

which are used as reagents. In following this manual, therefore, the student will become familiar with many of the medicaments which he will later prescribe or dispense. The directions, cautions and descriptions of laboratory technic are intended for beginners and elementary students. They are very complete and in general are not too prolix or imperative for beginners. While intended for students of organic chemistry its technic will prove of value to any novice in general chemistry. In other respects this manual does not differ materially from the numerous books already in the field.—L. E. WARREN.

Textbook of Organic Chemistry, pages 901 VI. By J. S. CHAMBERLAIN, Ph.D. Second Edition, 1928, Professor of Organic Chemistry, Mass. Agricultural College. P. Blakiston's Son & Co., Philadelphia. Price, \$4.00.

The necessity of a second edition of Professor Chamberlain's book justly indicates the appreciation accorded to the original work. Despite the fact that the volume consists of almost a thousand pages, the greater part of the subject matter is but superficially treated which circumstance is, however, compensated for by the multitude of diversified but relevant data included. This is justified to a limited degree by the author's intention—as stated in the Preface—to produce a work that would at the same time serve as a source text for instructors.

Correlation of certain theoretical principles with modern industrial practice has in most cases received but scant treatment thereby decreasing the value of the book as a reference for the advanced student and professional chemist.

Brief historical and statistical data pertaining to production and consumption are included in many of the topics treated, among which may be noted some of the most recent and contemporary developments in Organic Chemistry, e. g., *Cracking Processes*, *Synthetic Motor Fuels*, *Anti-Knock Preparations*, etc., as mentioned under Petroleum. A typographical error appears in a footnote on page 159, name for name.

Heroin (diacetyl-morphine), being practically obsolete from a medical standpoint, is treated under the excellent chapter on Alkaloids, but legal prohibition of the particular alkaloid is not mentioned. Glycerin (page 198) is described as being non-irritant, which statement should be properly qualified; on page 590, Phenacetin is described as an "important antiseptic"

which is not the case. Under Phenol, page 572, the only antidotes specified are lime and chalk, alcohol not being mentioned, despite its efficacy as previously recommended through the researches of Phelps, Fraser and others, as attested to in works on therapeutics.

On page 811 we note the therapeutic comparison of Morphine with Codeine, but the student is not apprised of the fact that the latter alkaloid is not habit-forming.

The two major divisions of the book, namely the "Aliphatic Series" and the "Cyclic Compounds," occupy pages 1-423 and pages 427-829, respectively, each chapter being terminated by a list of study questions and problems; the text proper is concluded by an excellent bibliography listing 75 standard works dealing with Organic Chemistry and its applications.

Appendices I and II occupy pages 849-870 of which the first part consists of descriptions of manipulative technic under the head "Separation, Purification, Identification, Analysis and Determination of Molecular Weights of Organic Compounds." This portion of the book could be considerably enhanced by the inclusion of half-tones or cuts of apparatus as under the topics, "Melting Point and Boiling Point Determinations," "Nitrogen by Kjeldahl," "Carbon and Hydrogen by Combustion," etc.

On page 835 the necessity of correction factors is stressed as applied to melting point and boiling point determinations, but formulas or directions are not given; on page 839 the author states that the "Kjeldahl method has great advantages as to time required," which opinion takes no cognizance of the hours lost in the course of digestion preliminary to the final titration of N as NH_3 .

Appendix II is devoted to 432 bibliographic references to laboratory preparations designated by number throughout the text. Analytical tests described under "Oils and Fats," "Sugars," etc., might, with advantage, be incorporated with Appendix I and a more adequate description of polariscopic methods would be appropriate. The index consists of 30 pages and could be better arranged if divided into two parts, Authors and Subjects.

The volume as a whole is an excellent work, and its wealth of readily accessible material justifies its selection as a text as well as a convenient reference for the chemist.

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