

### Advances in Enzymology and related Subjects of Biochemistry

Edited by F. F. Nord. Vol. 11. Pp. viii+471. (New York and London: Interscience Publishers, Inc., 1951.) 9 dollars.

THIS volume exhibits the same characteristics as previous volumes of this well-known series. Like its predecessors, it interprets the field of enzymology very widely, and the range of topics in this volume is so diverse that all that can be usefully done in most cases is to indicate the subjects. Dr. H. Gutfreund discusses the concept of entropy and gives a few applications in the biological field. This article will no doubt be useful to those biologists who are not familiar with thermodynamics. Prof. J. F. Danielli and J. T. Davies discuss reactions at interfaces. Much of this article is concerned with the adsorption of simple substances; but there is also an interesting account of some surface reactions.

The rest of the volume is more specifically biochemical. Dr. E. C. Wassink discusses chlorophyll fluorescence and its bearing on photosynthesis; E. S. Guzman Barron has an article on thiol groups of biological importance, in which he assembles a large quantity of information on the occurrence and mode of action of these groups. This is followed by three articles dealing with enzymic transformations of polysaccharides, in which both synthetic and degradative reactions are discussed. The last two articles, on alliin, the specific principle of garlic and on pathological wilting in plants, seem a little remote from enzymology, but no doubt will be of great value in the field of plant biochemistry, which is not well catered for elsewhere. The present volume contains a cumulative index to Vols. 1-11, which shows how widely the editor of these volumes has cast his net, in all fields of applied biology.

### Electrophysiological Technique

By C. J. Dickinson. Pp. vii+141. (London: Electronic Engineering, 1950.) 12s. 6d.

A POWERFUL research tool has been developed in the application of electronic techniques to neurophysiology, and the chief aim of this book is to give a concise account of the way in which such techniques may be used. After describing the essential features of power supplies, cathode-ray tubes, time bases and the type of amplifier required for biological research (including D.C. amplifiers), Mr. C. J. Dickinson devotes his later chapters to a description of modern techniques for time marking, stimulating, light and temperature measurement, production and recording of mechanical movement, and other related subjects. The book is intended to be a manual of essentially practical information for use by physiologists in the laboratory, and as such it may be recommended.

J. A. S.

### Clean Milk

By Harry Hill. Pp. vii+115. (London: H. K. Lewis and Co., Ltd., 1952.) 7s. 6d. net.

THIS useful practical handbook on the production of clean milk describes the sources of contamination of raw milk, hygienic methods of milking, straining and cooling of milk, cleansing and sterilization of utensils and milking machines, with a rough outline of relevant laboratory tests. Mere recital of all possible causes of contamination inevitably creates an impression that the production of clean milk is difficult and costly. The author stresses

the importance of appreciation of principles and their correct application, rather than possession of elaborate buildings and equipment, and rightly places major emphasis upon cleansing and sterilization of utensils. Producers of unsatisfactory milk, whose failure arises from lack of knowledge, and educational workers who advise them, will find in this book the practical information they need, clearly presented for ready reference.

Whether milk producers should be encouraged to add sodium chromate to refrigerator brine, to use hypochlorites for sterilizing milk bottles, or to rely upon residual fat films to protect utensil surfaces from hypochlorite corrosion is rather debatable. More emphasis might have been placed upon the distinctive functions of detergents and hypochlorites, and the bald statement (p. 96) that "caustic soda is not a detergent" requires modification. The book will not appeal to dairy scientists; bacteriological matters, in particular, include some loose statements and doubtful descriptions which fortunately do not detract from the value of practical instructions. The chapter on laboratory tests, which includes no mention of standards, is perhaps the least satisfactory. Future editions would be improved by a few illustrations, and a fuller treatment of milk-borne pathogens.

E. L. CROSSLEY

### Theory and Design of Valve Oscillators for Radio and other Frequencies

By Dr. H. A. Thomas. (Monographs on Electrical Engineering, Vol. 7.) Second edition, revised and enlarged. Pp. xv+317. (London: Chapman and Hall, Ltd., 1951.) 36s. net.

### Basic Electron Tubes

By Donovan V. Geppert. (McGraw-Hill Electrical and Electronic Engineering Series.) Pp. viii+332. (London: McGraw-Hill Publishing Co., Ltd., 1951.) 42s. 6d.

THE second edition of Dr. H. A. Thomas's "Theory and Design of Valve Oscillators" has been enlarged by the addition of three chapters on various types of ultra-high-frequency oscillator and by including a more complete study of resistance-capacity oscillators. Square-wave and saw-tooth oscillators are not included because the existing literature makes it unnecessary. The main feature of the book is its careful treatment of frequency stability and stabilization. Amplitude stability is not extensively treated, and it is rather surprising to find no reference to the Meachum type of bridge-stabilized oscillator which is so widely used in telecommunications. Neither is Dr. Thomas well at home in the ultra-high-frequency field. The general theory of non-linear systems is applied to valve oscillators, and this is a valuable corrective to the over-simplifications common in elementary text-books.

Mr. D. V. Geppert says he has aimed at making his book "readable to the average undergraduate and yet advanced enough to give . . . a really satisfying treatment of the physics and mathematics of electron tubes". Two-thirds of the book deal with vacuum devices, the rest with gas tubes. The best feature is the illustrations of potential models, electron paths, etc., in multi-electrode valves. The worst is a tendency to indulge in sweeping half-truths. The book is very elementary—for example, it contains a description of the influence of triode geometry on  $\mu$ —but not even the simplest formula is derived. One may justifiably doubt the satisfactory nature of a treatment at this level.