

primary text, this work appears to the present writer to be a very valuable contribution. The consolidation of the aliphatic and aromatic divisions is an experiment in the literature well deserving to be made, and we owe thanks to the author.

The tabulation of derivatives is such as to be suggestive to the teacher and convenient for the learner. Much of it is unique, as that of aldehydes and ketones at page 170. At the close of each chapter is a list of the related laboratory exercises. The introductory chapters upon purification, analysis, and molecular weights, and upon the various physical determinations are excellent.

A. B. PRESCOTT.

NOTES ON METALLURGICAL ANALYSIS. BY NATHANIEL WRIGHT LORD, E.M. Second edition rewritten and greatly enlarged. Metallurgical Laboratory, Ohio State University, Columbus, Ohio. Price, \$2.50.

The first edition of this work was written for the use of the students in the Ohio State University, and the second edition has been enlarged to a manual covering the greater part of the methods in use in steel works laboratories. Besides the analysis of iron and steel, it contains a chapter on sampling and short descriptions of methods for the assay of copper and zinc ores.

The descriptions of the methods chosen are, as a rule, clear and in sufficient detail, and references are given in many instances to the original papers, which will prove valuable where reference libraries are within reach.

There is no index and as the running head-lines consist of the title of the book, reference to the subject-matter is difficult. There are comparatively few illustrations, and the appearance of the book is poor and lacking in finish.

ANDREW A. BLAIR.

QUANTITATIVE CHEMICAL ANALYSIS BY ELECTROLYSIS. BY PROF. ALEXANDER CLASSEN, PH.D., Privy Councillor, Director of the Laboratory of Electrochemistry and Inorganic Chemistry in the Royal Institute of Technology at Aachen. Authorized translation, fourth English from the fourth German edition, revised and enlarged, by BERTRAM B. BOLTWOOD, Ph.D., formerly Instructor in Physical and Analytical Chemistry in the Sheffield Scientific School of Yale University. New York: John Wiley and Sons. 1903. 8vo. vii + 315 pp. 102 illustrations. Price, \$3.00.

The name of Professor Classen is so indissolubly connected with the development of electrochemical analysis, and the earlier editions of this book are so favorably known that the present one

is sure of a warm welcome, the more so as it is not merely a translation but a thorough revision which places at the command of English readers the more important results which appeared in Classen's *Ausgewählte Methoden der Analytischen Chemie* (1902), as well as in recent publications by other authors.

The first part, comprising half the book, is devoted to the presentation of the theory and to a description of apparatus and laboratory arrangements. The treatment of the theory is brief (54 pp.), goes directly to the point and is as clear as so condensed a statement can be made. The necessary apparatus is very fully and completely described with the aid of a liberal number of illustrations. The description of the electrical installation of the laboratory at Aix contains many suggestions likely to prove of interest and value to those concerned in introducing new equipment for similar laboratories in this country.

The second part of the book treats of the determination and separation of the metals and halogens. In connection with each topic, references to the literature are given, which, while by no means exhaustive, are sufficiently full for practical purposes. A series of examples are brought together showing the mode of applying electrochemical methods to the analysis of a considerable number of alloys, copper ores, cinnabar, molybdenite, etc.

The labor of the translator is excellently well done, no trace of the German original appearing in the style. A slip, which may be a mere printer's error, occurs in the foot-note on page 281, where "the practical value *in* these examples" is referred to, the author doubtless intending to say *of*. Another typographical error, of which there are not many, is to be found on page 4, where the name of J. B. Hannay is printed *Haunay*. A full index, separated after the German fashion into authors and subject, concludes the book, which is one that can not well be dispensed with in any analytical laboratory.

LAUNCELOT W. ANDREWS.

PHYSICAL CHEMISTRY FOR PHYSICIANS AND BIOLOGISTS. BY DR. ERNST COHEN, Professor of General and Inorganic Chemistry in the University of Utrecht. Authorized translation from the German by MARTIN H. FISCHER, M.D., Instructor on Physiology in the University of California. New York: Henry Holt & Co. 1903. 343 pp.

The book consists essentially of seventeen lectures delivered by Professor Cohen in Amsterdam before a gathering of physicians. The original German edition appeared in 1901 from the press of