

BOOK REVIEW

Vitamins and Hormones. Advances in Research and Applications. Volume IX. Edited by R. S. HARRIS AND K. V. THIMANN; Academic Press Inc., New York, 1951. Pp. 395. Price \$ 8.00.

This publication is a worthy successor to the previous eight volumes. Drs T. H. JUKES AND E. L. R. STOKSTAD give an account of the role of vitamin B₁₂ in metabolic processes. The chemistry of the identified fragments from the hydrolysis of vitamin B₁₂ is briefly discussed and the biosynthesis of the vitamin and its interrelationships with CASTLE's "intrinsic and extrinsic factors" are summarized. A comprehensive review of the studies on cobalt in the nutrition of ruminants shows the complexities of the problem. The role of vitamin B₁₂ in bacterial metabolism and its connection with protein metabolism, with reactions involving labile methyl groups and the reduction of S-S linkages, are concisely and systematically recorded.

Dr H. C. LICHSTEIN discusses the functions of biotin in enzyme systems giving a full account of his brilliant researches in this field. From his intimate knowledge of this problem he gives an exposition of the connection of this vitamin with the WOOD-WERKMAN reaction, *i.e.* the oxalacetate decarboxylation, with the decarboxylases of succinate, the deaminases of aspartic acid, serine and threonine and the succinic acid dehydrogenase and the synthesis of citrulline. These diverse functions of biotin may possibly be explained by a single mechanism, namely that of hydrogen transport.

The article by Dr W. SHIVE on the functions of B-vitamins in the biosynthesis of purines and pyrimidines, to which he made outstanding contributions by means of his inhibition analysis technique, deals succinctly with this vast field of information. A valuable contribution is the account of the mechanism of the biosynthesis of purines and pyrimidines, the incorporation of single carbon units, the oxidation of purines and other pathways of the biosynthesis of purines and pyrimidines, involving folic acid, vitamin B₁₂, riboflavin, biotin and possibly other B-vitamins. A full account of antimetabolites of nucleic acid metabolism is given by Dr L. D. WRIGHT. It provides an interesting illustration of the possibilities of this technique. The antimetabolites of folic acid, biotin, purines, pyrimidines, ribonucleic acid, benzimidazole, triazolopyrimidine, glycine and various others are described.

The relation of vitamin deficiencies with the adrenocortical function is dealt with by Dr A. F. MORGAN. The main interest is rightly centered around the effects of ascorbic acid and pantothenic acid deficiencies, but other vitamins such as thiamine, riboflavin and others are adequately covered.

Dr W. H. FISHMAN has undertaken the difficult task of summarizing the extent of the knowledge of enzymic-estrogen interrelationships. The author has succeeded in his aim stated in his concluding paragraph that "if in this article, the basic problems have been made clear and if the extent of our knowledge and ignorance has been defined, then one of the objectives of this effort has been attained".

The synthesis and metabolism of radioactively labelled steroids is well reviewed by Dr J. H. TWOMBLY who gives an account of the synthesis, their localization in animals and man and the excretion routes and metabolites. This quickly developing research field which almost outpaces the rate with which it can be reviewed is already adding much needed information to the pathways and metabolism of these important substances.

A valuable and timely contribution is the review of the effects of cortisone and A.C.T.H. by Dr R. O. SPRAGUE. The rapid development and the number of publications on this subject must have been a heart-breaking challenge to the author who managed to give in the small space available a clear and up-to-date account of the effects on the electrolyte and water balance, on the organic metabolism and on the various tissues which have been reported to be affected.

Dr M. H. F. FRIEDMAN records the studies on urinary gastric secretory depressants (urogastrone), reviewing the assay methods, preparation, origin and excretion of the active substances. An interesting contribution is the discussion on the mechanism of action of these depressants.

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