

## NEW BOOKS

**Report of the American Committee on Electrolysis.** American Institute of Electrical Engineers, 33 West 39th Street, New York, N. Y., 1921. 204 pp. 33 figs. 15 × 24 cm. Price \$1.00.

The American Committee on Electrolysis has just issued its 1921 report, superseding its preliminary report of 1916. This report embodies such statements of facts and descriptions, and discussions of methods of electrolysis testing and electrolysis mitigation as the members of the committee have been able thus far to agree upon unanimously. In the preface, signed by Bion J. Arnold, Chairman of the Committee, the following statement is made:

"While this report supersedes the preliminary report of 1916, it should, unless the principals see fit to discontinue the work of the main committee, be considered as in the nature of a progress report and not as final, as it is impossible at the present time to finally answer many of the outstanding questions involved. Also it is to be understood that the report is confined to the technical and engineering aspects of the subject and does not attempt to deal with matters of policy or with legal questions, such as the rights and responsibilities of the several interests concerned."

The report comprises five chapters. Chapter I sets forth a rather full statement of principles and definitions. Chapter II is devoted to a somewhat detailed discussion of the design, construction, operation, and maintenance of railways and underground structures affected by electrolysis, and to a discussion of questions involving the interconnection of affected structures and railways, ending with a summary of good practice as agreed upon by the committee. Chapter III gives a discussion of the fundamentals of the whole question of electrolysis surveys, their purpose, scope, possibilities, and interpretation, and also a discussion of the instruments suitable for electrolysis testing. Chapter IV is devoted to an analysis of present European practice relating to electrolysis mitigation. In Chapter V the committee outlined certain researches which it deems necessary to have carried out in order to make it possible to reach a final solution of some of the fundamental questions pertaining to electrolysis mitigation.

The American Committee on Electrolysis which prepared this report is a joint committee having three representatives from each of the following organizations.

American Institute of Electrical Engineers  
 American Electric Railway Association  
 American Gas Association  
 American Railway Engineering Association  
 American Telephone and Telegraph Company  
 American Water Works Association  
 National Electric Light Association  
 Natural Gas Association  
 National Bureau of Standards

BURTON McCOLLUM

**A Laboratory Manual of General Chemistry.** By JAMES H. WALTON, Ph. D., Professor of Chemistry, Univ. of Wisconsin, and FRANCIS C. KRAUSKOPF, Ph. D., Associate Professor of Chemistry, Univ. of Wisconsin. The Collegiate Press, George Banta Publishing Co., Menasha, Wis., 1920. v + 172 pp. 7 figures. 16 × 23.5 cm.

This manual includes about one hundred and fifty experiments, and seems especially adapted to the use of a class in which some, but not all, of the students have had a preliminary school course. "A number of time-honored experiments of doubtful value have been left out. In particular, many test-tube experiments which teach isolated facts and furnish information of an encyclopedic nature only have also been omitted." Alternate pages of the manual are blank, and are apparently to be used instead of a notebook for "the (necessarily brief) record of observations, inferences, equations, answers to questions, etc." The book is rather bulky, due to the introduction of these blank pages, and to the inclusion of a detailed outline (39 leaves) of the first semester's work. This is intended to teach the beginning college student how to outline his work, and should serve the purpose admirably. There are also examination questions and problems, appendices on "Units of Measurement," "Charles' Law and Boyle's Law," "Important Elements and Some of Their Physical Properties," and "Activity Series of the Metals," and a classified list of references for outside reading. The usual lists of apparatus, chemicals, and tables of the vapor pressure of water, etc., complete the book.

The experiments are well suited to beginners of college grade, and some of them will also interest freshmen who have had a good high-school course, but a larger proportion of more difficult experiments and preparations on a slightly larger scale would, in the reviewer's opinion, make the book more valuable for the latter class of students. Experiment 98 on osmotic pressure is ingenious, and so is Experiment 20 on velocity of crystallization.

A certain lack of care in expression is noticeable. "To just melt," "to just touch," "to first wash," and similar constructions are of frequent occurrence. There seem to be misprints in the "Caution" on p. 6, and in the heading of Expt. 138.

NORRIS F. HALL

**Zeittafeln zur Geschichte der organischen Chemie** (Chronological Tables of the History of Organic Chemistry). By PROF. DR. EDMUND O. VON LIPPMANN, Dr. Ing. E. H. at the Technische Hochschule, Dresden, Director of the Zuckerraffinerie Halle, Halle a.S. Julius Springer, Berlin, 1921. Paper covers; 67 pages with index 17 × 25 cm. Price 18 Marks in Germany, 54 Marks in America.

The many readers of Prof. Lippmann's essays upon scientific and historical subjects will welcome his new "chronological tables of the history of organic chemistry." This little work developed from the author's growing collection of historical notes, the complete absence of indexes in the recent histories of organic chemistry by Hjelt and by Graebe and

the demand for a convenient source-book of information finally influencing him to attempt its publication.

Prof. Lippmann begins his chronology at the year 1500 with oil of absinthe, first mentioned in Brunschwig's "Distillirbuch" and closes it at the year 1890 with the centric naphthalene formula of Bamberger. Within this compass he mentions over 1400 of the principal subjects pertaining to organic chemistry with the names of discoverers and references. To the scattered land-marks of organic chemistry before the year 1500 a page of the preface is devoted. Necessary restrictions prevented the extension of the tables after 1890. This year, with its synthesis of the sugars and other discoveries, gave such an impetus to organic research that, as Prof. Lippmann remarks, more new compounds were discovered within the next decade than in the entire preceding century. The commencement, at about this date, of abstract journals with their indexes of current literature also rendered a further continuance of the plan unnecessary.

In the selection and arrangement of his chronographic material, Prof. Lippmann has shown good judgment and impartiality. All countries, as he remarks in his introduction, have contributed their part towards erecting the temple of science and with this thought in mind he has attempted, so far as was possible, to give credit where credit was due. The following typical example will indicate his general method and fairness of treatment.

1831. Chloroform und Chloral aus Alkohol und Chlor, Liebig (*Pogg.* **24**, 444; A. 1, 189; die Formeln sind noch unrichtig). Chloroform aus Alkohol und Chlorkalk, Soubeiran (A. ch. II, **48**, 131); Guthrie (*Silliman's Amer. Journ.* **21**, 64 (1832)); Gr. 76.

In addition to dates, compounds and authorities each page of the tables has a convenient set of footnotes that give the etymologies of the different organic chemical terms. Separate indexes of authors and subject matter assist in the work of reference.

A compendium of this character has necessarily certain shortcomings, for no two organic chemists will be found to agree in their choice of selective material. The author with full consciousness of this limitation has very modestly termed his compilation an experiment. The reviewer believes that all chemists who have occasion to consult the chronological tables of Prof. Lippmann will vote the experiment a decided success. In addition to its value as a reference booklet the work gives a general perspective of the historic development of organic chemistry such as no other volume of its size can offer.