by dissolving 58.9 grams of the pure salt in 2 liters of distilled water.

Sulphuric Acid, H_2SO_4, 0.967 *N*, standardized gravimetrically with barium.

Arsenious Acid, As_2O_3, 0.025 *F*, or 0.1 *N*, prepared by dissolving 9.90 grams of pure "lump white arsenic" in hot water and diluting to 2 liters with distilled water; before use the solution was diluted to ten times its volume with boiled distilled water (to prevent slow oxidation by oxgyen).

Iodine, approximately 0.1 *N*, prepared by dissolving resublimed iodine in potassium iodide solution and diluting. For titrating, this solution was diluted to ten times its volume and compared frequently with the volumetric arsenious acid solution.

Ammonium Bicarbonate, "restrainer," prepared by passing carbon dioxide into a saturated solution of commercial ammonium carbonate, diluting with its own volume of water and again saturating with carbon dioxide.

Starch Solution, "indicator," prepared frequently by dissolving a gram or two of starch in 500 *cc* of boiling water, cooling and allowing to settle.

Explanation of the Tables

After *Cr* and *Ac* at the head of the tables are given the amounts, expressed in 10^{-5} gram-formula-weights (*i. e.*, in *cc* of 0.01 solution) of $K_2Cr_2O_7$ and H_2SO_4 respectively; after *As* the amount of As_2O_3, the unit being 0.25×10^{-5} gram-formula-weights (*i. e.*, 1 *cc* of 0.01 *N* solution); after *Vol.* is given the volume of the reacting mixture in cubic centimeters. The constant k is defined by the equation, $k = \frac{1}{t} \log_{10} \frac{As}{As - x}$, where x is the amount (expressed in *cc* of 0.01 *N* solution) of arsenious acid oxidized in t minutes. After *Avg.* at the end of the tables is given the average of the constants; in taking the average, bracketed numbers were omitted.