MONTHLY RECORD OF ANALYTICAL RESEARCHES INTO FOOD.

NEW APPARATUS FOR USE IN THE DETERMINATION OF STARCH.—Berichte der Deutsch. Chem. Gesell. 5, p. 621.—R. Rempell describes some new apparatus for use in the detection of starch, which have stood the test of six months' work with him.

Starch in corn, potatoes, etc., is usually determined by heating the finely powdered substance with a 0·25—0·5 per cent. tartaric acid solution in the well-known Linter's pressure flasks for 3—4 hours on a paraffin or oil-bath, inverting the filtered solution with hydrochloric acid, and determining the grape-sugar formed with Fehling's solution.

The new pieces of apparatus are explained with the help of drawings, which naturally cannot be reproduced here. The author has improved the Lintner's flask by inventing a new hermetical stopper. The neck is surrounded by a metal ring, which is connected on both sides with an iron stirrup or hoop; through the horizontal part of the latter works a vertical screw, which presses a metal and glass plate, to the latter of which is attached an india-rubber washer, on to the ground glass edge of the bottle, and closes it hermetically.

Instead of the inconvenient paraffin or oil-bath, the author has constructed an air-bath of sheet copper. The bath can be used with four flasks of the described construction. The four openings are closed with covers consisting of two parts, and provided with a hole in the middle for the neck of the flasks. The bottom of the air-bath is covered with an asbestos-plate to prevent the flasks becoming unequally heated. A little distance above this is a false bottom, with an opening in the middle, and this is followed by a perforated bottom. The circulation in a so constructed bath is regular, and all parts become equally heated; the path taken by the heated air is shown by means of arrows in a sectional drawing.

The author's apparatus permits of clean and accurate work. The flask and the air-bath may be obtained from the firm, Rohrbeck's Nachfolger, in Vienna.

F. H. H.

THE DETECTION OF STARCH IN GRAIN AND POTATOES. By M. MARKER.*—Three grms. of the finely powdered substance are heated with 50 c.c. of water to 90°C, allowed to cool to 65°C, and finally heated with 5 c.c. of a cold infusion of malt, obtained by heating 50 grms. malt with 1 litre water.

After half an hour, tartaric acid (10 per cent. sol.) is added, the mixture heated for half an hour at a pressure of 3—4 atmospheres, and allowed to cool down to 65°C. Another 5 c.c of the malt infusion are now added, and, after half an hour, the liquid inverted, after the addition of 15 c.c. hydrochloric acid and 150 c.c. water, by heating at 100° for 2½ hours on the water-bath. The sugar produced is determined, after neutralisation with soda, according to Allihn's method. F. H. H.

* Repert. der Anal. Chem., No. 7 [1885] p. 116.

On the Determination of Casein in Cow's Milk by Precipitation with Sulphuric Acid.*—By Frenzel and Weyl.—20 c.c. of the well shaken milk are mixed with 60 c.c. distilled water in a beaker of 150 c.c. capacity. The mixture being well stirred, 30 c.c. of sulphuric acid (1°/₀₀) are run in. The beaker is then covered, and allowed to stand in a cool place. The supernatant liquid is decanted through a weighed filter. Finally, the precipitate is brought on to the filter, and washed twice with water. The washing is continued with alcohol, at first 90 per cent., and then absolute, and finally with ether, 10 times if a skimmed, 15 times if an ordinary milk. The filter is dried at 110°C and weighed.

The analyses lead to the following conclusions on the part of the author:—

1. It is sufficient to dilute with four times the volume, without essentially influencing the exactitude of the casein determination.

2. The use of carbonic acid is superfluous.

3. The method is quicker than the one in use (Hoppe-Seyler's); first, because it is not necessary to pass carbonic acid; secondly, because the quantity of liquid to filter is considerably smaller. F. H. H.