Book Reviews

Physiology: vegetative physiology. (Part I.) (Fiat Review of German Science, 1939–1946.) Berlin, Germany: U. S. Army, Economics Division, Research Control Branch, APO 742, 1948. Pp. 224.

This review was organized by the Field Information Agencies Technical (FIAT) of the military government for Germany under the editorship of F. H. Rein. It covers, year by year, German literature on vegetative physiology and other literature on the subject with which the Germans were in contact for the years 1939 through 1946. The contents are "Further Developments of Physiological Methods," by H. Brünner, "Physiology of the Gaseous Components of the Blood," by E. Opitz, "Physiology of Blood Coagulation," by E. Wöhlisch, "The Peripheral Circulation," by M. Schneider, "Physiology of the Heart," by K. Kramer, and "Electrocardiography," by E. Schütz. All of the authors have covered their subjects well.

It is not easy to summarize a review which refers to half a dozen papers on nearly every page. The section on methods deals particularly with electrical methods, including electrical manometers and technics for gas analysis. Among these is an "oxygen sound," by which a lamp and photocell can be introduced into the heart in animals to measure oxygen content of mixed venous blood *in situ*. The second deals with arteriovenous oxygen differences in different organs; that of pure muscle blood is high during rest (30 to 70%) and very high in maximal work (over 90%). References are made to the German Himalayan expedition reports. The section on blood coagulation should be valuable to those working in this complex field. The fourth section gives attention to Rein's work on the subordination of chemical and nervous vasoconstrictor mechanisms to local effects during activity. The fifth section discusses the control of the intact heart as compared with the isolated heart, and Rein's theory of interrelations between liver and heart metabolism. "Electrocardiography" is not amenable to analysis.

The review refers to many other papers of importance which could not possibly be listed here.

H. C. BAZETT

University of Pennsylvania

Biochemical evolution. Marcel Florkin. (Edited, translated and augmented by Sergius Morgulis.) New York: Academic Press, 1949. Pp. vi + 157. (Illustrated.) $4.00.

This short monograph fails to achieve the author's purpose as stated in his foreword. In the translator's preface it is suggested that "Some may object that the title is overambitious . . . and beyond the true measure of the book's scope." The reviewer does object and not only because, as suggested by the translator, "it deals with only half of the biological world." A major part of the book is devoted to a secondary purpose, i.e., to showing that a biochemical classification of animals does not differ from the taxonomy of morphologists. That a static classification of the animal kingdom, either biochemical or morphological, supports the common conception of evolution as a dynamic and continuing aspect of life is at least a debatable point. Approximately one-fourth of the text describes examples of so-called biochemical adaptations. The pitfalls encountered in considering adaptions as a factor in the evolutionary process are too well known to be emphasized. In the extreme analysis life itself could be cited as an adaption. The contribution of modern genetics to our understanding of evolution is barely mentioned.

The volume is well bound and the typography is excellent. The style of presentation is dull and uninspiring; perhaps it suffers in translation. Both biologists and biochemists will encounter a peculiar difficulty in reading the text: common, general taxonomic, and specific names are intermingled; thus, rat, oyster, and *Tenebrio molitor*. The important and extensive studies of the biochemistry of lower forms of animal life by Florkin and co-workers are discussed briefly in relation to the author's views on biochemical evolution. These studies could provide the material for a monograph apart from their relation to evolution. The reviewer suggests that this would have been of more interest as the present volume contains little about biochemical evolution that has not been expressed better by previous writers.

C. R. TREADWELL

School of Medicine,
George Washington University

Climatic accidents in landscape making: a sequel to "Landscape as developed by the processes of normal erosion." (2nd printing.) C. A. Cotton. New York: John Wiley, 1948. Pp. xx + 354. (Illustrated.) $7.00.

This is the second printing of a book issued in 1942. It is in part a sequel to the author's *Landscape*, which treats of land forms developed by common processes in humid climates. This volume deals with "interruptions" in "normal" geomorphic cycles.

Section I discusses dry and dry-seasonal climatic landscape types. It includes eolian erosion, arid erosion cycle, the cycle under semi-arid conditions, piedmont slopes and lateral planation, sheetflood erosion, the cycle of desert mountains, savana landscapes and inselbergs, and sand dunes. The reviewer does not consider these forms to be climatic accidents in a strict sense but rather results of specific climatic conditions, as "normal" as those resultant from humid climates.

Section II is a treatment of the salient features of glaciated landscapes. It treats of glaciers (in a brief and somewhat elementary fashion), glacial erosion (rather briefly), the manifold land forms resulting from glacier

erosion (in considerable detail), the doctrine of glacial protection, and the constructional forms. In a long range geologic view these are climatic accidents, although scarcely more so than some other geomorphic phenomena which are not repeated with any great regularity. The discussion of erosional features produced by alpine glaciers is excellent and stimulating.

The illustrations, both text diagrams and photographs, are notable in their clarity and pertinence.

The author's effort has been successful in assembling and interpreting a vast amount of geomorphic data in two climatic environments, and in its synthesis into a coherent and interesting picture of land forms in arid and glacial climates. This is a book that should be on the reading shelf of all geomorphologists, geographers, and others interested in these climatic factors.

ARTHUR BEVAN

Illinois Geological Survey

Advances in protein chemistry. (Vol. IV.) M. L. Anson and John T. Edsall. (Eds.) New York: Academic Press, 1948. Pp. ix + 575. (Illustrated.) $8.50.

The eight reviews and essays in this volume deal with an interesting variety of themes bearing on the properties of proteins and amino acids.

In "Protein Gels," John D. Ferry surveys developments of the past few years, mainly on gelatin and fibrin gels, and provides a valuable discussion of the phenomenon of protein gelation. In "The Interactions of Proteins and Synthetic Detergents," Frank W. Putnam considers, in addition to the qualitative effects of surface active compounds on proteins and biological systems, evidence as to the mechanism of such interactions—binding via electrostatic forces, and the complex formation aided and stabilized by van der Waals' forces between nonpolar groups. "Proteins of Pathogenic Bacteria," by A. M. Pappenheimer, Jr., presents a brief but stimulating discussion of bacterial proteins (particularly from group A hemolytic streptococci), exotoxins and toxic enzymes, and methods for their extraction.

Alexander B. Gutman, in "The Plasma Proteins in Disease," furnishes a much needed review of a highly complicated subject. The critical discussion of methods, results, and their interpretations will be appreciated by the thoughtful reader. "Preparative Electrophoresis and Ionophoresis," by Harry Svensson, offers brief technical discussions of apparatus (compartment type and moving boundary) for the electrical fractionation of crystalloids and colloids. A. Neuberger, in "Stereochemistry of Amino Acids," gives well-organized discussions of the configuration of the amino acids, reactions involving substitutions on the α-carbon atom, catalytic racemization, and the occurrence of D-amino acids and their derivatives in nature. "X-Ray Studies of Amino Acids and Peptides," by Robert B. Corey, presents the results of diffraction studies on the atomic positions in crystals of diketopiperazine, glycine, DL-alanine and β-glycylglycine, and inferences therefrom as to the structures of and intermolecular forces in crystalline proteins. "Heme Proteins," by Jeffries Wyman, Jr., is an extensive survey "designed to bring out the beautiful interdependence of structure and function in the heme proteins, and in particular the balance between the character of the heme, the character of the protein, and the nature of the heme-protein linkage, in determining the properties of the molecule."

BARNETT COHEN

Johns Hopkins School of Medicine

Scientific Book Register

AMIS, EDWARD S. *Kinetics of chemical change in solution.* New York: Macmillan, 1949. Pp. ix + 332. (Illustrated.) $5.00.

ARNOW, L. EARLE. *Introduction to physiological and pathological chemistry.* (3rd ed.) St. Louis: C. V. Mosby, 1949. Pp. 595. (Illustrated.) $4.00.

BALDWIN, ERNEST. *An introduction to comparative biochemistry.* (3rd ed.) Cambridge, Engl.: Univ. Press; New York: Macmillan, 1948. Pp. xiii + 164. (Illustrated.) $1.75.

MCNEMAR, QUINN. *Psychological statistics.* New York: John Wiley; London: Chapman & Hall, 1949. Pp. vii + 364. (Illustrated.) $4.50.

MOORE, RAYMOND CECIL. *Introduction to historical geology.* New York-London: McGraw-Hill, 1949. Pp. ix + 582. (Illustrated.) $5.00.

SCHENK, EDWARD T., and MCMASTERS, JOHN H. (Revised by KEEN, A. MYRA, and MULLER, SIEMON WILLIAM.) *Procedure in taxonomy: including a reprint of the International Rules of Zoological Nomenclature with summaries of opinions rendered to the present date.* (Rev. ed.) Stanford, Calif.: Stanford Univ. Press, 1948. Pp. vii + 93. $2.50.

TESCH, J. J. *The thecosomatous pteropods: the Indo-Pacific.* (Part II.) (The Carlsberg Foundation's Oceanographic Expedition Round the World 1928–30 and Previous "Dana" Expeditions, No. 30.) Copenhagen: C. A. Reitzels; London: Oxford Univ. Press, 1948. Pp. 45. (Illustrated.) 10/.

The measurement of stress and strain in solids: based on the proceedings of a conference arranged by the Manchester and District Branch of the Institute of Physics on 11, 12, and 13 July 1946. London: Institute of Physics, 1948. Pp. x + 114. (Illustrated.) $4.00.

———. *Jaarboek der Koninklijke Nederlandsche Akademie van Wetenschappen.* Amsterdam: N. V. Noord-Hollandsche Uitgevers Matschappij, 1948. Pp. 225. (Illustrated.)