

The properties of the resultant fat or oil are outlined, its uses given, and the adulterants frequently found pointed out.

The various processes of manufacturing the fat products in most common use, are described at length, full details being given of the different stages through which the raw material is taken before the final product is reached. Some thirty pages are devoted to the subject of butter, describing the machinery used in its manufacture, its characteristic properties, and the numerous tests for purity. The manufacture of bone fat, lard, tallow, fish oils, *degrás*, and wool fat is also fully considered, while numerous other fats and oils but little used are taken up with less detail.

The last pages of the book are devoted to briefly describing the methods used in the examination of fats and oils to determine their purity. The space given to this part of the work is too brief to make it of value to the analyst.

The book is printed on heavy paper with clear type and excellent illustrations. A full table of contents, list of illustrations, and complete index makes it a very satisfactory book for persons interested either theoretically or practically in this subject.

O. S. DOOLITTLE.

QUANTITATIVE CHEMICAL ANALYSIS BY ELECTROLYSIS. By DR. ALEXANDER CLASSEN in Cooperation with DR. WALER LÖB, authorized translation by WILLIAM HALE HERRICK, A.M., and BERTRAM B. BOLTWOOD, PH.D. New York: John Wiley & Sons. xii + 301 pp. Price, \$3.00.

Starting with the dawn of the present century, the science of analysis by electrolysis has made wonderful progress, and within the last twenty years the cumulative data have reached large proportions. The simplicity, cleanliness, and beauty of most of the electrolytic separations, particularly among metals of the sulphide group, have made the subject an especially attractive study to many workers. Among the most indefatigable and revered of these upon the continent, is the chief author of the present work, the sum of whose contributions would make a book in themselves. To the student not familiar with or practiced in electrolytic reactions, this text-book will prove of great assistance, as especial pains have been taken to describe and explain those necessary details that are so often neglected. In

the first or general part of the book, theory alone is considered, the ionic theory of electrolytic dissociation is clearly and concisely given, and the laws governing it are discussed. In the section following are described the various forms of apparatus for the measurement of current magnitudes and tension. The section on current sources is very complete, the best forms of primary and secondary elements being considered in detail, as well as numerous physical methods of producing the current. The section on accumulators is excellent, and the general rules for handling them precise. Numerous examples and tables of experiments are given, to illustrate the working of the apparatus described. The process of analysis under varying conditions is considered in full, and detailed descriptions of special forms of apparatus and the arrangements thereof are outlined. While the simpler arrangements are not slighted, more attention is given to a full description of the equipment of the Electrochemical Institute at Aachen, under the direction of the author. The second general division of the book is devoted to the quantitative determination of the metals, and herein lies the value of the work to the analyst. No criticism of the manner of detailing the various methods can be made, since all the weak as well as the strong points are carefully considered, and the directions are not involved. Full references to all the literature to date are given. Following this the work ends with an appendix of seventy pages containing schematic outlines of some applied examples of electrochemical analysis. Methods for the analysis of brass, bronzes, alloys of different compositions, iron ores, mattes, etc., are given. The work has two indexes, one of authors and one of subjects, and both are complete. The translators have done their work well, and throughout the work make frequent notations from their own experience. The illustrations are all of a high class. As a whole the work is commended either as a text-book or reference book.

W. WALLEY DAVIS.

A MANUAL OF QUANTITATIVE CHEMICAL ANALYSIS. BY E. F. LADD, B.S. New York: John Wiley & Sons. vi + 82 pp. Price \$1.00.

"This little manual is intended for the use of beginners in quantitative analysis * * * ."—*Preface*. For this reason the methods given should be correct if not elaborate. An ex-