Book Reviews

Advances in Enzymology and Related Subjects of Biochemistry, Vol. XIV. F. F. Nord, Ed. New York: Interscience, 1953. 470 pp. incl. cumulative index. Illus. $9.25.

In this rapidly progressing field, where textbooks have a way of becoming outdated before they can be published, these annual reviews have provided an indispensable reference source for the expert as well as for the novice in the field. Volume XIV constitutes a notable addition to this series.

The currently popular theories concerning the role of adenosine triphosphate in energy production and metabolism are reviewed by T. Bücher in a chapter entitled Energy Transport in Living Cells. Also briefly discussed are a number of concepts which have received little attention from enzymologists, including entropy changes, the contribution made by degrees of freedom, and the role of hydrogen bonded systems in proton transport. It is unfortunate that some of these are not given more thorough treatment.

In Pantothine and Related Forms of the *Lactobacillus bulgaricus* Factor (LBF), E. E. Snell and G. M. Brown provide a very thorough review of the chemistry and biological activity of these compounds, their relationship to coenzyme A, and their microbiological activity.

Two chapters are concerned with the enzymatic reactions involving phenylalanine and tyrosine. In Metabolism of Phenylalanine and Tyrosine, A. B. Lerner considers a number of reactions involving these amino acids, including their oxidation and melanin formation, their relation to intermediates of the citric acid cycle, hormone production, and the synthesis of the aromatic nucleus. The author's mechanism for tyrosinase action, admittedly controversial, might have been supported by a more extensive review of the evidence. I. W. Sizer discusses the Oxidation of Proteins by Tyrosinase. Methods of study and numerous examples are cited.

W. Langenbeck contributes a chapter entitled Chemistry of Organic Catalysis reviewing a number of catalytic mechanisms in which intermediate complexes are formed. Enzymatic reactions are interpreted in the light of these organic model systems.

An excellent review of Enzymatic Isomerization and Related Processes is provided by L. F. Leloir. Racemization reactions, sugar transformations, and phosphate ester interconversions are covered. The need for further study of isomerization reactions is emphasized.

In a controversial article, O. Hoffmann-Ostenhof offers suggestions for a more rational classification and nomenclature of enzymes. This is a commendable effort to systematize enzyme nomenclature which contains much justified criticism of currently used names, but it is doubtful that the system suggested will receive wide acceptance. The names proposed, however rational, are often very cumbersome. The use of arrows in spelling is objectionable since these cannot be designated in conversation. Despite these and other deficiencies, the article contains a number of valuable rules worthy of consideration.

Several new techniques for the study of protein structure are the subject of a thorough and well-written review by P. Desnuelle. Included are sections on separation and identification of amino acids in protein hydrolysates and methods for the study of amino acid sequences in proteins. Older as well as newer techniques are discussed in detail. The section on protein purification duplicates material covered in later chapters.

In Adsorption Studies of Enzymes and Other Proteins, C. A. Zittle covers the theory of adsorption phenomena and describes results obtained with a number of old and new adsorbents. Unfortunately, as the author indicates, the results have not measured up to early expectations. This review would be of more value to the uninitiated had it included a more critical evaluation of the various adsorbents and eluants which have been employed for protein purification.

In the final chapter on principles and procedures in the isolation of enzymes, S. Schwimmer and A. B. Pardee make a valuable attempt to "systematize the multitude of procedures" successfully used for enzyme purification. The authors suggest methods for standardizing the reporting of results of enzyme purification and for assessing the relative merits of purification steps.

The volume is well edited and quite free of typographical errors, although several serious misprints have been incorporated. The structure of reduced lactoflavin (p. 180) is incorrectly represented.

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New Books

The Atomic Submarine and Admiral Rickover. Clay Blair, Jr. New York: Henry Holt, 1954. 277 pp. + plates. $3.50.

Experimental College Physics: A Laboratory Manual. 3rd ed. Marsh W. White and Kenneth V. Manning. New York–London: McGraw-Hill, 1954. 347 pp. Illus. $5.00.

The Unique Influence of The Johns Hopkins University on American Medicine. Richard H. Shryock. Copenhagen, Denmark: Ejnar Munksgaard, 1953. 77 pp. Dan. kr. 14.00; bound: 17.50.

Curious Creatures. Erna Pinner. New York: Philosophical Library, 1953. 256 pp. Illus. $4.75.

Science in Alaska, 1951. Proceedings of the Second Alaskan Science Conference, AAAS, Alaska Division. (Order from: Dr. Troy L. Péwé, Box 4004, College, Alaska.) 362 pp. $3.00.

The Major Features of Evolution. George Gaylord Simpson. New York: Columbia Univ. Press, 1953. 434 pp. Illus. $7.50.

General Virology. S. E. Luria. New York: Wiley; London: Chapman & Hall, 1953. 427 pp. Illus. $8.50.