

kept record of all these tests is sure to soon make it possible to always turn out a uniform product—the great desideratum in all chemical industries. The laboratory method of testing, and analysis of materials for, and products of this industry are so simple that they need not be mentioned to an assembly of chemists.

COLUMBIAN UNIVERSITY, February, 1895.

NEW BOOKS.

ELEMENTS OF QUALITATIVE AND QUANTITATIVE CHEMICAL ANALYSIS. By G. C. Caldwell, B.S., Ph.D. Third Edition, Revised and Enlarged. pp. 187. Philadelphia: P. Blakiston, Son & Co. Price, \$1.50.

Dr. Caldwell has made several changes in this third edition which increases the value of a book which already had much to recommend it, as the writer can testify, having used it in the laboratory for two years. Nitroso β -naphthol is added as an additional test for nickel and cobalt. It would seem as though more tests might be added for the basigens, with advantage to the student. On page 15, the equation for the oxidation of oxalic acid by potassium permanganate is not correct in this, as it was not in the former edition. The marks \sim , \smile , to indicate respectively "precipitate" and "gaseous product," so far as we know entirely original with the author, are great aids to the instructor in the class-room drills. The discussions in Part I on the processes of analytical chemistry are particularly valuable, while the preliminary discussions preceding the schemes, on "the chemistry of the work" are an excellent feature. Lawrence Smith's method for alkalies is added in this edition. While the portion devoted to quantitative analysis is necessarily abbreviated in a work of this character, sufficient space is given to allow students of limited time to get a very good general knowledge of the methods employed. But we would like to have seen the determination of potash added to those of phosphorus pentoxide and nitrogen, for those interested in agricultural analysis.

ALBERT H. WELLES.

ELEMENTARY QUALITATIVE CHEMICAL ANALYSIS. BY FRANK CLOWES, D. SC. LOND., AND J. BERNARD COLEMAN. pp. 180. Philadelphia: P. Blakiston, Son & Co. Price \$1.00.

The reviewer fails to discover any important improvements in the arrangement or matter in this book upon others of the same