

Chapter VII, Visible and Ultraviolet Absorption Spectra, is exceptionally well handled by Orgel. There is also a short section on infrared absorption which it is to be hoped will stimulate interest in this rather neglected phase of acridine research.

The formulas while small are perfectly clear because the numbering is outside the ring. An excellent job of proof reading and printing has been done for the most part.

CANCER RESEARCH LABORATORY
UNIVERSITY OF FLORIDA
GAINESVILLE, FLORIDA

FRANCIS E. RAY

organisms. The incorporation of these amino acids into proteins is not considered. The review contains over 1000 references.

The remaining two chapters deal with marine proteins. G. Hamoir summarizes the present state of knowledge on fish proteins, especially those from skeletal muscle. Lionel A. Walford and Charles G. Wilber discuss the sea as a potential source of protein food. More than half of their discussion is concerned with economics and sociology rather than chemistry.

DEPARTMENT OF CHEMISTRY
STATE UNIVERSITY OF IOWA
IOWA CITY, IOWA

CHARLES TANFORD

Advances in Protein Chemistry. Volume X. Edited by M. L. ANSON, Cambridge, Massachusetts, KENNETH BAILEY, University of Cambridge, Cambridge, England, and JOHN T. EDSALL, Biological Laboratories, Harvard University, Cambridge, Massachusetts. Academic Press, Inc., Publishers, 125 East 23rd Street, New York 10, N. Y. 1955. viii + 425 pp. 15.5 × 23.5 cm. Price \$9.00.

"Advances in Protein Chemistry" is an annual publication of reviews which I read because I want to, and not because of a duty to keep up with recent work in the field. There are a number of reasons for this. The nature of protein chemistry is one of these; research on this subject is carried out by persons trained in many different disciplines, with the result that it is more difficult to understand the original publications of one's colleagues than in most fields of research. Another reason is undoubtedly the fact that the editors of "Advances in Protein Chemistry" are themselves active workers in the field. They have a knack of picking the right authors to review the right topics at the most appropriate time. There also appears to be no attempt to enforce uniformity either in style or length, so that each author is free to choose the method of presentation he deems best.

Volume X of "Advances in Protein Chemistry" contains a review by Gertrude E. Perlmann on the nature of the phosphorus linkage in phosphoproteins. The review concentrates on elucidation of the phosphorus linkage in ovalbumin, casein and pepsin. Another review dealing largely with a few specific proteins is by Bert L. Vallee on zinc and metalloenzymes. It features the preparation and properties of four enzymes containing zinc as an essential constituent: carbonic anhydrase, carboxypeptidase, alcohol dehydrogenase and a zinc protein from leukocytes. There is also a brief discussion of the general coordination properties of zinc.

J. Steinhardt and E. M. Zaiser present a review called "Hydrogen Ion Equilibria in Native and Denatured Proteins" which deals only superficially with the general subject indicated by the title. Its main virtue lies in a summary of the authors' own work on the thermodynamics and kinetics of the acid denaturation of hemoglobin.

C. E. Dalgliesh presents a review of the metabolism of the aromatic amino acids, considering the degradation, transformation and biosynthesis of these compounds in various

Elementary Nuclear Theory. Second Edition. By HANS A. BETHE, John Wendell Anderson Professor of Physics, Cornell University, and PHILIP MORRISON, Professor of Physics and Nuclear Studies, Cornell University. John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 1956. xi + 274 pp. 15.5 × 23.5 cm. Price, \$6.25.

The first edition of this book was inflated out of the notes for a series of lectures and was intelligible to the relatively uninitiated only with difficulty; it was an outline of the elements of nuclear theory and their application in a few selected areas which was incisive and compact, but suitable only for one already well versed in the subject matter.

The second edition of this book is still an outline and it still covers only a selected group of topics; however, in the revision a great deal of connective and elaborative material has been added. The text reads extremely well and would be suitable for use in introductory courses or for self study. The authors have been true to the spirit of the original selection of topics and have resisted the natural temptation toward encyclopedic coverage. I would guess that about half of the almost 100% increase in size of the book can be ascribed to a real effort at clarification and improvement in literary style; the other half is employed to up-date the text and add a few new subsections.

The book is divided into three major sections. In the first, Descriptive Theory of Nuclei, the factual and some of the theoretical material on nuclear size, β -disintegration, spin and statistics, etc., are covered; a new sub-section on π and other mesons is included. The second section, Quantitative Theory of Nuclear Forces, deals with topics such as: the physical properties of nucleons, ground state of the deuteron, scattering, non-central forces, etc.; the new subsections here deal with nucleon scattering at high energies and polarization of neutrons. The third main section of the first edition dealt with β -disintegration and the compound nucleus; in this second edition, this section surveys models for the structure of the nucleus, nuclear reactions and scattering, and β -disintegration. A table of nuclear species is appended.

NOYES LABORATORY OF CHEMISTRY
UNIVERSITY OF ILLINOIS
URBANA, ILLINOIS

PETER E. YANKWICH