

procedure such as precipitation, filtration, etc., and a discussion of that part of the theory of solutions relating to analytical operations; Part I, which deals with the systematic procedure for the detection of the metals, including a table of reactions of the various metals and acids with the usual reagents; Part II, which deals with the systematic analysis for the metals and the procedure for the analysis and detection of the acids; a special part which treats briefly of the qualitative analysis of water, iron, and gold and silver ores.

In regard to the introductory chapter it has been the experience of the reviewer that the theory of solutions relating to analytical chemistry cannot be properly taught by means of a chapter of this nature. It would seem to be much preferable to introduce the subject as the author has done, and then to present throughout the text examples *apropos* to the subject in hand, thus impressing upon the student's mind the applications and the significance of the theory. As it stands at present the student will be entirely absorbed by the "finding" of some particular element, and not upon the conditions by which this may be best accomplished.

Parts I and II are arranged practically according to the method originally adopted by Fresenius, which involves the use of numerous cross references and on this account is more or less confusing and is not so convenient as the direct statement of procedure. A noticeable omission is that of the Marsh test for arsenic which appears only in one of the tables of reactions and thus the enormous importance of this test is not emphasized. The method for the separation of calcium, barium, and strontium, while entirely satisfactory, is not so delicate as the ether alcohol method which has been shown to be very accurate.

The generally satisfactory nature of the book is indicated by the fact that it has already passed through four editions.

HENRY FAY.

THE LABORATORY COMPANION TO FATS AND OILS INDUSTRIES. BY DR. J. LEWKOWITSCH, M.A., F.I.C. London: Macmillan and Co. 1901. xi + 147 pp. Price, six shillings.

With the exception of five pages of introductory matter this volume consists of tables. For methods of work and for full explanation of the tables, one must refer to the author's "Chemical Analysis of Oils, Fats, and Waxes," second edition, 1898.

The work is divided into three parts, dealing with: 1. System and Examination of Fats and Waxes; 2. Fats, Oils, and Waxes, and the Commercial Products Derived Therefrom; and 3. General Tables. Part 2 includes the greater part of the work and is divided into two parts, A, containing the constants and variables of the oils and waxes, and B, dealing, in eight sections, with the commercial products of the fats and oils industry.

While these tables follow, in a general way, the lines laid down in the author's "Chemical Analysis," one finds on examination much additional matter in the tables, such as the constants of varnish gums and the detailed information regarding commercial driers.

The author has brought together a great mass of facts and has arranged them in an attractive and convenient form. The book is well indexed and deserves a place both in the technical reference library and in the working laboratory. H. A. HUSTON.

BOOKS RECEIVED.

Lectures on the History of the Development of Chemistry from the Time of Lavoisier. By A. Ladenburg. Translated from the Second German Edition by Leonard Dobbin, Ph.D. (With additions and corrections by the author.) Edinburgh: Published by the Alembic Club. Edinburgh Agent: Wm. F. Clay; London Agents: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1900. xvi + 373 pp.

The Elements of Qualitative Analysis. By Wm. A. Noyes, Ph.D. Fifth Edition, Revised. New York: Henry Holt & Co. 1901. 101 pp. Price, 80 cents.

Studies in Bread and Bread-Making at the University of Minnesota in 1899 and 1900. By Harry Snyder. Washington: Government Printing Office. 1901. 65 pp.

Reclamation of Salt Marsh Lands. Circular No. 8, U. S. Department of Agriculture, Division of Soils, Washington, D. C. 10 pp.

A Manual of Volumetric Analysis. Treating on the Subjects of Indicators, Test-Papers, Alkalimetry, Acidimetry, Analysis by Oxidation and Reduction, Iodometry, Assay Processes for Drugs with the Titrimetric Estimation of Alkaloids, Estimation of Phenol, Sugar, Tables of Atomic and Molecular Weights. By Virgil Coblenz, Ph.D., Pharm.M., F.C.S. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1901. 181 pp. Price, \$1.25.

The Practical Methods of Organic Chemistry. By Ludwig Gattermann. Translated by William B. Schober. Authorized Translation. The Second American from the Fourth German Edition. With numerous illustrations. New York: The Macmillan Co. 1901. xiv + 360 pp.