

A chapter titled "The Mechanism of Solubilization" is devoted to a critical consideration of the X-ray evidence for various micellar structures and for the changes in these structures when solubilization occurs. The authors' conclusion that "there appears to be no reason to postulate any mechanism (for solubilization) other than that of ordinary solution of the solubilize in the hydrocarbon center of the micelle" appears to be based on their belief that the interpretation of the X-ray evidence is incorrect or inconclusive. It is consistent with the authors' treatment of solubilization as a partition phenomenon, but will be considered a serious over-simplification by some investigators familiar with the solubilization of amphipathic non-electrolytes. A short chapter is devoted to co-solvency, blending and hydro-tropy, and one to the physiological effects of solubilization. The latter, interestingly, minimizes the importance of solubilization in some transport processes previously explained by this mechanism. The chapter on practical applications is brief and sometimes superficial. In their discussion of rust inhibition by oxidation products in lubricating oils the authors indulge in speculation which reflects unfamiliarity with the experimental facts and is at variance with the sound thermodynamic approach apparent elsewhere in the volume.

The book is well printed and adequately indexed. The references cited bring the coverage of the literature three years further than the extensive review published by Klevens in *Chem. Revs.* in 1950. As the authors indicate, the field of solubilization by micelles is today in too active a stage of development to allow the writing of a definitive monograph. In the meantime colloid chemists are indebted to them for providing a readable and stimulating survey of the present state of the subject.

NAVAL RESEARCH LABORATORY  
WASHINGTON 25, D. C.

C. R. SINGLETERRY

**Vitamins and Hormones. Advances in Research and Applications.** Volume XII. Edited by ROBERT S. HARRIS, Professor of Biochemistry of Nutrition, Massachusetts Institute of Technology, Cambridge, Massachusetts, G. F. MARRIAN, Professor of Medical Chemistry, University of Edinburgh, Edinburgh, Scotland and KENNETH V. THIMANN, Professor of Plant Physiology, Harvard University, Cambridge, Massachusetts. Academic Press, Inc., Publishers, 125 East 23rd Street, New York 10, N. Y. 1954. xi + 305 pp. 15.5 X 23.5 cm. Price, \$7.50.

"Vitamins and Hormones" is the twelfth of a series of volumes dealing with subjects of current biochemical interest. These reviews cover developments during recent years and include the necessary background to provide a complete picture of the subject. Eight topics are covered; five dealing with nutrition and three with endocrinology.

The first review deals with the chemistry of vitamin B<sub>12</sub> and pertains to its isolation, chemistry and analytical procedures. The reader will find the discussion on pseudovitamin B<sub>12</sub> and related compounds of special interest in view of the various substances related to this vitamin that have been described.

The second chapter on intestinal synthesis of vitamins in the ruminant provides a comprehensive review of the recent work on the nutrition of the preruminant calf as well as vitamin synthesis in the rumen of the adult animal.

Chapter three deals with the biochemistry and pathology of hypervitaminosis A. A detailed account is given of pathological changes which occur in animals and man. The reviewer, however, questions the statement that the "disturbance of the physiologic equilibrium between vitamin A and other factors, caused by the hypervitaminosis A, provide another starting point for fundamental research into the biochemistry of vitamin A." An example of apparent interaction between excess vitamin A and vitamin K is given. It seems questionable, however, whether the toxicity of vitamin A is simply the result of a displacement of other vitamins as postulated in this paper.

Chapter four comprises an excellent review of the vitamin A requirements of animals along with a discussion of the dietary factors influencing absorption and utilization of this vitamin.

The fifth chapter deals with nutrition and liver disease in man. This includes a discussion of Kwashiorkor, alcohol and cirrhosis, and of liver degeneration in diabetes and in

hepatic coma. This is a valuable review of a clinically important but nutritionally perplexing subject.

Three endocrinological subjects are covered. The first of these deals with light regulation of hormone secretion and is a compilation of a mass of experimental observations relating to photoperiodism in invertebrates, amphibian and warm blooded animals. Special emphasis is given to the effect of light on reproduction in birds, mink and ferrets. Attention is also given to the influence of light on such phenomena as hibernation, fat deposition, and hair and feather cycles.

The second chapter dealing with endocrinology gives an interesting discussion of the estrogenic agents occurring in plants. This includes a list of plants exhibiting estrogenic activity and a detailed treatment of the chemistry of genestrin and of related isoflavonones which exhibit estrogenic activity.

The last chapter deals with the effect of estrogens on fowls and their industrial applications. This provides an account of the biochemical and morphological changes induced by estrogenic agents as well as a description of their use in improving carcass quality in commercial meat birds. This paper is of timely importance in view of the widespread use of this practice in poultry production and its more recent extension to other animals.

The organization of the book makes for easy reading. A complete table of contents is included and a complete outline appears at the beginning of each chapter. The writers have made comprehensive literature searches as judged by the extensive bibliographies at the end of each paper. The index is both by author and subject. The only criticism that might be made is the absence of any papers dealing with the biochemical aspects of vitamin metabolism that have been characteristic of previous volumes in this series.

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PEARL RIVER, NEW YORK

**Methods of Enzymology. Volume. I. Preparation and Assay of Enzymes.** Edited by SIDNEY P. COLOWICK and NATHAN O. KAPLAN, McCollum-Pratt Institute, The Johns Hopkins University, Baltimore, Maryland. Academic Press, Inc., Publishers, 125 East 23rd Street, New York 10, N. Y. 1955. xxv + 835 pp. 16.5 X 23.5 cm. Price, \$18.00.

Oppenheimer's "Die Fermente" (seven volumes) and Baumann and Myrbaeck's "Die Methoden der Fermentforschung" (four volumes) represent the methods used in the development of enzymology of that period. This work appears to represent some of the earlier useful procedures as well as those employed in more recent investigations.

"Methods in Enzymology" is unique in that it is written by a large number of well known investigators. According to the preface the number of contributors to the four volumes is three hundred. This volume contains one hundred and twenty-six contributions. The length of the papers varies from one page to many pages. Thus some of the procedures are quite condensed and it will be necessary for the reader to occasionally consult the several available one-volume texts, and the original articles for complete understanding of the procedures.

The first section describes procedures for making tissue slices and tissue homogenates, methods for the extraction of mitochondria, chloroplasts and enzymes from bacteria and from different biological materials. The second section contains seventy-one contributions concerning enzymes of carbohydrate metabolism. In the third section there are twenty-four methods concerning enzymes of lipid metabolism. In the fourth section there are thirteen methods dealing with the enzymes of the citric acid cycle.

Concerning the subject matter of this volume the editors' scope to provide methods for the purification of enzymes, the assaying of enzymes and crude extracts, has been exceedingly well met. This book is a priceless addition to the enzyme reference literature.

VENEREAL DISEASE EXPERIMENTAL LABORATORY  
U. S. PUBLIC HEALTH SERVICE HENRY TAUBER  
SCHOOL OF PUBLIC HEALTH  
UNIVERSITY OF NORTH CAROLINA  
CHAPEL HILL, NORTH CAROLINA