

Reviews of Recent Books



The Guinea Pig in Research: Biology—Nutrition—Physiology, by Mary E. Reid. Human Factors Bureau, Inc. (Publication No. 557). Washington, D. C., 1958, pp. 87, \$2.00.

This booklet will be of help to those who use the guinea pig for biologic, physiologic, and nutritional research. The major points of the subject matter are compiled in five chapters. The first chapter deals with the genetics of 14 strains of guinea pigs, and describes their origin, the system by which they were bred, and methods of maintenance. As is true for mice, it is essential to have this information, since results obtained in experiments conducted on animals with known genetic constitution are often more conclusive than those obtained with random populations. The next chapter gives data on litter size, life span, and body and organ weights of males and females. In the third chapter the physiology of digestion and hematologic data are discussed, the latter with particular reference to variations with ages; there are also data on blood pressure values and on motor activity. In the following chapter nutritional requirements are given and the principal changes occurring in deficiency states or in states of overnutrition are briefly summarized. The last chapter mentions some of the fields in which the use of the guinea pig as an experimental tool seems promising. A short bibliography is added. While the first three chapters supply a good deal of valuable information, Chapters 4 and 5 were, apparently intentionally, kept brief. Correspondingly, the bibliography is far from complete. The booklet is recommended to all who wish to work with guinea pigs.

M. SILBERBERG

Deficiency Disease: Functional and Structural Changes in Mammalia Which Result from Endogenous Lack of One or More Essential Nutrients, by Richard H. Follis, Jr. Charles C Thomas, Springfield, Ill., 1958, pp. 577, \$14.75.

Dr. Follis' new book is unusual in several respects. First, it is oriented with the newer concept that nutritional disorders include disturbances ascribed to the many conditioning factors which may "produce general or local reductions or deficiencies of essential nutrients." Second, it is a book dealing with clinical and metabolic features of deficiency states but with a strong emphasis on pathologic changes. This, of course, reflects the author's well-known interest in pathology. As a matter of fact, it is a logical outgrowth of Follis' previous

book, *The Pathology of Nutritional Disease*, written ten years ago. Third, it is unusually well documented. There is a bibliography of 1,535 items, and readers will welcome the full author and subject index.

Scrutiny of the organization will reveal a certain amount of duplication. This, however, is unavoidable, since specific deficiency states are discussed after the sections on individual nutrients. Thus, thiamine deficiency is described in detail in the vitamin section. But the beriberi syndrome is discussed 100 pages later. Similarly, vitamin B₁₂ and pernicious anemia are separated. Yet the information is so concise and the style so fluent that the reader will find the discussions quite complete in themselves.

The casual reader will note that some sections, notably lipids and carbohydrates, are brief in comparison to others, e.g. vitamins. This "imbalance," however, clearly reflects our present knowledge of nutritional disorders. Science does not advance equally on all fronts.

Attention should be called to a particularly valuable chapter on deficiency disease as a research method in biology and medicine. In addition, the author should be commended for including a discussion of such topics as dental caries, kwashiorkor, endemic goiter, celiac disease, and the hypokalemic syndrome. Perhaps in a future revision of the book it may be worth including disorders such as atherosclerosis which may be related to an imbalance or excess of certain nutrients, rather than limit the topics to deficiencies only.

This is a valuable book because of its emphasis on structural and functional changes resulting from the endogenous or exogenous lack of one or more nutrients. It is printed on good paper; the illustrations and type are excellent. It will prove to be a useful addition to nutritional literature.

S. O. W.

Diseases of the Liver and Biliary System, ed. 2, by Sheila Sherlock. Charles C Thomas, Springfield, Ill., 1958, pp. 719, \$11.50.

Doctor Sherlock has brought together a combination of summaries of her own original work in liver disease and concise epitomes of the pertinent work of others into a remarkably well-organized, useful, and up-to-date monograph. In her writing, Dr. Sherlock has displayed sound clinical orientation in her field, skill in simplifying data, and excellent judgment in including essentials and excluding trivia. It is remarkable that in 719 pages she has compressed so much useful material in so readable a text.

In addition to covering the clinical aspects of hepatic disease, including pathology, in adequate but surprisingly brief fashion, Dr. Sherlock has provided a stimulating view of the important basic science developments of most recent vintage. Thus the classical descriptions of the morphology of the liver are augmented by data obtained by electron microscopy and histochemistry on the fine structure of the liver cell. The clinical matter presented has an extremely contemporary flavor and includes such subjects as veno-occlusive disease, penicillamine for Wilson's disease, the pathologic physiology of hepatic circulation, and a concise section on the biochemistry of the liver. The text is well illustrated, many of the illustrations from Dr. Sherlock's own clinical material; and its useful index is quite complete. Bibliographic references are adequate but unobtrusive.

The chapter on the relationships of nutrition and liver disease is, however, somewhat disappointingly, though understandably, brief. In the discussion on fatty liver, no mention is made of the fatty liver of diabetic acidosis. The summary of the experimental data on the effects of alcohol on the liver is, however, provocative and apt. The summary on experimental cirrhosis in animals, with emphasis on the clinical implications, is useful for the clinician as well as the experimenter.

The book should prove of special value to the practicing gastroenterologist and to the investigator interested in any aspect of hepatic physiology or liver disease.

J. B. HAMMOND

Nutrition and Atherosclerosis, by Louis N. Katz, Jeremiah Stamler, and Ruth Pick. Lea & Febiger, Philadelphia, 1958, pp. 110, illus. 67, \$5.00.

The authors have previously written excellent reviews on experimental atherosclerosis and in this volume have expanded on the Henry Jackson Lecture given by Dr. Katz.

There are four chapters on the relations between diet, blood cholesterol levels, and heart disease, and on the effects of experimental diets on animals and men. This provides a complete survey of this important problem. Chapter 6 discusses the importance of endocrine factors, heredity, physical activity, smoking, and emotional stress in determining the rate of development of atherosclerosis. There is almost no discussion of the effect of these influences on blood coagulation, and on the precipitation of thrombotic accidents. There is a full discussion on the effects of estrogen in inhibiting coronary atherosclerosis in chickens and on the authors' study of effect of estrogens on survival of men with myocardial infarctions. Chapter 7 covers prophylaxis of atherosclerosis in man. There are only two paragraphs on anticoagulants, but an adequate discussion of diet and four pages on estrogens. There is no mention of nicotinic acid, which in the past two years has established itself as the cheapest, most effective, and most harmless agent now available for lowering blood cholesterol.

This book is of great value as an introduction to those

unfamiliar with the field and has a very complete bibliography.

WILLIAM DOCK

Thirst: Physiology of the Urge to Drink and Problems of Water Lack, by A. V. Wolf. Charles C Thomas, Springfield, Ill., 1958, pp. 426, illus. 44, \$12.50.

This is a most useful work which has brought together much of the useful data on thirst, drinking, and satiety in relation to body fluid and its regulation. The case of drinking sea water receives special treatment. Special problems of thirst are illustrated by actual examples and case histories, including accounts of actual instances of exposure to water deprivation which have an important bearing on the phenomena of thirst from the physiologic standpoint.

Considerations of water balance introduce the problems. The concept of fugacity or "escaping tendency" to include all the factors (including hydrostatic pressure) in fluid translocation is valuable, since it is to be distinguished from osmoticity. The importance of Laplace's law is emphasized as it correlates pressure-tension-radius relations with the osmotic equilibria of cellular and extracellular fluids. These are but two examples of the many fundamental problems considered.

Theories of thirst are extensively treated, and data supporting the various concepts are well documented. The presentation of newer control theories is good. It is also pointed out that satiety is a separate entity which can be distinguished from thirst and drinking.

Volume receptors in the regulation of fluid volume are thoroughly considered, and the necessary relation of volume to salt is stressed. Drinking and renal excretion affect fluid volume: The thought is presented here that volume may influence thirst and the kidney.

Thirst, with its multiple problems, is presented from many aspects. As a single example, from many, is the example of sea-water drinking. The material here is extensive and well done. In fact, the entire volume can be well recommended.

M. J. OPPENHEIMER

The Interference Microscope in Biological Research, by A. J. Hale. E. & S. Livingstone, Ltd., Edinburgh, Scotland, 1958 (The Williams & Wilkins Co., Baltimore, exclusive U.S. agents), pp. 114, \$5.00.

The progress of chemistry and physics in general is reflected in the application of new and difficult methods in biologic research, and it becomes not only desirable but necessary for the biologist to get acquainted with these methods, particularly since biological research is increasingly focused on metabolic activities of cells and on quantitative determinations of cellular components. In the foreword to this book Professor Garry remarks that only a few biologists might be willing or have the opportunity to go back to school and learn such methods; a simple text as the present one, therefore, serves a most useful purpose.

This book fully informs the novice in the field about the basic facts and the significance of interferometry and the use of the interference microscope for quantita-

tive cytophysical studies. The first two of seven chapters briefly summarize the physical basis of interferometry and describe the types (beam systems) of the interference microscopes. There follows an explanation of the theoretical and practical interpretation of the image patterns and a description and evaluation of the practical methods of measuring optical retardation with a discussion of the cytochemical significance of measurements of this phenomenon. The concluding chapter deals with possible sources of error in the establishment of absolute values of protein, nucleic acids, lipids, carbohydrates, protoplasm, and inorganic constituents. While most of the technical details are left to the experts for analysis, there is much valuable information to the morphologist who is interested in interference as a method for research. The book makes stimulating reading and does not fail to mention pitfalls of the method. To the experimental pathologist, who is aware of the limitations of light microscopy, the book is a welcome guide to a method of approach which promises further progress in the field of histo- and cytochemistry.

M. SILBERBERG

Nutrition for Practical Nurses, ed. 2, by Phillis S. Howe. W. B. Saunders Company, Philadelphia, 1958, pp. 219, \$2.75.

This is a practical, simply written booklet that will be an invaluable aid to the practical nurse. It covers a variety of subjects from a concise explanation of nutrition, digestion, absorption, and metabolism to national and religious food habits. The correlation of diet with the many diseases of medical origin is discussed.

DOROTHY SHOGI

BOOKS RECEIVED

Books received for review by THE AMERICAN JOURNAL OF CLINICAL NUTRITION are acknowledged in this column. As far as practicable, those of special interest are selected, as space permits, for a more extensive review.

Ciba Foundation Symposium on Amino Acids and Peptides with Antimetabolic Activity, edited by G. E. W. Wolstenholme and Cecilia M. O'Connor, Little, Brown & Company, Boston, 1958, pp. 286, \$8.75.

Congrès International de la Fonction Biliaire: I. Volume des Rapports; II. Volume des Communications Thérapeutique Thermale, Masson & Cie, Paris, 1958, I, pp. 462; II, pp. 172, 5,000 fr.

Long-Term Illness: Management of the Chronically Ill Patient, edited by Michael G. Wohl, W. B. Saunders Company, Philadelphia, 1959, pp. 748, \$17.00.

