

NEW BOOKS.

A Course in Qualitative Chemical Analysis of Inorganic Substances, with Explanatory Notes. By OLIN FREEMAN TOWER, PH.D., Hurlbut Professor of Chemistry in Adelbert College of Western Reserve University. Philadelphia: 1909. P. Blakiston's Sons and Co. pp. xi + 83. Price, \$1.00 net.

The volume is designed to "appeal to those teachers who wish a concise treatise along modern lines, which will encourage the student not only to carry out accurately the mechanical processes of qualitative analysis, but also to apply some of the principles of modern chemistry in his practical work." To this end, an introduction including the more important applications of the ionic hypothesis to the phenomena of solution, precipitation, hydrolysis and solution tension, precedes the directions for analysis. The plan adopted for the presentation of the latter is essentially that of A. A. Noyes, in which the explanatory notes follow the working directions, allowing the latter to be easily understood. The methods selected are standard ones, and include some recently proposed, as that of Noyes and Bray for the separation of antimony from tin. Alternative methods for the separation of the iron-zinc group are included, and procedures for the detection of the acid radicals, for "dry tests," and the preparation of solutions for analysis are carefully worked out. The appendix contains tables of strength of reagents in grams and in relation to a normal solution, directions for the preparation of certain reagents, and a table showing the percentage dissociation of a variety of electrolytes.

The book is one which will commend itself heartily to thoughtful teachers, and, while its best features have plainly been modeled after existing publications, they have been combined to form one of the most useful manuals recently published.

The book is marred by the full page of errata which confront the reader at the start, and reading is made difficult by the use of almost invisible dots to indicate the charges upon the cations throughout the book.

H. P. TALBOT.

The Theory of Valency. By J. N. FRIEND. London and New York: Longmans, Green & Co. xiv + 180 pp. Price, \$1.60 net.

This volume belongs to the series of Text-books of Physical Chemistry, edited by Sir William Ramsay. It opens with two chapters on the history of valency. A chapter on the theory of valency and two chapters on valency and the periodic law follow. After two chapters on the valency of carbon, there are ten chapters on the valencies of the elements. The book closes with three chapters on Werner's theory, on the electrochemical theories of Davy, J. J. Thompson, Abegg, Ramsay, and Friend, and on Pope and Barlow's theory.

The opening and closing chapters on the history and the various theories