method. The results in the following table are given as the average composition as determined by a large number of analyses. The suspected vinegars, Nos. "1" and "2," and also the ash of vinegar made by repressing moist fermented apple pomace, are given for comparison.

	Pure cider vinegar ash. Per cent.	Apple pomace vinegar ash. Per cent.	Vinegar. (1) Per cent.	Vinegar. (2) Per cent.
Calcium Oxide (CaO)	3.40 to 8.21	4.73	4.70	37.95
Magnesium oxide (MgO) ...	1.88 to 3.44	4.12	2.00	2.22
Potassium oxide (K_2O)	46.33 to 65.64	37.00	None	7.84
Sodium oxide (Na_2O).....	Trace to trace	Trace	49.71	Trace
Sulphuric anhydride (SO_3) .	4.66 to 16.29	34.78	27.04	12.74
Phosphoric anhydride (P_2O_5.	3.29 to 6.66	9.66	0.005	1.82
Iron oxide (Fe_2O_3)	None to trace	Trace	Trace	1.60
Carbon dioxide, loss, etc....	40.44 to 0	9.61	16.54	35.83

The results of these analyses plainly showed that suspected vinegar No. 1 was composed of dilute acetic acid, glucose, and soda-ash. Suspected vinegar No. 2 was a mixture of acetic acid, boiled cider, and lime.

LABORATORY MICHIGAN DAIRY AND FOOD DEPARTMENT,
March 12, 1900.

NOTES.

Test for Tin.—I have found the blue color produced by the action of stannous chloride upon ammonium molybdate to serve as a very delicate test for tin; and have had my students use it for the last few months with very good results. In working this process one should go through the usual separation, filter off the black flakes, dissolve them in hydrochloric acid, then take a few drops of this solution and add a little water and then some ammonium molybdate. Blue color shows the presence of tin.

To determine the delicacy of the test, I used a standard solution of stannous chloride, and noticed results obtained from the mercuric chloride and ammonium molybdate tests.

Strong solution of $SnCl_2$ gives a heavy blue precipitate; with mercuric chloride a heavy white precipitate.

A solution of $SnCl_2$ containing 0.000021 gram to 1 cc. gives a deep blue color; with mercuric chloride a faint cloudiness.

A solution of $SnCl_2$ containing 0.0000042 gram to 1 cc. gives a

faint blue color with ammonium molybdate; with mercuric chloride not even a trace of cloudiness.

I find that the ammonium molybdate as prepared in the laboratory gives the best results.

ALLEN ROGERS.

Professor C. F. Mabery has sent to the Paris Exposition, at the invitation of the United States Geological Survey, 150 specimens of products from petroleum, illustrating the composition of Pennsylvania, Ohio, Canadian, California, South American, and Japanese petroleums, and specimens of nitrogen compounds from California petroleum, and sulphur compounds from Canadian petroleum. Other specimens illustrate the composition of paraffin.

NEW BOOKS.

DESCRIPTIVE GENERAL CHEMISTRY. By S. E. TILLMAN, Professor of Chemistry, Mineralogy and Geology, United States Military Academy. Second Edition. New York: John Wiley and Sons. London: Chapman and Hall. x + 429 pp. 8vo. cloth. Price, $3.00.

This book was written to meet the requirements for a text-book on chemistry at the Military Academy at West Point. It aims to give in compact form the salient facts of chemistry that the professional soldier ought to know. The time available for the study of chemistry at the Academy is a little less than two-hundred hours, so that in order to cover the subject but a very limited amount of laboratory work can be undertaken. The chief aim therefore is to impart to the student the necessary information, rather than to make the element of mental discipline the more prominent one. Study of a text-book accompanied by recitations and experimental and explanatory lectures together with a small amount of selected laboratory work consequently make up the course pursued.

The book is divided into six chapters which are as follows: I. Essential Principles of Chemistry, pp. 1–58; II. Affinity, pp. 59–81; III. Non-metals, pp. 82–192; IV. Metals, pp. 193–310; V. Organic chemistry, pp. 311–356; VI. Applications of Chemistry, pp. 357–411. In the first chapter the general principles of chemistry are stated, while in Chapter II, the law of mass action, strength of acids and bases, theory of solution, electrolysis,