A TEST FOR CITRIC ACID.

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SARANDINAKI was the first to show that on heating an aqueous solution of citrate of ammonia, or of citric triathylic ether to 110°C in a closed tube, a substance is formed possessing an intense bluish green colour.

The authors, on heating citric acid with an excess of ammonia (for about six hours) to 120°C , obtained a liquid of a slightly yellow colouration, which on exposure to the air in a porcelain basin, in the course of a few hours assumed an intensely blue tint, which in the course of a few days changed to green. Exposure to light hastened the appearance of the blue colour, whilst on prolonging the heating, or raising the temperature to 150°C , the green product was at once obtained.

10 milligrammes of citric acid, and 2 or 3 c.c. of ammonia thus yielded a very strong and decisive reaction, half that quantity of citric acid sometimes failing to yield the blue liquid.

Oxalic, tartaric, malic, and similar organic acids, with the exception of aconitic acid, do not produce the reaction.

To detect citric acid in the juices of fruits, they are mixed with an equal volume of alcohol, and after some hours the filtrate is precipitated by means of acetate of lead solution. The precipitate is washed, ammonia is added to it, the solution evaporated to remove excess of ammonia, and then decomposed by means of sulphuretted hydrogen. To the filtrate acetate of baryta is added, the liquid is boiled, the precipitate separated by filtration, washed and decomposed by means of dilute sulphuric acid. The liquid thus obtained is concentrated, super-saturated with ammonia, and heated in closed tubes as directed.

Thus citric acid may readily be detected in the juices of the bilberry and the currant, whilst contrary to usual statements the juice of the apple was found to be entirely free from it.

Though complicated, this is claimed to be the most characteristic and delicate test for citric acid known.