

and ecological aspects of virus disease and should therefore be read by all who are interested in viruses.

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HIDDEN HUNGER

Hidden Hunger. By ICIE G. MACY and HAROLD H. WILLIAMS. Lancaster, Pa.: The Jaques Cattell Press. 1945. \$3.00.

THE title of this book denotes the malnutrition resulting from diets which may satisfy hunger in the usual sense, but which are lacking in one or more of the specific nutrients required for optimum health and performance. Against a historical background, the book records the contemporary developments which have led to our present knowledge of the causes of this hidden hunger, and of ways of eliminating it. The authors, life-long students and investigators in nutrition, are particularly well qualified to deal with the field covered. Without sacrifice of scientific accuracy, the discussion is presented in language that the general reader can understand and profit from accordingly. The scientist also will find the book a source of much valuable information which is well documented with references.

The first chapter traces the origins of nutrition science which grew out of man's primary need for food and of his early observations on the relation of diet to disease. It reveals how our present knowledge has developed through the application of data obtained by research in many different fields, such as chemistry, physiology, agriculture, medicine and home economics. In the following chapter, the nutrition activities of important national and international organizations and conferences, past and present, are reviewed.

The choice of foods and their utilization are next considered, particularly in connection with problems of food habits, food fads and abnormal appetites. A discussion of the various nutrition deficiency diseases which are responsible for poor health follows. Food production receives attention in a chapter devoted to the basic importance of the soil as a source of our food supply. The contributions of soil, plant and animal science in improving this supply are discussed. Economic problems of land utilization are reviewed.

A comprehensive chapter considers the chemistry, physiology and functions of the various chemical substances with which nutrition science deals—the energy-forming nutrients, the amino acids and the many minerals and vitamins of which a complete diet must be composed. Succeeding chapters translate these nutrients into foods and into use. First,

there is a discussion of the problems of food supply and of the various services involved in getting food from the farm to the consumer. Food processing, preservation and cooking are here dealt with. A discussion of fortified foods, notably enriched flour and bread, is included. A chapter entitled "Food in Action" makes a comparison between the knowledge available during World War I and World War II, thus revealing the large advances in nutrition science. Another chapter is devoted to the accomplishments during World War II in improving the industrial workers' health. A discussion of the development of rations for our armed services follows. It reveals the contributions which have been made by the newer knowledge of nutrition and by current experiments carried out to solve specific problems.

The final chapter is entitled "Food for Thought." It reviews recommendations set forth by the United Nations' Conference on Food and Agriculture as a background for a discussion of some of the problems which will arise in carrying them out. It closes with a review of some of the developments which should result in a healthier people in the future.

The foregoing summary indicates that the book has a much broader scope than is indicated by its title. Some readers may feel that an attempt has been made to cover too many topics and too many fields in a book of this size and purpose. Some of the topics are not very closely related to the title, but their discussion does serve to show the many factors which must be taken into account in advancing the field of nutrition. The diversity of topics discussed and the many long quotations in fine print may, at times, tend to distract the reader from the main theme. But these are minor matters with respect to a book which contains a large amount of valuable scientific information in a very readable form.

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BOOKS RECEIVED

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