

Les Gaz Inertes—L'Hydrogène—Les Halogènes. By PAUL LAFFITTE, Professeur à la Faculté des Sciences de Paris and HENRY BRUSSET, Professeur à l'École Centrale des Arts et Manufactures. Masson et Cie, Éditeurs, 120 Boulevard Saint-Germain, Paris 5, France. 1955. 396 pp. 17.5 × 25 cm. Price, Broche 3600 fr., Cartonne toile 4200 fr.

The book is divided into three chapters, Chapter I (32 pp.) deals with rare gases, Chapter II (114 pp.) with hydrogen and Chapter III (238 pp.) with halogens. Each chapter follows roughly the conventional scheme: existence in nature, industrial and laboratory preparation, physical properties and chemical properties of the elements, preparation, physical properties and chemical properties of some of the compounds of these elements. There is no indication that the book will be followed by other volumes covering the remainder of the periodic system.

In the preface the authors state that their primary objective was to write a "text-book" rather than a comprehensive treatise. They admit, therefore, that no attempt was made to cover all the chemical aspects of the described elements, but rather they made a somewhat arbitrary selection of the topics which they thought to be of most importance. In making the selection, they state that an effort was made to stress in particular the more recent developments.

It is difficult to judge which are the "important" aspects of the chemistry of these elements and which are of lesser importance. However, it seems to this reviewer that too many topics of at least some importance have been either very briefly mentioned or omitted altogether. Among these are the recent developments in hydride chemistry, halogen complexes with aromatic compounds and other electron donors, the nature of iodine solutions in various solvents, polyhalogen complex ions, the chemistry of interhalogen compounds, etc.

The evaluation of a book of this type is not easy since it was written with a specific purpose of serving as a text in French universities, and it may well serve its purpose, although it is somewhat difficult for the reviewer to visualize a course covering only the chemistry of inert gases, hydrogen and halogens. The book was not intended to serve as a reference source on the elements covered by it, and the uneven coverage of the topics hardly makes it a suitable guide for a non-specialist desiring to get a comprehensive introduction to the chemistry of these elements. It is also unfortunate that the literature references are very sparse and are not always up to date.

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Advances in Protein Chemistry. Volume IX. Edited by M. L. ANSON, Lever Brothers Company Research Center, Edgewater, New Jersey, 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. 1954. viii + 542 pp. 16 × 23.5 cm. Price, \$10.50.

The first of the eight articles in this volume is a comprehensive review prepared by H. R. V. Arnstein on the metabolism of glycine. The article successfully spans a broad cross-section of biochemistry, ranging from the non-nitrogenous precursors of glycine to the biosynthetic reactions which utilize the amino acid to yield carbon-carbon and carbon-nitrogen bonds in larger molecules. The author's inclusion of a summary for each section of the review adds to its readability.

An article on the resolution of racemic α -amino acids, by Jesse P. Greenstein, represents an admirable summary of the history of the subject, the principles and nomenclature of the stereochemistry of the amino acids, and the various methods for the separation of the optical isomerides. The discussion of the methods using renal acylases and amidases for asymmetric hydrolysis, as studied by Greenstein and his associates, forms an important and concise section which is well integrated with the broad summary of the literature on the subject as a whole.

Margaret I. Chalmers and R. L. M. Synge have written on the processes of digestion of protein and nitrogenous compounds in ruminants. The authors conclude that although fermentation by rumen microorganisms can make possible the substitution of ammonia and urea nitrogen for protein in the diets of ruminants, there is still need for research on the practical problem of the economic use of existing protein feeds. Wilfred H. Ward and Harold P. Lundgren have written on the formation, composition and properties of keratins in general, with primary emphasis on the chemistry of the wool fiber. M. Laskowski and M. Laskowski, Jr., have brought together the information on trypsin inhibitors from different sources, such as pancreas, seeds, colostrum, ovomucoid, blood plasma and urine.

Three of the reviews are concerned with the physical structure of protein molecules. In a short article, San-Ichiro Mizushima covers recent work on interatomic distances and bond angles in small peptides as determined by infrared spectra and X-ray diffraction, and includes a discussion of possible extended, folded and helical configurations of polypeptide chains. David F. Waugh has made an extensive summary of protein-protein interactions and the forces which underlie them. The major part of the discussion is centered around the phenomenon of the association of more than one molecule of the same or similar protein species to give dimers and polymers which can be dissociated under suitable conditions into the subunits of lower molecular weight. There is a growing appreciation of the frequency with which such associations occur, not only with hemocyanin and with insulin but also with serum albumin, fibrinogen, and many other proteins. The author discusses the interaction of both like and unlike proteins in terms of the forces which cause the associations—covalent bonds, charged groups, hydrogen bonds and van der Waals' forces. D. F. Cheesman and J. T. Davies have reviewed the subject of protein monolayers, and have included information on the dissociation or unfolding of proteins into subunits at interfaces. The authors have concluded their chapter with a discussion of possible roles played by interfacial phenomena in the biochemistry of the living cell.

The reviewers and the editors have produced a most commendable volume in this series.

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STANFORD MOORE

Electrochemistry in Biology and Medicine. Edited by THEODORE SHEDLOVSKY, Rockefeller Institute for Medical Research. John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 1955. xii + 369 pp. 15.5 × 23.5 cm. Price, \$10.50.

The nineteen chapters in this book represent contributions made at the meeting of the Electrochemical Society in April, 1953. Some of the chapters are standard scientific papers describing hitherto unpublished work, and others are straight reviews. The scope of this text is extremely broad, ranging from pure physical chemistry (potentials across membranes and dissociation constants of complex ions) to pure medical technology (details of electrocardiography and electroencephalographic diagnosis of brain tumors). Since the nineteen chapters were all written by different authors, the style and type of writing varies considerably from chapter to chapter.

In essence, this book is equivalent to a single issue of a technical journal. This reviewer believes that such a group of relatively unrelated papers ought not to be bound in hard covers in the manner of a regular textbook or monograph. Rather, the purpose of disseminating this type of information would be better served by a less elaborate format with a paper cover or by publication in a regular journal. If this book were "an authoritative survey of current work and thought in the field" as stated on the dust jacket, it would have to contain considerably more clarifying and connecting passages, and the chapters should be more closely related to each other so as to make the book into a homogeneous treatment of the subject matter.

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