Dr. Delbruck intimates that the most important development is that "our investigations have given a new interpretation to the views developed by Buchner, that in the life of yeast we must differentiate *protoplasm*—the seat of life—and *enzyme*—the working constituent (Arbeitstoffe)—of the organism. Their prosecution has now developed facts which will be of importance to the fermentation industries and particularly to physiology. The theme is the struggle of the enzyme in the yeast cell."

The book has a value therefore beyond the boundaries of the industries named and while it should be found in the working libraries of all progressive technologists it will be found useful as a source of valuable suggestion to biologists and physiologists in their work. W. McMURTRIE.

A LABORATORY MANUAL OF PHYSICS FOR USE IN HIGH SCHOOLS. By HENRY CREW, PH.D. AND ROBERT A. TATNALL. New York: The Macmillan Company. 1902. xii + 234 pp. Price, 90 cents, *net*.

The authors have certainly succeeded in producing a very commendable book. The experiments have been carefully selected with a view "to illustrate the first principles of physics as simply as possible," and the directions for their performance are so clear and to the point that much teaching energy is saved. Several new experiments are given as substitutes for the classical ones or to illustrate points hitherto somewhat neglected in elementary physics. The number of experiments is sufficient to admit of some latitude of choice, and by means of references the work in the laboratory is brought into close correlation with seven of the best text-books on elementary physics. There are three appendixes, the first being an interesting reprint from a paper by Robert Boyle on "A New Essay Instrument, etc.", published in 1675, the second giving advice as to the selection of a galvanometer, and the third containing various physical constants. C. E. LINEBARGER.

PLATTNER'S MANUAL OF QUALITATIVE AND QUANTITATIVE ANALYSIS WITH THE BLOWPIPE. Translated by HENRY B. CORNWALL, E.M., Ph.D., assisted by JOHN H. CASWELL, A.M. Eighth edition revised after the sixth German edition, by PROF. FRIEDRICH KOLBECK. Illustrated with 87 wood cuts. New York: D. Van Nostrand Company. 8vo. Cloth. Price, $4.00.

All students of blowpipe analysis will be pleased to have this latest edition of Plattner's classic work in their libraries, especially

when they find that its subject-matter has been kept thoroughly up to date through the labors of Professors Richter, Kolbeck, and others and by valuable foot-notes and suggestions of the translator. Although the blowpipe behavior of several new minerals has been added and some lately devised reactions included, no essential alterations have been made. It is accordingly unnecessary to make an extended review of a work which all will admit is unsurpassed and has been proved in the hands of a generation of students.

The book is divided into three sections:

First, "A Description of Apparatus and Reagents" which is fully illustrated and occupies 56 pages. In this section all apparatus and reagents approved by experience are described.

Second, "Qualitative Blowpipe Analysis." This section occupies the major portion of the book and contains 289 pages. It is complete to the minutest detail and besides the simpler blowpipe reactions gives full directions for separating interfering elements. Here, too, will be found the detailed action before the blowpipe of all minerals and metallurgical products which even the expert is likely to be called upon to identify and for this reason alone the book should be found in every mineralogical laboratory.

Third, "Quantitative Blowpipe Analysis" occupies 94 pages. To the blowpipe enthusiast this section will perhaps prove the most interesting. It is, however, probable that the assayer and chemist will for some time to come monopolize this branch of the subject. Its assays for silver, gold, copper, lead, bismuth, tin, cobalt, nickel, and mercury are highly ingenious and will commend the admiration of all chemists for the intricate knowledge of the chemical reactions involved and their application to the end to be attained.

It seems almost presumptuous to make any criticism of a work of this character but many will regret the omission from the translation of the spectroscopic methods, at least as applied to the ordinary flame spectra. These reactions are surely as applicable to blowpipe work as the many wet methods given, and no procedure gives quicker or more certain results. The chemical notation can hardly be called modern as the old dualistic formulas are still applied to by far the larger number of minerals. All, too, will regret the use of such obsolete terms as sesquioxide, protoxide,

bisulphate of potassa, etc. The work of the translator has, however, been admirably done. The German has been intelligently and accurately converted into excellent English and the paper, typography, and binding are first-class.

The book is well indexed. CHARLES LATHROP PARSONS.

AMMONIA AND ITS COMPOUNDS—THEIR MANUFACTURE AND USES. By CAMILLE VINCENT. Translated from the French by M. T. SALTER. London: Scott, Greenwood & Co. 1901. viii + 114 pp. Price, $2.00.

The author, Camille Vincent, is well known for his method of preparing methyl chloride from the vinasse of the beet-root sugar. In this book he has described in some detail the methods used in France for the production of ammonia and the ammonium compounds. So far as it goes the book is well conceived and well written, but it by no means exhausts the subject and is notable for the almost entire neglect of the commercial side—the cost. One of the large sources of ammonia, the English shales, some of which give 72 pounds of sulphate per ton, is not mentioned. Nor is any attention given to the synthetic preparation of ammonia—a problem now apparently nearing solution. EDWARD HART.