
REVIEWS AND NOTICES OF BOOKS

Annual Review of Physiology (Vol. 32). (Annual Reviews, Inc., 4139, El Camino Way, Palo Alto, California 94306, U.S.A.), 1970. Pp. ix + 636. Price post-paid: U.S.A. \$ 10.00; Foreign: \$ 10.50.

The thirty-second volume of the *Annual Review of Physiology* appears with its customary freight of the precious ore of physiology concentrated and refined in considerable degree.

The contents of this volume are: *The Road A Scientist Followed: Notes of Japanese Physiology as I Myself Experienced it*, by Gen-ichi Kato; *Transport Across Cell Membranes*, by R. Whittam and K. P. Wheeler; *Endocrine Regulation of Calcium Metabolism*, by D. H. Copp; *Skeletal Muscle*, by Alexander Sandow; *Digestion: Intestinal Secretion*, by Thomas R. Hendrix and Theodore M. Bayless; *CNS at the Cellular Level: Identity of Transmitter Agents*, by Catherine Hebb; *The Functional Organization of Invertebrate Ganglia*, by Eric R. Kandel and Irving Kupfermann; *Central Pathways of Vision*, by G. S. Brindley; *Pain*, by Robert K. S. Lim; *Overall Regulation of the Circulation*, by J. Alan Herd; *Systemic Circulation: Local Control*, by Stefan Mellander; *Comparative Physiology: Chromatophores*, by Milton Fingerman; *Heart*, by Matthew N. Levy and Robert M. Berne; *Respiration*, by Robert A. Mitchell; *Reproduction*, by David T. Armstrong; *Comparative Physiology: Electric Organs*, by Michael V. L. Bennett; *The Lymphoid System*, by R. A. Gatti, O. Stutman, and R. A. Good; *The Regulation of Extracellular Fluid Volume*; by Otto H. Gauer, James P. Henry, and Claus Behn; and *Some Related Articles Appearing in Other Annual Reviews*. C. V. R.

Concepts and Models of Biomathematics (Vol. 1). Edited by F. Heinmets. (Marcel Dekker, Inc., 95, Madison Avenue, New York), 1970. Pp. xi + 287. Price \$ 16.75; £ 8.0 sh. 0 d.

Biochemical and physiological methodologies have been used primarily to study specific molecular processes or functional mechanisms. The usual result of such studies is isolation of a specific system and exploration of a limited number of interactions. Because of this, infor-

mation gained by these methods has only limited value, and interpretation of these results in the framework of the total system is highly restricted. In order to understand the functional behaviour of the total system, the integration of information from various sub-systems is essential. For this purpose model-systems can be developed. These must contain sufficient number of functional units and reveal interactions between these units so that functionally meaningful properties are exhibited by the model-systems.

This book contains an outstanding assembly of biological model-systems, which have been developed and analyzed by highly competent scientists using computer techniques. It not only presents an analysis of the subject-matter, but also gives detailed numerical data and the computer techniques used.

The chapters contained in this book are: 1. Simulation of Glycolytic Systems; 2. The Analysis of Electron Transport Kinetics in Mitochondria; 3. Fourier Transform Analysis of Tracer Data; 4. Blood Glucose Regulation and Diabetes; 5. Analysis of Cellular Growth Process; 6. Modelling of Adrenocortical Secretory Dynamics; 7. Simulating the Grazing Situation; and 8. A Model for Selection in Systems of Species Competition.

This book will be suitable as a text for quantitative biology courses. It will be useful to all scientists and students who want to develop an understanding of biological processes at a quantitative level, and thus gain a deeper and more penetrative understanding of nature. It will also help in designing more fruitful experiments and carrying out advanced research. C. V. R.

Publications of the Information Centre on High Temperature Processes at the University of Leeds (England).

In 1966 a special panel of the Science Research Council, Great Britain, concluded that the field of high temperature processes merited special stimulation and development and consequently, the Council is now supporting a number of projects in this field. Two of these projects have been initiated in the University of Leeds. One of them is concerned with the

establishment of an information centre on high temperature processes, and the other with the compilation of critically evaluated kinetic data for reactions of interest in high temperature processes.

We have received the following sample publications from the Centre: 1. *High Temperature Information Bulletin*, No. 15, March 1970, 25 pages. This Bulletin is published at bimonthly intervals and contains references to recently published work in the field of high temperature research. Annual Subscription £5, or \$15.00. Information Centre of High Temperature Processes Department of Fuel Science, The University of Leeds, LS2, 9JT Yorkshire, England.

2. *High Temperature Reaction Data*, No. 2, November 1968, pages vi + 34. Department of Physical Chemistry, The University, Leeds 2, England. This report is the second of a series from the evaluation project. In it some homogeneous gas phase reactions involving hydrogen and oxygen have been evaluated. A separate section is devoted to each reaction and the order of material presented is as follows: (i) Thermodynamic data, (ii) Recommended value of rate constant, (iii) Arrhenius plot of available data, (iv) Table of available data, (v) Discussion, and (vi) References.

There is no doubt that these informative bulletins will be of value to all workers in the field of high temperature processes.

Cationic Surfactants. Edited by Eric Jungermann. (Marcel Dekker, Inc., 95, Madison Avenue, New York, N.Y. 10016), 1970. Pp. 652. Price \$37.50.

In recent years cationic surface active agents with antibacterial properties have been playing an increasingly important role in industry and science as sanitizing and antiseptic agents, as components in cosmetic formulations and as germicides and fungicides. New applications include their use as antistatic agents, textile softeners, corrosion inhibitors, foam depressants, flotation chemicals, asphalt and petroleum additives.

The book under review is volume 4 of the Surfactant Series brought out by Marcel Dekker, Inc. It gives a comprehensive up-to-date coverage of cationic surfactants. The contents are organized in four parts. Part I, in five chapters, covers the organic chemistry of cationic surfactants, including synthesis, applications,

and physical properties. Part II, in six chapters, covers the physical chemistry of pure cationic surfactants and includes discussions of important theoretical aspects of colloid chemistry. Part III is a critical review of techniques for the identification and determination of cationic surfactants. The two chapters of Part IV are concerned with the germicidal and toxicological properties of cationic surfactants. Eighteen authors from Universities and Industry who are experts in this field of work have contributed to the fifteen chapters of the book. A. S. G.

Introduction to Physical Organic Chemistry.

By R. D. Gilliom. (Addison-Wesley Publishing Co., Inc., West End House, 11, Hills Place, London W. 1, England), 1970. Pp. 342. Price 126 sh.

This book is designed for a one-semester course on physical organic chemistry to undergraduate seniors. It attempts to relate the two complementary approaches to the subject, namely, the empirical study of mechanisms of homogeneous organic reactions and the theoretical viewpoint. The material covers molecular orbital theory, chemical kinetics and applications, kinetic isotopic effects, linear free energy relationships and determination of reaction mechanisms. The last two chapters deal with electrophilic aromatic substitution, and nucleophilic substitution and elimination reactions at saturated carbon. The text includes recent advances in the subject, and suggested readings and references to literature are given at the end of each chapter. A. S. G.

Books Received

From: (Addison-Wesley Pub. Co., West End House, 11, Hills Place, London W. 1, England)

Calculus: A Short Course. By D. E. Richmond, 1970. Pp. xiv + 239. Price 70 sh.

Introduction to Mathematics. By F. M. Hudson and D. W. Adlong, 1970. Pp. 479. Price 91 sh.

Physics. By M. Alonso and E. J. Finn, 1970. Pp. viii + 760. Price 89 sh.

Calculus and Statistics. By M. C. Gemignani, 1970. Pp. xi + 353. Price 63 sh.

Elementary Geometry. By V. H. Haag, C. E. Hardgrove and S. A. Hill, 1970. Pp. xi + 255. Price not given.

A First Course in Quantitative Analysis. By R. V. Brumblay, 1970. Pp. ix + 420. Price 65 sh.