

bers, measurements of electromotive force, velocity of chemical reaction in homogeneous systems, thermochemistry, determination of solubility, determination of transition points. In each chapter the general fundamental principles underlying the experimental work are first given, after which a few typical experiments are described in sufficient detail to enable the student to perform them in the laboratory. The general order and manner of arrangement remind one greatly of the manual of Ostwald and Luther. The latter work is, of course, more complete and comprehensive and contains references to original articles, which are entirely omitted in the present volume. Yet Dr. Findlay's book possesses the decided advantage of presenting detailed descriptions of individual experiments to be performed by the student. It is intended that the order of these experiments as well as their number may be changed, if this should be found desirable. Relatively, an unduly large amount of space is given to the description of physical apparatus and methods of physical measurement, and not enough stress is laid upon a larger variety of well chosen experiments in which these modes of measurement are employed in the practical solution of chemical problems. This criticism, however, applies even somewhat more strongly to all other physico-chemical laboratory manuals hitherto published; they are books describing physico-chemical measurements rather than works on practical physical chemistry.

The book will prove very useful to English speaking students who intend to take a short laboratory course in physico-chemical measurements, while for those who wish to devote more time to the subject it may well serve as an introductory manual. LOUIS KAHLBERG.

TOXINS AND VENOMS AND THEIR ANTIBODIES. By EM. POZZI-ESCOT. Authorized translation by ALFRED I. COHEN, Phar. D. 12mo, VII + 101 pages. Cloth, \$1.00 net. Published by John Wiley & Sons, New York and London, 1906.

This booklet contains brief, yet clear, accounts of various toxic principles, either secreted through physiological or pathological functions of animal or vegetable cells, or produced during decomposition of these cells. Though concise, it seldom omits any of the important toxins, and under each head the origin, preparation and physiological action are well defined. Neither does it overlook the recent theories and polemics on immunity, nor their practical bearing. One may, however, be struck with one fact, namely, that the work of Anglo-Saxon as well as Teutonic scholars has not been fully credited, in contradistinction to that of their Latin colleagues. It is also to be regretted that the more recent progress made in the domain of snake venom and mushroom poisons was not incorporated in this book. In general, the book is greatly to be congratulated upon the attainment of its primary object, that it should be a companion to those who cannot afford to spend much time in following

the rapid growth of the literature, and yet desire to familiarize themselves with the facts brought out by scientific investigation.

HIDEYO NOGUCHI.

BOILER WATERS. BY WILLIAM WALLACE CHRISTIE. D. Van Nostrand Company. pp. 235. Price \$3.00.

The appearance of the book is excellent, the type being clear, the lines well spaced, and the illustrations both numerous and well selected. The subject-matter is set forth in ten chapters:—The properties of water; boiler scale; corrosion; feed-water pipes; priming and foaming; oil and grease; hardness; feed-water heaters; water softening and miscellaneous tables.

The chapters on feed-water heaters and on water softening are particularly good. Especial stress is laid upon the point that it is poor economy to use a boiler as a water purifier, the purification being better done elsewhere. The data are plentiful, are often tabulated, and are well chosen.

The book will be found decidedly useful, but it would have been greatly improved had its chemical portions been omitted.

The tests given for water examination are crude, and are very likely to mislead. The table of analyses of sundry waters, beginning on page 33, loses its value by reason of the reader not being informed of how the waters in question acted when used in boilers.

W. P. MASON.

HANDBUCH DER GESAMMTEN THONWAARENINDUSTRIE. BRUNO KERL. 3TE. AUFLAGE. BEARBEITET VON EDUARD CRAMER UND DR. HERMANN HECHT. FRIEDRICH VIEWEG UND SOHN, BRAUNSCHWEIG. 1907. s.s 1588. ABBILD. 518. Price M 48.50.

This book bears the imprint of being the third edition of the work of Bruno Kerl, which appeared in a second edition as long ago as 1879, but the author died in 1905 and Messrs. Cramer and Hecht have entirely rewritten it at the present time, increasing its bulk from 733 to 1,551 pages with the introduction of much new matter which was essential for a proper description of the advances in the ceramic industries in the last twenty-five years. It may be regarded, therefore, as essentially a new work and as such is most complete and encyclopaedic in character. It is, in fact, the third volume of the second group of Bolley-Engler's new Handbuch der chemischen Technologie which is being published by Vieweg und Sohn of Braunschweig, the other volumes of which have either received a flattering reception or are looked forward to with pleasure.

In the preface the authors state that they have been engaged in the work of preparing the manuscript for a period of ten years, which is not surprising, considering the amount of material that they have gathered together. With them several well-known authorities have collaborated such as Herr Bartel, Dr. Th. Ludwig and Dr. M. Fiebelkorn, as well as