

AN INTRODUCTION TO BACTERIAL PHYSIOLOGY. By E. L. Oginsky and W. W. Umbreit. San Francisco : W. H. Freeman & Co. 1954. Pp. 416, 94 figures, 18 tables. 21s.

A review for *Heredity* of a book on Bacterial Physiology must necessarily emphasise those parts which are more relevant to the geneticist. In the reviewer's mind there is very little doubt that this is perhaps the only elementary book on bacteriology which a geneticist could and should read from beginning to end. This is something that could not be said of any standard text book on the physiology of higher animals or plants. In the first place bacterial physiology, dealing with unicellular organisms, is necessarily the same as cell physiology. It is therefore nearer the immediate interests of the geneticist than the physiology of higher organisms. In the second place, the authors' way of dealing with bacterial physiology, as part of a general biological approach, cannot fail to capture the imagination of the geneticist.

This is the first book of physiology in which genetics is actually considered to be what Bateson defined it, namely, the physiology of descent. As such, it is given the proper place, both with an appropriate chapter in detail, and with a general outlook throughout. The authors being distinguished bacterial biochemists, this will come as a gratifying surprise to the reader.

A most attractive feature is the imaginative drawings, particularly at the beginning of some of the chapters. To people who think that the bacterial cell is so "simple" that it can be considered as a chemical reactant, the drawing on the frontispiece of Section I will come as a shock. So will fig. 2, an imaginary representation of a small particle approaching a bacterial cell. The sketch on page 72 shows that what is an essential metabolite for one organism may be an essential nutrient for another : it is also exceptionally imaginative. Examples of this kind are all over the text, and they help the student very effectively to build a mental picture, geometrical rather than analytical, of a variety of phenomena. They also help to get the right image of relative dimensions, which is always difficult when dealing with the very large or the very small.

On the whole, this book is a valuable addition to the library of the biologist not primarily interested in bacterial physiology. It is also undoubtedly a very good book for the student of bacteriology at a level just above the very elementary.

G. PONTECORVO.

SEX IN MICROORGANISMS. Edited by D. H. Wenrich, et al. Washington, D.C. : American Association for the Advancement of Science. (London : Bailey Bros. & Swinfen.) 1954. Pp. 346. 51s. 6d.

Our knowledge of the genetics of microorganisms has advanced very fast in the last dozen years. It has perhaps advanced too fast for our understanding of it as a part of biology. We badly need to examine the evidence as a whole, to reconsider our ideas of genetics in the light of this evidence and to repair if necessary our damaged definitions and generalisations. A book with the title of "Sex in Microorganisms" will clearly offer us something in this direction.

What is it about? It is undoubtedly about sex. But Dr Wenrich, the editorial chairman, puts the term in quotation marks and explicitly