
BOOK REVIEWS

Annual Review of Biochemistry. Volume 26. By J. MURRAY LUCK, Editor, Stanford University, FRANK W. ALLEN, Associate Editor, University of California, and GORDON MACKINNEY, Associate Editor, University of California. Annual Reviews, Inc., Grant Avenue, Palo Alto, California. 1957. ix + 768 pp. 16.5 × 23 cm. Price \$7.00 (U.S.A.), \$7.50 (elsewhere).

One of the first impressions obtained in reviewing volume 26 of the "Annual Review of Biochemistry" is the enormity of the task undertaken by the editorial committee and individual authors to summarize the work published during the last year. Many of the authors have apologized for the omission of valuable information, since, due to lack of space they were compelled to limit the review to one aspect of the subject. It is indeed fortunate they have chosen to adopt this attitude. This enables the review to be more than a catalogue of papers reported in the last year, but rather one in which the reviewer has an opportunity to speculate, integrate, and put things in their proper perspective.

The volume contains a prefatory chapter entitled "Forty-Five Years of Biochemistry" by Sir Rudolph Peters. This is a brief autobiography by a very prominent biochemist. It is highly recommended reading especially for individuals embarking on a career in biochemistry. A new chapter has made its debut in this volume—Biochemistry in the U.S.S.R. by Jakob A. Stekol. In this section various aspects of carbohydrate metabolism, protein and amino acid metabolism, enzymatic studies, biochemistry of the brain and cancer published in the Russian journals are reviewed.

The 1957 volume contains the following chapters: Prefatory Chapter by Sir Rudolph Peters; Biological Oxidations by Henry R. Mahler; Nonoxidative, Non-Proteolytic Enzymes by Sigmund Schwimmer; Proteolytic Enzymes by Bernard J. Jandorf and Harry O. Michel; Metabolism of Lipids by Eugene P. Kennedy; Carbohydrate Metabolism by C. de Duve and H. G. Hers; Water-Soluble Vitamins, Part I (Vitamin B₁₂, Folic Acid, Choline and Paraminobenzoic acid) by John R. Totter; Water-Soluble Vitamins, Part II (Biotin, Pyridoxin group, Nicotinamide, Ascorbic acid) by Louis D. Greenberg; Water-Soluble Vitamins, Part III (Pantothenic acid, Thiamine, Lipoic acid, Riboflavin and Inositol) by G. David Novelli; The Fat-Soluble Vitamins by K. L. Blaxter; Nutrition by O. W. Portman and D. M. Hegsted; X-ray Studies of Compounds of Biological Interest by J. C. Kendrew and M. F. Perutz; The Chemistry of the Proteins by Daniel Steinberg and Elemer Mihalyi; Amino Acid and Protein Metabolism by Henry Kamin and Philip Handler; The Nucleic Acids by Waldo E. Cohn and Elliot Volkin; Biochemistry of the Steroid Hormones by Ralph I. Dorfman; Haem Pigments and Porphyrins by C. Rimington; Clinical Applications of Biochemistry by John G. Reinhold; Biochemistry in the U.S.S.R. by Jakob A. Stekol; Chemistry of the Carbohydrates by John C. Sowden; and The Biochemistry of Muscle by Hans H. Weber.

This series continues to be a tremendous help to those in biochemistry as well as to others interested in rapidly bringing up to date their knowledge of the work done in this field.

DEPARTMENT OF BIOLOGICAL CHEMISTRY
UNIVERSITY OF MICHIGAN
ANN ARBOR, MICHIGAN

ARMAND J. GUARINO

La Chimie Nucléaire et ses Applications. By M. HAÏSSINSKY, Directeur de Recherches au C.N.R.S., Institut du Radium, Paris. Masson et Cie., Editeurs, 120, Boulevard Saint-Germain, Paris 6^e, France. 1957. vi + 651 pp. 17 × 25.5 cm. Price, Broché: 5.000 fr. Cartonné toile: 5.6000 fr.

Professor Haïssinsky's book is a highly condensed summary of the various fields of science which pass under the names of nuclear chemistry or radiochemistry. It includes such topics as nuclear reactions, radio-active decay, fundamental particles, chemistry of synthetic elements, isotope

separation and many others. There is also a great deal of information about applications of nuclear science to chemistry, geology, industry and so on.

Obviously the specialist will not expect to learn much about his own field from such a book, but he will find valuable reviews of neighboring fields, with a large number of references.

Inadequacies and omissions must occur when one author attempts to cover so much ground. For example, the various theories of the fission process are dismissed in three pages, without reference to either Peter Fong or Aage Bohr. There is no reference to theoretical work later than 1947.

The transuranium elements are divided into two series called uranide and curide, rather than being lumped together in an actinide series. This device has the advantage of emphasizing the obvious chemical differences between, for example, uranium and curium. However, it fails to develop clearly the very close analogy between the elements beyond americium and the corresponding lanthanides. The point is that once the heaviest elements begin to behave in a regular way, from americium or curium and higher, they form a series which by any criterion is based on actinium as its first member. It is therefore very logical to call the series actinide rather than curide. Of far greater importance is to realize that one is arguing about the relative binding energies of electrons in the 5f and 6d configurations, and that these binding energies are nearly equal. To give names to groups and sub-groups is therefore to try to force a definite yes or no answer to a question which should really be answered in a much more complex manner.

The book is very attractively produced. The print and illustrations are clear. There are some interesting reproductions of historical documents in the handwriting of Becquerel, Curie and Rutherford. In so large and varied a book, an index of chapters at the beginning would have been useful. The English-speaking reader with only moderate reading speed in French will not find the book hard to read, since the style is clear and simple.

Professor Haïssinsky has written a book which is a great contribution to the literature of nuclear chemistry.

UNIVERSITY OF CALIFORNIA
RADIATION LABORATORY
BERKELEY, CALIFORNIA

B. G. HARVEY

Gmelins Handbuch der Anorganischen Chemie. Zink. Supplement Volume. System-Number 32. E. H. ERICH PIETSCH, Editor. Issued by the Gmelin-Institute for Inorganic Chemistry and published by Verlag Chemie, G. m. b. H., Weinheim/Bergstrasse, West Germany. Available in the United States from Walter J. Johnson, Inc., 111 Fifth Avenue, New York 3, N. Y. xxxvi + 1025 pp. with 191 figures. 18 × 25.5 cm. Price, \$138.00.

As each volume of this monumental work appears, amazement at its excellence only increases. This volume on zinc is no exception.

This encyclopedic Handbuch has a long and honorable history dating back nearly a century and a half to 1817. The present revision is the eighth and was begun in 1921 under the auspices of the German Chemical Society. In 1946, responsibility for the preparation of the Handbook was transferred to the Gmelin Institute where it currently rests.

The previous volume on zinc was one of the earliest units of the 8th edition and ran to less than a third of the number of pages of the present volume which is technically designated a "Supplement." The Table of Contents gives in parallel columns the page numbers in the two volumes on the various headings. However, the earlier volume becomes chiefly useful now in determining the status of knowledge in 1924 or in case one wishes to make an exhaustive study of a specific subject. Essentially the present volume is an annotated bibliography providing complete literature coverage only through 1949; nevertheless innumerable references

to articles since that date, even as late as 1955, are included and thus the volume is remarkably current.

The striking feature of this volume on zinc (as in the case of preceding volumes) is the exhaustive but concise and critical review of the literature. One can have nothing but admiration for the character of the work performed by the staff of thirty-eight whose names appear on the title page. The painstaking thoroughness and monumental scholarship so characteristic of Germaus in a work of this type, are clearly discernible. It should also be remarked that the increased use of diagrams, figures and graphs (191 against 14 in the previous volume) has added to the usefulness.

The extent of the coverage is shown by the main headings and the number of pages devoted to each: occurrence (136 pages), technical preparation (132 pages), preparation of special forms (6 pages), enrichment and separation of isotopes (2 pages), physical properties (124 pages), electrochemical behavior (137 pages), chemical behavior (68 pages), zinc alloys (23 pages), surface treatment of zinc and zinc alloys (96 pages), physiological effects (4 pages), detection and determination (43 pages), and compounds of zinc (255 pages).

The zinc technologist from the United States might at first be troubled by the lack of an index but this proves to be no handicap due primarily to the logical organization of the book and the detailed Table of Contents (36 pages). It is possible that this reviewer might at times have arranged some of the subject matter a little differently but that condition could always exist.

What Dr. W. J. Kroll, undoubtedly the world's foremost authority on titanium, said in reviewing the 481-page volume on that metal—"A publication such as this can, of course, not be read as a whole; it can only be used page-wise for its references"—is equally true of the volume on zinc. However, to test out the accuracy of presentation, this reviewer took as test cases a number of specific subjects on which he claims to have some knowledge and he must confess that he bows in humility before the authors. It could well be

a high-brow parlor game to seek out errors but this reviewer fears it would not be a rewarding one.

Notwithstanding the financial support of West German government and chemical industry, the price of the volume is high (\$138.00) but clearly it is only a small portion of the cost for so monumental a work.

THE EAGLE-PICHER COMPANY
JOPLIN, MISSOURI

A. PAUL THOMPSON

Rare Earths in Biochemical and Medical Research. A Conference Sponsored by the Medical Division, Oak Ridge Institute of Nuclear Studies, October, 1955. Edited by GRANVIL C. KYKER and ELIZABETH B. ANDERSON. Office of Technical Services, Department of Commerce, Washington 25, D.C. 1956. xviii + 468 pp. 20.5 × 26.5 cm. Price, \$2.20.

This book presents the reports of a conference on the rare earths in biochemical and medical research. It contains some seven papers on the chemistry, two papers on the isotopes, four on the pharmacology, nine on the biochemical and metabolic aspects, as well as eleven papers on the possible medical applications and the dosimetry of radioactive rare earths. Because the book is made up of photoreproductions of the best available copies, there is considerable variation in quality, style, and format.

Since the conference dealt with so many different aspects of the rare earth science and technology, the book affords a valuable source of information, extensively documented for the most part with numerous literature references, in an area which is altogether inadequately covered by any standard reference texts. The editors have considerably enhanced the practical usefulness of this symposium by having appended an author and subject index.

UNIVERSITY OF ROCHESTER
SCHOOL OF MEDICINE AND DENTISTRY LEON L. MILLER
ROCHESTER 20, NEW YORK