NOTE.

Qualitative Tests for Boracic Acid.—It seems not to have occurred to authorities on the subject to test the effect of the alcoholic vapors of boracic acid on turmeric paper. We find that, if the test is applied in the following manner, the presence of boracic acid in minerals is rendered more certain and delicate.

Use a test-tube about 2.5 cm. in diameter and 20 cm. long. Put into the tube about 0.1 gram of the substance, 0.5 cc. hydrochloric acid, and 10 cc. wood alcohol. Boil vigorously down to small bulk, agitating the lower end of the tube in flame of burner, and holding the moistened end of a piece of turmeric paper just outside the mouth, so as to catch the vapors. Boracic acid will finally color the turmeric a characteristic red. Now, if the turmeric is placed vertically on the side of a beaker so as to dip into a little distilled water to which a few drops of ammonia have been added, a pinkish to deep purple or blue will be produced, in marked contrast to the red produced by the ammonia on the end of the paper unaffected by the vapors.

LOS ANGELES, CAL.,
July 2, 1900.

E. M. WADE AND M. L. WADE.

NEW BOOKS.

THE CALCULATIONS OF ANALYTICAL CHEMISTRY. By EDMUND H. MILLER, Ph.D. New York: The Macmillan Co. 1900. viii + 183 pp.

In nearly all of the books published on the calculations of analytical chemistry there is a distinct statement in the preface that the book has been published with the idea of preparing the student to pass certain examinations. This pernicious system, fortunately, has not invaded the American text-book to anything like the same extent as it has the English books of the same class. There has been in the past scarcely any attempt to lay down general principles in regard to chemical calculations. This book is a decided advance in an attempt to treat the subject from a broad point of view. Just how far it will succeed remains to be seen, for there are hardly any two teachers who will treat the subject in the same way. All will, I believe, agree that it is a distinct advance to present such a subject entirely free from formulas. The student is asked to solve the problems, applying his general knowledge of chemistry. If he has been successful

in applying and understanding the laws, he can then construct his formulas if he so wishes.

The book consists of ten chapters divided as follows: calculations of chemical equivalents and atomic weights; formulae and percentage; mixtures having a common constituent; equations; use of factors; volumetric analysis; density of solids and liquids; gases; calorific power; electric and electrolytic calculations for direct currents. In addition there is a series of tables of weights, measures, specific gravities, factors, logarithms, etc., which will be found useful to any one having occasion to make any calculations. There will, probably, be a greater difference of opinion over the chapter on normal solutions than over any other. The author's development of the subject is satisfactory, but he has not exhausted the possibilities for clear treatment of a subject which can be made particularly attractive and instructive. The book, if used in connection with classroom work, will undoubtedly be of great value, and should help the student to a much clearer understanding of the quantitative values of chemical laws. HENRY FAY.

COLOUR: A HANDBOOK OF THE THEORY OF COLOUR. BY GEORGE H. HURST. New York: D. Van Nostrand Co. 1900. Price, $2.50.

The author of this book of 158 pages is a member of the Society of Chemical Industry, and is already known by his works on soaps, lubricating oils, painters' colors, and a "Dictionary of Coal Tar Colours." In this handsomely printed volume he endeavors to present to those familiar with the practical printing and dyeing of textile fabrics, and the mixing of colors for artistic effects, the theory of color, its cause and production, together with some account of the instruments used by scientific men in the study and measurement of color. The opening chapter treats of the prismatic colors, the spectroscope, wave motion, phosphorescence, fluorescence, luminosity, and so forth, in the compass of 31 pages. Other chapters deal with the theories of color as propounded by Young, Helmholtz, Brewster, and Maxwell, with the physiology of light, with contrast, and with the application of color to decoration and design. In his preface Mr. Hurst acknowledges his indebtedness to the manuals of Chevreul, Benson, Rood, and Church.