

quite complete. It contains many features of interest, particularly to those who are desirous of securing essentials. Details are largely omitted. There are some statements which might be improved upon; for example, under alkaloids it is stated that if on heating a substance on platinum foil, it burns away with a smoky flame and an odor of singed hair, the substance is probably an alkaloid.

Under phenacetine it is also stated that this chemical can be distinguished from acetanilide by the isonitrile test. This has long been shown to be an error.

Some of the cuts are extremely poor, particularly the microscopic plates in connection with urinary analysis. The assaying of drugs is largely based upon the methods contained in the latest revision of the United States Pharmacopoeia.

Notwithstanding a few shortcomings, the book presents in admirable form much useful information in a handy, inexpensive volume.

L. F. KEBLER.

A HISTORY OF CHEMISTRY FROM EARLIEST TIMES TO THE PRESENT DAY, BY ERNST VON MEYER, PH.D. TRANSLATED BY GEORGE MCGOWAN, PH.D. THE MACMILLAN COMPANY, NEW YORK. Price \$4.25.

Three editions of the German original of this work have appeared, dated in 1888, 1894 and 1904. Each of these has been translated by Dr. McGowan, who was a former pupil of the author. Each translation contains alterations and additions made with the sanction of the author, who has also revised the English proof sheets.

The third English edition contains XXVII + 691 pages. About a fourth part is given to the chapters on the progress of chemistry before the age of alchemy, during that age, during the iatro-chemical period, and during the reign of the phlogiston theory. Half the remaining three-quarters is given to the history of chemical theory since the time of Lavoisier, and half to the history of experimental research. There are two indexes, and the table of contents is of especial excellence.

Von Meyer's history of chemistry is marked by breadth of view, insight, fairness, good judgment, and by the possession of the historic sense and of the sense of proportion. There are excellent monographs and essays, and histories of a single branch of chemistry easily to be procured by the student; but von Meyer's history of chemistry as a connected whole has attained a position which is commanding and authoritative. It is worthy of all commendation, but needs none.

The translation is good, very good indeed. A careful reading of the first eighth part of the book detected only two errors affecting the sense; on page 28, the date of writing the Leyden papyrus is made the date of finding it; on page 17 it is said that Dioscorides at first used a certain

name, whereas it is meant that he was the first to use it, and not that he at first used it and afterwards abandoned it.

The translation is accurate even to the point of being somewhat too literal. Some proper names are given in the German spelling; for Silesia and Olympiodoros we read Schlesien and Olympiodor. Some technical terms are simply transliterated; we read of "magnet stone" and "iron saffron." Such simple cases as these it is perhaps hypercriticism to mention. But when we read that "any intelligent grouping of these facts was deemed useless" by the school of Gmelin, or that certain extravagant speculations were received "on the ground of Aristotle's weighty testimony" (rather than on the ground of his authority) we feel that literalism has its limitations.

Imperfections of this sort are, however, not obtrusive, for Dr. McGowan's revision is careful about accuracy and verbal felicity; witness that the phrase "the energetic Phenicians" of the second edition has now become "the enterprising Phenicians."

To chemists and others interested in the story of an important phase of the intellectual progress of the race, as well as to junior students of the science, Dr. McGowan's work may be heartily commended. It is a translation of so high an order, whose excellence is so sustained and continuous, that it is as pleasant reading as is the original.

The type is large and clear and the paper and presswork are good.

EDWARD W. MORLEY.

A HISTORY OF CHEMISTRY BY F. P. ARMITAGE. LONGMANS, GREEN, AND CO. 1906.

The XX + 266 pages of this book contain a readable account of the progress of chemistry from the earliest times. Nineteen pages bring the story to the time of Boyle, and twenty-seven more, to the time of Lavoisier. Then seventy-four pages are given to inorganic chemistry and the atomic theory, and 110 to organic chemistry. The concluding twenty-two pages are entitled "Inter-relationship of atomic weights, Cannizzaro's reform, and the periodic law."

The work is to be much commended as being a well balanced and systematic short history of chemistry, written in English, and not too large to be mastered by a good number of junior students. It is a welcome addition to the several histories and historical essays in which English-speaking chemists have depicted the progress of chemistry or of some particular section of chemistry.

Few positive errors have been detected in the course of a somewhat careful examination of the earlier pages of the book. The writings of Geber are ascribed to the eighth century, rather than to the time of the pseudo-Geber, in the fourteenth century. Cavendish is said to have adopted the eudiometric method of Priestly, instead of that of Volta.