to hold in solution the cuprous oxide, which would otherwise appear as a yellowish or reddish precipitate. Therefore, when enough diabetic urine has been added to reduce all the cupric oxide solution to cuprous oxide, the test solution becomes perfectly colorless.

After the blue color has disappeared from the test solution, we should then note the number of minims of urine used to bring about the end-reaction.

It has been found that the amount of the test solutions, carefully measured and mixed as indicated, represents a fixed sugar value of one-tenth (1-10) grain of grape sugar, *i.e.*, it is reduced and decolorized by exactly one-tenth (1-10) grain of sugar. Consequently, the amount of urine used to bring about the end-reaction contains exactly one-tenth (1-10) grain of sugar; and knowing this, the number of grains of sugar to the ounce can readily be calculated.

Example: In a specimen of diabetic urine, should we find the test solution is decolorized by the addition of twelve (12) minims of urine, then, as above stated, these twelve (12) minims of urine contain one-tenth (1-10) grain of sugar. Divide 480 (the number of minims in an ounce) by twelve (12) and the quotient by ten (10), and we get the number of grains in an ounce, which, in this instance, would be

$$\left(\frac{480}{12} \times \frac{1}{10}\right) = 4 \text{ grs.}$$

In applying the test for quantitative estimation, in order to secure accurate results, it is well to observe the following precautions:

1. Urine containing pus and other anatomical or chemical precipitates should be filtered, before being added to the test solution, in order to secure a clear end-reaction.

2. Do not add the urine too quickly to the boiling test.

3. The urine must not be added too gradually to the test, because volatilization of the ammonia may proceed more rapidly than reduction, and in the end some of the cuprous oxide may escape solution and make the test turbid.

4. When the test is started, it should be completed without interruption of ebullition, else some spontaneous reoxidation