with the work on the ash alkalinities and on the malic acid values. The results on malic acid are all his. Acknowledgment is also due to Miss Clara Hillesheim for her faithful and efficient assistance in making a large number of the analyses.

LABORATORY OF MINNESOTA DAIRY AND FOOD DEPARTMENT,
ST. PAUL, MINNESOTA.

NOTES.

An Experiment Illustrating Osmosis.—If one places an ordinary hen's egg in concentrated hydrochloric acid for a few minutes, the shell is removed and the egg is left in its original shape, surrounded by an excellent semi-permeable membrane.

If now the egg is placed in a beaker of pure water, it will swell up very markedly. For example, an egg weighing 57.8 grams, shelled as indicated, increased in weight in twenty-four hours to 79.0 grams, and in larger circumference from 15.5 to 18.5 cm.

If the egg is placed in a saturated solution of calcium chloride, it will diminish in size just as strikingly. For example, an egg weighing 50 grams decreased in weight in twenty-four hours to 38.8 grams, and in larger circumference from 15.5 to 13.5 cm.

For lecture purposes a very effective arrangement is to get three eggs as nearly the same size as possible, shell them as indicated and place one of them in a calcium chloride solution and the other in water, reserving the third for comparison. At the next lecture attention is called to the change in appearance. The calcium chloride egg will look as if it were cooked.

A still more striking method is to place an egg in a small beaker so that only half of it is immersed in acid. When the half shell is removed the egg is placed in water and in twenty-four hours the unshelled portion will be expanded amazingly and the portion retaining the shell will serve for comparison.

An interesting fact in this connection is that an egg from which the shell has not been removed will increase in weight very materially if placed in pure water for a few hours, but will remain otherwise unchanged. HORACE G. BYERS.

UNIVERSITY OF WASHINGTON.

Preparation of Cyanacetic Ester.—Although cyanacetic ester is a substance of very considerable importance for synthetical work

in organic chemistry, I have been unable to find any satisfactory directions for its preparation. After considerable experience with different mixtures, the following method has been found most satisfactory.

One hundred grams of chloracetic ester (which has been shaken with a solution of sodium carbonate to remove any free chloracetic acid), 54 grams of pure potassium cyanide and 70 cc. of methyl alcohol are put in a flask and boiled with an upright condenser for four hours. The solution is then cooled and sucked off from the potassium cyanide as far as possible, the methyl alcohol distilled away and used for rinsing the potassium cyanide. After distilling the methyl alcohol again from the washings and adding the residue to the main portion, some ether is added to the latter, causing the precipitation of some insoluble matters. The solution is then poured off and fractioned two or three times under diminished pressure. The yield of cyanacetic ester boiling within an interval of about 10° and sufficiently pure for most synthetical purposes is 45 to 55 grams. This is little more than 50 per cent. of the theory, but many other methods which have been tried give lower yields, and, in some cases, only about half as much.

W. A. NOYES.

JOHNS HOPKINS UNIVERSITY,
BALTIMORE, MD.

NEW BOOKS.

RUBBER, GUTTA-PERCHA, AND BALATA. BY FRANZ CLOUTH. First English translation, with additions and emendations, by the author. London: Maclaren and Sons; New York: D. Van Nostrand Company. 1903. Price, $5.00 net.

This work is a somewhat enlarged translation of the German edition, and is, in some ways, a disappointing production. It is written by the head of one of the largest of German rubber factories. One would, therefore, naturally expect that, though the book might show deficiencies in its botanical, physical, or chemical sections, in which the author simply shows himself as compiler the technical part of the work would be distinguished from earlier books on the same subject by comprehensive treatment of the ways and means employed in the manufacture of rubber goods. Such a book would be a very acceptable addition to our technical