

Reviews of Recent Books



Principles of Research in Biology and Medicine, by Dwight J. Ingle. Lippincott, Philadelphia, 1958, pp. 120, \$4.75.

In this little book a wise scientist offers the fruits of many years of reflection on the art and science of Research itself. A humanitarian as well as a top-notch investigator, Dr. Ingle has written in a simple style on such complex subjects as the methods of science and its basic assumptions, the limitations of mind, causality, probability, experimental errors, clinical investigation and the nature of creativity. But in many pages one can glimpse the author's concern for the individual. This is noted especially in the last chapter on Relationships Among Scientists. One gathers that the writer thoroughly enjoys his work and at the same time has immense reverence for his calling.

A notable characteristic of the book is the profusion of appropriately amusing quotations from *Alice in Wonderland*. If there is any criticism of this book, it is that it is too brief: in a number of instances one would have wished for a fuller discussion. However, as indicated in the preface, the book is chiefly intended for students who are preparing for or are beginning research in biology and medicine. They will certainly profit from it. So will many others in research who perhaps consider they know "all about it." This reviewer believes every reader will profit to some extent by reading this interesting book.

S. O. W.

Metabolic Regulation, by Théophile Cahn. Editions Presses Universitaires, Paris, 1956, pp. 70.

This book by the Director of Research of the CNRS (Centre National de Recherches Scientifiques), will be of greatest value for all institutions where the physiology of nutrition, and particularly the physiology of the intermediary metabolism, is studied.

As newer technics continuously enhance our knowledge, and more and more separate specialities develop, it becomes increasingly difficult to retain an overall view of the essential problems. The author has attempted to present as complete a synthesis as possible of all earlier studies concerning metabolic regulations. The book is therefore a valuable reference work with much valuable data which previously were scattered throughout many monographs and journals.

In a preliminary chapter on diabetes mellitus, one of the major subjects of physiologic study, a review is presented of the studies in this field and of the evolution

of the concepts which have led to the present perfected methods and satisfactory results. Then follows the first and the most important part which deals with the circulation of metabolites in the organism.

Glycemia is elucidated from different points of view: constancy, provoked hyperglycemia, renal threshold, peripheral and hepatic glycemia. Subsequently, the author discusses the influence of the nerve centers and especially of the endocrine glands: the pancreas and its effect on the blood sugar level. A whole chapter is devoted to the physiology of insulin, also, the reciprocal influences of the hypophysis, the adrenals and the thyroid, and finally the blood sugar levels of animals with alloxan and with phlorhizin diabetes.

Another chapter deals with the role of the liver in carbohydrate metabolism: glycogenolysis and glycogenesis, *in vitro*, hepatic glycoregulation *in vivo*, and the influence of the endocrine glands on this process.

The author subsequently discusses the circulation of the lipids under hormonal influences, and the role of the liver and of the muscles in lipid metabolism. A more concise discussion is devoted to the proteins insofar as they can be regarded as metabolites playing a part in the process of energy production. The problem of the circulation of water and ions is studied here only in regard to the relations existing between their metabolism and the endocrine glands.

The value of this book, which will doubtless be of great service to the profession, is enhanced by an extensive bibliography. Even if the scope of the subjects dealt with does not permit completeness, the book gives, in 70 pages, the essentials of the subject.

HUGUES GOUNELLE

Drugs—Their Nature, Action and Use, by Harry Beckman. Saunders, Philadelphia, 1958, pp. 728, \$15.00.

The prolific professor of pharmacology, Dr. Harry Beckman, has written an unusual textbook for medical students. It has the remarkable virtue of being an exceptionally readable students' text at the same time that it is a good reference text for practicing physicians.

The advantages of this book may be listed as follows: The style is refreshingly simple, clear, and has the personal touches characteristic of the author's other works. Much attention is paid to the recently introduced drugs (and reference to common trade names is helpful). There is a copious index. The typography is pleasant

and use of bold-face subheads is a useful feature in such a text.

These virtues often contain within themselves certain potential defects, which should be pointed out for the reader to evaluate. The admirable, almost chatty, style tends to be exceptionally persuasive. And while every author has the right to express opinions, this may raise interesting questions such as: Is it "right" for medical students to be exposed (and likely convinced thereby) to strong opinions when they are not yet in a position to evaluate all the statements? Related to this is the frequent use of *one* brand name as an example of a class of compounds. Students might believe, for example, that Hyflavin is the name of the only riboflavin preparation. Certainly all brand names for all drugs could not, and need not, be listed. The problem is difficult and not easily solved.

Similarly, discussing six synthetic belladonna-substitutes in the treatment of Parkinsonism would seem to be more useful to the prescribing physician than to the medical student who perhaps has not yet seen a patient with the disease.

These comments are not criticisms of Beckman's book but rather point out the problem of a pharmacologic text prepared for the student. Certainly this text can be highly recommended and will be deservedly popular with medical students and practitioners alike.

S. O. W.

Clinical Enzymology, ed. by G. J. Martin, Little, Brown, Boston, 1958, pp. 241, \$6.00.

Fundamentals deemed essential to understanding medical applications of enzymology are presented in this relatively small volume. Only two of the seven chapters actually elaborate upon current clinical enzymology (parenteral and diagnostic uses, respectively). The editor is responsible for three chapters which are indirectly clinical. Provocative speculation and astute review of selected experimental data form the matrix of this text. Physical chemistry of enzymes is discussed generally by M. J. Sullivan. Pharmacological and classical biochemical aspects are discussed by J. M. Beiler. Parenteral applications are covered in 34 pages by H. Tanyol, W. M. Swain, and J. M. Beiler. Clinical pathology and diagnostic uses of enzymes are summarized in 47 pages by G. V. Rossi.

In the clinical chapters, the information appears to be more suggestive than conclusive. Diagnostic and prognostic value of tissue and blood levels of various enzymes are discussed. Proper caution against "precision diagnosis" on the basis of specific enzyme levels is stressed, in view of fluctuations in activity of particular enzymes. Limitations of past experimental studies with impure enzymes are discussed. For the average clinician, the chapters on protein biology, polymerases, and perspectives may be frustrating. However, the biologist, physiologist, and pharmacologist will be intrigued by the keen review of facts and the enthusiastic manner of presentation. Analogies are made between

the antigen-antibody relationship and enzymatic activity, centered about the complementariness of the respective interacting molecules. Three enzymes are emphasized as of potential application in arteriosclerosis, collagen diseases, and cancer-elastase, collagenase and ribonuclease, respectively.

The text is an intellectual shelf-mate to the recent (1957) Vol. 68, Art. 1, p. 244, *Ann. New York Acad. Sc.* monograph on the clinical applications of proteolytic enzymes, for which G. J. Martin was consulting editor. In the words of the editor of the text, clinical enzymology is dedicated, at least, . . . secondarily . . . to the proposition that restoration of normal enzymatic milieu is essential to a return to health and that a significant directional force toward that restoration can be achieved by the administration of enzymes." E. COHEN

Health Yearbook 1957, compiled by Oliver E. Byrd, Stanford Univ. Press, Stanford, Calif., 1958, pp. 278, \$5.50.

Those concerned with the health problem in its broad psycho-socio and physical aspects have undoubtedly found this annual Health Yearbook of sufficient value to encourage the editor and publishers through 15 years of research, selection, and publication. For this 15th edition, as in the previous editions, approximately 2,000 articles were screened, and about 250 selected for abstracting.

The readers of this JOURNAL will of course be particularly interested in the 14-page chapter on Nutrition and Health which is subdivided into sections under the following headings: Social and Cultural Implications of Food and Food Habits; The Meaning of Food; Fats in the Diet; Fats and Heart Disease; Diet and Heart Disease; Dietary Fat and Deaths from Heart Disease; Cancer and Food; Food and Goiter; Food Allergy and Diarrhea; Coffee and Obesity; Vitamin D Intoxication; Nicotinic Acid Overdosage; Nail Defects and Gelatin; Food Faddists Badly Nourished.

One may, however, question the adequacy of so brief a chapter covering so vast and important a literature. In this JOURNAL, as an example, during 1957 approximately 75 original articles were published plus abstracts of over 300 articles which had been published in other specialty, general medical, and scientific journals.

In format, the book is well set up, including a good bibliography and subject and author index. C. I. P.

Chemistry of Lipides as Related to Atherosclerosis, ed. by I. H. Page, Thomas, Springfield, Ill., 1958, pp. 334, \$8.50.

In May, 1957, a symposium attended by 95 outstanding scientists was held under the auspices of the National Advisory Heart Council. The presentations and discussions which followed form the substance of this book. Among the authors and discussers are investigators in universities, governmental institutions,

and industry. As the title suggests, emphasis is on biochemistry of lipids. Problems in lipid transport, metabolism, and biochemical interactions are described for the various lipid fractions. All the papers are well written and clearly illustrated. The most clinical papers are by the Rockefeller group, which present much of the material concurrently presented in medical journals. As is often found in proceedings of symposia, the discussions after the papers are, occasionally, even more illuminating than the articles themselves. Throughout this book the presentations are of a uniformly high level and the text shows, here and there, the hand of the able editor.

This book should appeal to all investigators in the field of atherosclerosis as well as in lipid metabolism. It presents some of the best views of this important aspect of nutrition. S. O. W.

Office Gastroenterology, by Albert F. R. Andresen. Saunders, Philadelphia, 1958, pp. 707, \$14.00.

Dr. Andresen has courageously essayed to write an up-to-date text covering all features of gastroenterology in a single volume. He writes from a wide experience and has attempted to cover all possible subjects, clinical entities, technics, and clinical problems likely to be faced in the treatment of digestive diseases. Despite its almost encyclopedic completeness, the monograph is well arranged and reads easily, and provides a valuable reference volume.

Dr. Andresen's strong opinions about the importance of gastrointestinal allergy are set forth at length, including instructions on the allergic therapy for chronic ulcerative colitis. In view of his own extensive experience in this area, one can pardon his failure to indicate the highly controversial nature of the subject matter presented. There are other areas of treatment in which Dr. Andresen takes what may be considered a controversial or possibly minority position. For instance, he outlines a treatment for massive gastrointestinal hemorrhage, indicating what would be considered by most practicing gastroenterologists today as an inadequate blood transfusion program. In describing the treatment of Laennec's cirrhosis associated with ascites, Dr. Andresen is less emphatic than most of his colleagues in his instructions regarding salt restriction. Although other details in the management of chronic ulcerative colitis require pages, he dismisses steroid hormone therapy in a sentence.

The book is well-indexed; it does, however, have a lack of bibliographic references. The book suffers from the nature of the specialty of gastroenterology itself. To present all aspects of the field in one volume requires a brevity which makes it difficult or impossible to be sufficiently complete. Therefore, this one-volume work is more suitable for the internist than for the gastroenterologist. JAMES B. HAMMOND

Chemistry and Biology of Mucopolysaccharides (Ciba Foundation Symposium), edited by G. E. W. Wolstenholme and M. O'Connor, Little, Brown, Boston, 1958, pp. 329, \$8.50.

The rapid expansion of knowledge of carbohydrate-protein complexes is well highlighted by this Ciba Symposium on the chemistry and biology of mucopolysaccharides. Since the symposium was not restricted to a precise definition of "mucopolysaccharide," the participants, ranging from sugar chemists to clinical pathologists, were able to present a broad group of biochemical, biologic, and immunologic studies of sialic acid, neuraminic acid, glycoproteins, mucoproteins, orosomucoid, polysaccharides, and related substances. This has resulted in an impressive and interesting biochemical panorama with comprehensive chapters on blood group specificity by Morgan, serum glycoproteins by Winzler, urinary mucopolysaccharides by Maclagan, bacterial polysaccharides by Kabat, Dorfman, Westphal, and others, and the role of mucoprotein in the virus hemagglutination reaction by Gottschalk. A wide variety of chemical degradation and analytical studies on plant, bacterial, and animal mucopolysaccharides (even including those from human milk) are also presented and critically discussed by Dische, György, Stacey, and others. Workers in various fields will welcome this broad coverage, since it emphasizes the many common chemical problems which exist in the analysis of the complex and unusually tight chemical bonds between protein, hexoses, hexamines, and the recently delineated sialic acid-neuraminic acid moieties. The symposium amply affirms the major advances which have been made in establishing the chemical composition and physical characteristics of these ubiquitous carbohydrate-amino-sugar-protein substances from bacteria, serum, spinal fluid, connective tissues, etc. Kabat's brilliant attempt to correlate bacterial polysaccharide structure with immunologic reactivity as determined by oligosaccharide side chains is particularly well presented in this publication.

While the importance of glycoproteins as general biologic building blocks is evident from this comprehensive publication, one might have wished for a relatively greater physiologic emphasis on some of the presentations. The pathways involved in biosynthesis, breakdown, and turnover of these mucopolysaccharide substances *in vivo* remain obscure. The reader looking for an answer to the question of their immediate physiologic significance for pathologists and clinicians will not find it here. This merely reflects the status of our understanding of these substances.

It is unfortunate that the symposium did not conclude with a résumé in which each participant could discuss the possible implications of his work for future physiologic investigators. Such a chapter could have reviewed the fragmentary bits of evidence which hint at the possible function of serum mucoprotein complexes

(seromucoid, orosomucoid) along enzymatic, immunologic, serologic, coagulation, or even hormonal lines. The most invaluable portion of this book is the highly stimulating, and often extended discussions by the many eminent contributors following each paper. These contributions emphasize the necessary preoccupation with biochemical methodology which still pervades most researches on mucopolysaccharides.

EZRA M. GREENSPAN

Annual Review of Medicine, vol. 9, edited by D. A. Rytand, Annual Reviews, Inc., Palo Alto, 1958, pp. 488, \$7.00.

The 1958 volume of the *Annual Review of Medicine* contains, in addition to its ample coverage of an expanding literature, a fine chapter on nutrition and nutritional deficiency diseases by Vilter and Will. Special mention should also be made of an interesting chapter by Lasagna and Meier on the clinical evaluation of drugs, of two chapters on laboratory aids (paper chromatography and enzymology) and one on Soviet medical research.

As usual, several thousand references are briefly mentioned and woven into a running text which points out the highlights of current investigation as seen by the authoritative authors. This book again merits praise as a useful guide to the serious investigator in almost every field of medicine.

S. O. W.

A Primer for Coronary Patients, R. J. Needles and E. M. Stoney. Appleton-Century-Crofts, New York, 1958, pp. 176, \$3.75.

This volume represents the successful joint effort of a physician and a writer to explain to the layman what is known about coronary heart disease; the nature and manifestations of the disease, the complications, the treatment and prevention.

The book is well conceived and well written and the subject is dealt with thoroughly and accurately. The authors are to be complimented on the extent to which they have succeeded in writing from the point of view of the patient or his friend or relative, so that there is hardly a question that might come up that is not answered. All medical terms are carefully explained or paraphrased (with the exception of "hiatus hernia" on page 31). A number of illustrations add to the clarity of the text.

The point of view represented is conservative, stressing that much is known about coronary disease, and that the well-informed patient can live a satisfying life notwithstanding his illness and can greatly improve his prognosis.

This book may be highly recommended to the intelligent patient with coronary disease and his family.

W. H. ABELMANN

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.

The Guinea Pig in Research. Biology-Nutrition-Physiology by Mary Elizabeth Reid, Human Factors Research Bureau, Washington, D. C., 1958, pp. 87, \$2.00.

Cholesterol by David Kritchevsky, Wiley, New York, 1958, pp. 291, \$9.75.

Thirst. Physiology of the Urge to Drink and Problems of Water Lack by A. V. Wolf, Thomas, Springfield, Ill., 1958, pp. 536, \$12.50.

Remedies and Rackets. The Truth About Patent Medicines Today by James Cook, W. W. Norton, New York, 1958, pp. 252, \$3.75.

Advances in Clinical Chemistry, Volume I, edited by Harry Sobotka and C. P. Stewart, Academic Press, New York, 1958, pp. 398, \$12.00.

Medicine and the Navy 1200-1900, Volume II 1619-1714 by J. J. Keevil, E. & S. Livingstone, Edinburgh, 1958 (Williams and Wilkins, American agents), pp. 332, \$8.50.

Ciba Foundation Colloquia on Ageing. Volume 4. Water and Electrolyte Metabolism in Relation to Age and Sex, edited by G. E. W. Wolstenholme and Cecilia M. O'Connor, Little, Brown, Boston, 1958, pp. 327, \$8.50.

Ciba Foundation Symposium on the Neurological Basis of Behaviour, edited by G. E. W. Wolstenholme and Cecilia O'Connor, Little, Brown, Boston, 1958, pp. 400, \$9.00.

Food Habits and Nutrient Intakes in a Siamese Village. Studies in Bang Chan 1952-1954 by Hazel M. Hauck, S. Sudsaneh and Jane R. Hanks, Cornell University, Ithaca, N. Y., 1958, pp. 129, \$1.00.

The Interference Microscope in Biological Research by Arthur J. Hale, E. & S. Livingstone, Edinburgh, 1958 (Williams and Wilkins, American agents), pp. 114, \$5.00.

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

Food and You by Edmund Sigurd Nasset, Barnes and Noble, New York, 1958, pp. 166, \$1.25.