tages in accuracy or stability of solution. The procedure in this oxidation method is much simpler and more rapid than that required in the original von Knorre persulfate method.

2. With potassium iodide a blank correction must be subtracted from the volume used because of the action between the silver and iodide ions.

3. With sodium nitrite the equilibrium in the region of the end-point is quite slow. The sodium nitrite solution, if practically free from chloride, may be standardized gravimetrically by weighing the silver bromide formed from the action between silver bromate and nitrite in acid solution. An alternative method is the electrometric titration of standard potassium permanganate with the nitrite solution.

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NOTE

An Improved Test for Borates.—A solution suspected of containing a borate is made slightly alkaline with sodium hydroxide and evaporated practically to dryness. The residue is treated with 1 cc. of concentrated sulfuric acid and allowed to cool. Two cc. of methanol is then added and the solution transferred to a test-tube. The latter is fitted with a two-holed rubber stopper through which two glass tubes of about 4 mm. bore are inserted. One of these tubes extends to the bottom of the test-tube, and the external portion of it is bent to an angle convenient to allow its use as a mouthpiece. The other tube serves to conduct the vapors from the test-tube and therefore does not extend far below the rubber stopper. The external portion contains a right angle bend and terminates in a long capillary. This capillary should be at least 3 cm. long and should have a bore not greater than 0.5 mm.

When air from the lungs is blown into the apparatus the bubbles arising through the heated solution convey the volatile methyl borate (if present) out through the capillary tube. The exit stream of vapors is directed into a small, non-luminous Bunsen flame. A characteristic green color will be produced in the Bunsen flame if a borate is present in the original solution.

The long capillary of the exit tube prevents any flame from traveling back into the test-tube and at the same time concentrates the effect in the Bunsen flame.

As little as 0.2 mg. of boric acid has been detected by this test.

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