on the basis of the equilibrium laws. A modern comprehension of the behavior of organic acids and their derivatives, the esters, amides, nitriles, etc., it seems to the writer again, is altogether impossible without a preliminary knowledge of the behavior of aldehydes, ketones and olefines, unsaturated bodies whose absorption products are so far more stable than the absorption products of the derivatives of the organic acids, which nevertheless must play an important rôle in the proper theoretical treatment of their reactions. Yet we find in Holleman's text the order of treatment exactly reversed, the acids with their most complex behavior first, the olefines with their well-defined simple properties treated only after such complex unsaturated bodies as the nitriles, isonitriles, acids and their derivatives, aldehydes and ketones. There is room, it is believed, for a text-book on organic chemistry in which the reactions are treated on the basis of our equilibrium laws in a very simple and elementary but efficient way with the aid, not of hypotheses, but of well-known simple facts.

JULIUS STIEGLITZ.

THE UNIVERSITY OF CHICAGO,
Nov. 16, 1907.

POISONS, THEIR EFFECTS AND DETECTION. By A. WYNTER BLYTH AND M. W. BLYTH. London: Charles Griffin & Co., 4th Ed. 1906. 8vo. xxxii + 772 pp. Van Nostrand Company. Price, $7.50 net.

The announcement by the publishers of a forthcoming new edition of this standard work aroused great interest among analysts and toxicologists, and they awaited the appearance of the work with the curiosity natural to the interval of ten years between editions. The fact that Blyth's poisons is the only comprehensive work of its kind in the English language should make a new edition doubly valuable.

The fourth edition carries an additional name upon its title-page—that of Meredith Wynter Blyth, Public Analyst for the Boroughs of Brighton and Eastbourne. This would lead one to conclude that the presence of poisonous substances in food products and the relations of such materials to the public health would receive more attention than was accorded them in the third edition. In this, however, we suffer a very great disappointment, for this phase of the field of the toxicologist and investigator is practically ignored, there being essentially no change in the subject-matter treated, the additions and alterations being mainly in the arrangement and elaboration of contents of the old edition. However, these changes in the manner of presentation and the addition of newer and better methods of chemical analysis are sufficiently numerous and extensive to justify the claim of the publishers that the fourth edition is "thoroughly revised, enlarged, and rewritten."

The work is divided into nine "parts" as follows: I. Introductory, the old Poison-Lore, the Growth and Development of the Modern Methods

of Chemically Detecting Poisons; Bibliography. II. Definition of Poison; Classification of Poisons, Statistics, Connection between Toxic Action and Chemical Composition; Life Tests; General Methods in Searching for Poison; the Spectroscope as an Aid; Examination of Blood Stains. III. Poisonous Gases. IV. Acids and Alkalies. V. Substances Capable of being Separated by Distillation. VI. Alkaloids and Poisonous Vegetable Principles. VII. Poisons derived from Living or Dead Animal Substances. VIII. Oxalic Acid Group. IX. Inorganic poisons.

Appendix—Treatment of Cases of Poisoning. Domestic Ready Remedies for Poisons.

Parts I and II are thus devoted to the discussion of what may be called General Toxicology, the remaining parts to Special Toxicology.

Part I has been much improved, both by the addition of new material and the suppression of doubtful facts; thus revised, the chapters are more readable. Following Part I is to be found a bibliography of the chief works on toxicology, which unfortunately has neither been revised nor brought down to date, only a single addition—Vibert's Précis de Toxicologie—has been made to the works listed ten years ago.

Part II has had much new matter added to it. The arrangement of the classification of poisons has been changed by a more logical combination of doubtful substances under a single group—Vegetable Principles Not Readily Admitting of Classification—and in this group have been placed Tutin, Illicium Religiosum, Picric Acid and Picrates, Ictrogen, Lathyrus Sativus and Arum Poison, toxic substances not treated in the third edition. A further addition is found under poisons derived from animal substances in a sub-group—Mammalian Poison; Epinephrine. The statistics—Deaths from Poisons in England and Wales—are now for the period 1893–1903, the older statistics being suppressed.

The discussion of the relation between chemical composition, chemical properties and toxic effect has been extended and is an excellent summary of the facts now known, save for the omission of all mention of the contributions of physical chemistry to our knowledge of how toxic substances act upon living cells. There are also many other portions of the work where the introduction of physico-chemical methods and theories is greatly to be desired.

The chapter on Blood and Blood Stains has been entirely rewritten and Formanek's excellent charts of the absorption spectra of blood pigments have been reproduced, so that the analyst is now given reliable data and guidance to enable him to undertake an examination of suspected material with a fair prospect of success.

As might be expected, the authors have made the greatest changes in the specialized portions of their book. Improved methods of separation, identification and determination are to be met with in the case of almost

every poisonous substance discussed. The chapters devoted to the vegetable alkaloids are completely rewritten and greatly elaborated by the introduction of the latest knowledge relating to the chemistry of these substances. An exceedingly valuable feature is the introduction of structural formulas and an indication of the relationships of allied compounds. In the third edition the chapters devoted to the compounds of carbon were, on the whole, the most unsatisfactory portions of the book, but the authors have succeeded in the fourth edition in well rounding out their work. The analytical methods are now well chosen, both on account of their convenience and reliability.

Considering the number of very rare and utterly unimportant poisons of organic origin treated it is to be regretted that many common poisons have been omitted; most prominent among these may be mentioned formaldehyde, methyl alcohol, and acetanilide and other dangerous heart depressants.

The general make-up and typography of the work is excellent, there being remarkably few typographical errors; the only serious one noted by the reviewer is the formula—$NiCO_4$—ascribed to nickel carbonyl.

Providing the analyst does not regard the work as authoritative on chemical properties and industrial processes, he will find it a safe guide for the detection of toxic substances and a source of valuable information relative to physiological effects. Blyth's poisons should be in the library of every analytical chemist. E. M. CHAMOT.

RECENT PUBLICATIONS.

BILTZ, H. AND W. UEBUNGSBEISPIELE AUS DER UNORGANISCHEN EXPERIMENTALCHEMIE. Leipzig: 1907. M. 7.

BREUER, C. KITTE UND KLEBSTOFFE. Geschichtliche und technische Ausführungen. Hannover: 1907. 268 ss. M. 3,40.

BROWNLEE, R. B., FULLER, R. W. AND OTHERS. FIRST PRINCIPLES OF CHEMISTRY. Boston: Allyn & Bacon. 1907. 419 p. $1.25.

COHEN, JULIUS B. ORGANIC CHEMISTRY FOR ADVANCED STUDENTS. London, Eng : Edward Arnold. 1907. 632 p. 21s.

DUNCAN, ROB. KENNEDY. CHEMISTRY OF COMMERCE. New York: Harper & Bros. 1907. $2.00.

JONES, HARRY CLARY, AND OTHERS. CONDUCTIVITY AND VISCOSITY IN MIXED SOLVENTS. Washington, D. C.: Carnegie Institution of Washington. 1907. 235 p. $2.00.

JONES, HARRY CLARY. THE ELEMENTS OF PHYSICAL CHEMISTRY. 3rd ed., revised and enlarged. New York: The Macmillan Co. 1907. 650 p. 8 vo. $4.00.

HANAUSEK, T. F. THE MICROSCOPY OF TECHNICAL PRODUCTS. Revised by the author and translated by Andrew L. Winton and Kate G. Barber. New York: John Wiley & Sons. 1907. 8 vo. 471 p. $5.00.

HAZEN, ALLEN. CLEAN WATER AND HOW TO GET IT. New York: John Wiley & Sons. 1907. 12 mo. 178 p. $1.50.

KNAUTHE, K.: DAS SUSSWASSER. Chemische, biologische und bakteriologische