of the Mouth

By Dr. K. A. Bisset and Dr. G. H. G. Davis. Pp. 100+8 plates. (London: Heywood and Co., Ltd., 1960.) 22s. 6d. net.

THE normal oral cavity supports a very large and varied population of bacteria, fungi and protozoa. These organisms appear shortly after birth, being derived in the first instance from the maternal genital tract and later from the air, clothes, feeding utensils and other environmental objects, and persons, that come into contact with the infant. This microbial flora remains throughout life, undergoing changes that are probably mainly quantitative in the presence of oral infection. Apart from lesions due to specific micro-organisms, such as syphilis or tuberculosis, most infective conditions of the mouth, including the commonest of all, dental caries, are due to, or associated with, the organisms that are normally present. For this and other reasons the role in pathogenesis of the oral flora is not easy to clarify, and much more work on this aspect of oral disease requires to be done. A first essential, of course, is an accurate knowledge of the characteristics of the normal flora and a more or less agreed taxonomy and classification. It is indeed remarkable that such has not yet been achieved, for even the earliest bacteriologists had directed their attention to the organisms of the mouth. No doubt the fact that oral infections are rarely life-destroying has accounted for the lack of sustained interest in this field.

This short book is a very welcome contribution to the study of oral bacterial disease, for it is a succinct account of the oral flora from a systematic point of view, and it gives valuable practical advice. Though it is offered by the authors to dental, medical and bacteriological students as well as to their teachers and to research workers, it is unlikely that it will prove of great interest to undergraduates. Teachers and investigators, however, will find it of considerable value, perhaps not least for the practical information given in the appendixes that follow most of the chapters. There, detailed information on the composition and use of media and on various procedures for isolation is given, with appropriate references to the literature. Information of this sort is not readily available in collected form elsewhere.

R. B. LUCAS

MICROBIAL GENETICS

Microbial Genetics

Tenth Symposium of the Society for General Microbiology held at the Royal Institution, London, April 1960. Edited by W. Hayes and R. C. Clowes. Pp. x+300. (London: Cambridge University Press, 1960. Published for the Society for General Microbiology.) 42s. net.

THIS is the first time that a symposium of the Society for General Microbiology has taken the genetics of micro-organisms as its theme. This cautious treading is easy to understand. Microbial