by extensive bibliographical references and explanatory notes. Public analysts, inspectors, and governmental scientific officers who have specific duties in the administration of the regulations of such acts will find this comprehensive book indispensable. Similarly, those individuals and organizations who have obligations in common law or under various statutes will find this publication an essential vade-mecum. In this complex technological age, it can be all too easy to become ignorant of the law, sometimes with dire consequences.

A well bound book with legible text, it is very reasonably priced at 40s. There has been a real need for a generic, specialist work of this kind and the demand is certain to be such that the first issue must soon be exhausted.

D. T. LEWIS

ENZYME KINETICS FOR MEDICS

Enzyme Kinetics

A Learning Program for Students of the Biological and Medical Sciences. By Halvor N. Christensen and Graham A. Palmer. Pp. viii + 124. (Philadelphia and London: W. B. Saunders Company, 1967.) 24s. 6d.

THIS is an excellent introductory book on enzyme kinetics. Its excellence stems from the fact that it explains in a simple and lucid manner the relationship between enzyme kinetics and physicochemical principles. Moreover, the basic principles of enzyme kinetics are explained in simple terms—it is not assumed, as it is in many books, that basic principles are so well understood that they do not have to be explained. This is particularly important in teaching enzyme kinetics to medical students whose background knowledge of physical chemistry is usually poorer than those of other biological students. The book concentrates almost exclusively on the effects of substrate and inhibitors on enzyme activity with brief reference to pH and temperature effects. But this severe restriction to specific topics is advantageous, in that with a few hours concentrated effort the elementary basis of enzyme kinetics should be clear.

My impression from teaching preclinical medical students, who are so busy with their major subjects of anatomy and physiology that they have little time for anything else, is that unless a particular subject is written clearly and concisely they prefer to learn the essentials in a "parrot-fashion" without understanding the subject. This book by Christensen and Palmer should go a long way in solving this problem with respect to enzyme kinetics.

It is interesting that the authors touch on the subjects of biological transport and chemotherapy, hinting at the possible future applications of enzyme kinetics. I think this is a particularly relevant point to the importance of enzyme kinetics for medical students: in the not too distant future knowledge of metabolic regulation of enzyme catalysis may lead to a more rational approach to chemotherapy, and the medical practitioner may require some knowledge of enzyme kinetics in order to understand the mode of action of his drugs. It is perhaps important to stress that medical students being taught at the present time will be practising their medicine well into the twenty-first century.

The book is, in fact, a learning programme, but the contents are so well organized that it makes excellent reading material. The judicious repetition provided by the programme aids the retention of the subject matter, whereas the question-answer routine of the programme continually stimulates one's interest.

Finally, it should be stressed that it is only an introductory book, but serves this purpose admirably, both for explanation of the subject and for stimulation of interest in enzyme kinetics.

E. A. NEWSHOLME

VIROLOGY DOUBLE

General Virology

By Salvador E. Luria and James E. Darnell, jun. Second edition. Pp. xv + 512. (New York and London: John Wiley and Sons, 1967.) 100s.

Perspectives in Virology

Virus-Directed Host Response. Edited by Morris Pollard. (The Gustav Stern Symposium.) Pp. xxvi + 344. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1967.) 84s.

LURIA'S *General Virology* first appeared in 1953, and it is indicative of the quality of this work that it should have held its position as an excellent textbook for fourteen years. The second edition, written with a collaborator, follows the same general plan, using many of the same chapter headings, but it is extensively rewritten and is some eighty pages longer. The book is well illustrated with many photographs and clear diagrams, and several large tables help to bring out the underlying theme of the book, which is the essential unity underlying animal, plant and bacterial viruses.

The definition of a virus is more complex than that given in the earlier edition, and emphasizes the concept of parasitism at the genetic level. Every virus has two essential attributes, the genome, the genetic material of a virus, either DNA or RNA, which reproduces inside living cells and behaves as part of the host cell; and the virion, the specialized particle produced in the cell and used to transfer the genome to other cells. An extreme case of parasitism at the genetic level is represented by the genome of a temperate bacteriophage which may become physically integrated into the chromosomes of the host bacterial cells, its presence being carried through generations of bacterial cell divisions in a non-infectious form. A related form of parasitism occurs when animal cells are transformed by polyoma virus, the dividing cells continuing to produce at least part of the polyoma genome but no complete polyoma virions. Rous sarcoma virus is apparently a defective virus in that the genome is unable to produce mature virions unless the cell is also infected with a helper virus which completes the maturation process of RSV virions in addition to forming more helper virions. The experimental work underlying these different forms of parasitism is summarized in the text, and the interpretation of laboratory results is set out with commendable clarity. Students of virology, whatever their particular discipline or vintage, should benefit from reading this excellent book.

The second book, the proceedings of a symposium, is entirely different in character. Of sixteen papers presented on the theme of virus-directed host response, those by W. P. Rowe and P. K. Vogt are particularly notable. Rowe's paper on defective animal viruses is rather speculative, presenting preliminary results on four examples of helper-sensitive defective animal viruses. This is one of the growing points of virology at the present time, and it is clear from the published discussion which followed the paper that there is great interest and activity in this field. Vogt analyses the meaning of the title of the symposium and recognizes two different types of virus-directed host responses, which he terms "submissive" and "defensive". The first implies control and direction of the host metabolism by the viral genome, which may lead to malignant transformation of the cell. The second type does not require viral genetic activity in the host cell, and is exemplified by host reactions such as antibody and interferon production. This paper contains a mass of detail, and provoked active discussion by the other participants. This reporting of the discussion is one of the most valuable aspects of the proceedings of symposia, which too often tend to be re-presentations of previously published work.

J. S. PORTERFIELD