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## NEW BOOKS

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**The Chemistry of Acetylene.** By JULIUS A. NIEUWLAND, C.S.C., Late Professor of Organic Chemistry, and RICHARD R. VOGT, Professor of Chemistry, University of Notre Dame. Reinhold Publishing Corp., 330 West Forty-second Street, New York, N. Y., 1945. xi + 219 pp. 15.5 × 23.5 cm. Price, \$4.00.

Seeing Nieuwland's picture in the frontispiece of this book is like greeting an old friend. He was here only yesterday, so it seems. This work, which was started many years before his death in 1936, was completed by Professor Vogt.

This A. C. S. Monograph No. 99 is made up of five chapters dealing with the preparation and physical properties, metallo-derivatives, substitution reactions, addition reactions, and polymerization or condensation reactions of acetylene. Each chapter is subdivided in about ten parts, with a bibliography at the end of each. In this way references are kept reasonably close to the subject matter.

The literature has been ably, but too briefly, summarized. Sections can be selected which are presented with sufficient detail to enable the reader to acquire a feeling for the subject. One might choose in this connection the preparation of sodium acetylides (p. 43), the syntheses of propyne and butyne (p. 76), and the sections by A. S. Carter and H. W. Starkweather on vinylacetylene, chloroprene, and neoprene (pp. 160-180). A sizeable portion of the material presented, however, has been treated non-critically. In discussing the preparation of vinyl esters by interaction of acetylene and carboxylic acids, for example, the authors list many catalysts (pp. 129-131) without any attempt at appraisal. The monograph, while not a laboratory manual, should give enough of the experimental approach to enable the reader to visualize the type of operation under consideration, the rapidity or the slowness of the process, and the yields to be expected. One gets very little of this type of thing from the book itself. Both non-absorption (p. 37) and absorption (p. 146) of acetylene by concentrated sulfuric acid are reported. This inconsistency could have been eliminated by citing pertinent details.

Another abridgment, disappointing to the reviewer but premeditated by the authors, is the incomplete treatment given to the chemistry of substituted acetylenes. It is to be regretted also that the material published during the last seven years had to be omitted, but in the preface it states that "it has not been possible to cover the literature on most topics later than 1938."

Workers in the field of acetylenes will appreciate the well organized bibliography of about 1725 references and the care and thought which have gone into the presentation generally.

CHARLES D. HURD

**General Chemistry.** By JOHN ARREND TIMM, Professor of Chemistry and Director of School of Science, Simmons College. McGraw-Hill Book Company, Inc., New York and London, 1944. xii + 692 pp. 14.5 × 22.5 cm. Price, \$3.75.

A new text in general chemistry should possess some distinctive features to justify its appearance. This has been achieved by Professor Timm by a style of presentation which is both clear and communicative to the student; by the elimination of outmoded material to make room for a more complete theoretical treatment; and by glimpses

of the personalities and contributions of the leaders in science down to the present time.

The text is divided into fifty-five short chapters (12 pages each) including pertinent study questions and many supplementary literature references. Throughout the text many helpful illustrative diagrams are used and numerical problems are solved in detail.

The first twenty-three chapters present in order the elementary conceptions of atoms and molecules, changes in matter, valence, the three states of matter, solutions and the determination of molecular and atomic weights interspersed with the usual descriptive chapters on oxygen, hydrogen, the halogens and compounds of these few elements. Next the periodic table is discussed, and a strong section follows on subatomic particles, atomic structure, the nature of valence, radioactivity, the nucleus, ionization of salts, ionization of acids and protolysis reactions. From then on the text proceeds with the descriptive chemistry of sulfur, nitrogen, phosphorus, carbon, silicon and boron. In the treatment of oxidation and reduction reactions the author uses the valence change method throughout the text, and thus is able to introduce the subject before the theory of ionization is presented. Later, a brief presentation of the ion-electron method is given. The latter part of the book is a somewhat condensed treatment of the metallurgy of the metals, the physical properties of metals and alloys, in four chapters the specific reactions of metallic ions, and is concluded by the short enumeration of a selected number of organic compounds of popular interest.

Thus within a reasonable compass the author has prepared a modern text which can be thoroughly covered in a college year by those students who need a well-rounded course for their later professional studies. The instructor of chemistry majors will undoubtedly supplement the work in the strictly descriptive phases of inorganic chemistry by means of lectures or assignments to a reference book in inorganic chemistry. Likewise, the teacher of a terminal course in general chemistry in the Liberal Arts may wish to omit some theoretical material so that the student may delve into organic chemistry far enough to appreciate the thread of organization of this division of chemistry, as well as the impact of the developments in organic chemistry on industry and life today.

HAROLD A. IDDLES

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## BOOKS RECEIVED

May 10, 1945 to June 10, 1945

L. E. GRINTER, HARRY N. HOLMES, H. C. SPENCER, RUSUS OLDENBURGER, CHARLES HARRIS, R. G. KLOEFFLER AND V. M. FAIRES. "Engineering Preview." The Macmillan Company, New York, N. Y. 581 pp. \$4.50.

ANDREW L. WINTON AND KATE BARBER WINTON. "Analysis of Foods." John Wiley and Sons, Inc., 440 Fourth Avenue, New York, N. Y. 999 pp. \$12.00.

HYMAN LEVY AND E. E. PREIDL. "Elementary Statistics." The Ronald Press Company, New York, N. Y. 184 pp. \$2.25.

F. F. NORD AND C. H. WERKMAN. "Advances in Enzymology." Interscience Publishers, Inc., New York, N. Y. 268 pp. \$5.50.