comes cold, chemical action ceases, and no amount of subsequent agitation will discharge the color of the iodine, although it is still in the presence of uncombined metallic zinc.

The cause of the suspension of chemical reaction in the above mixture is due to three conditions, namely, concentration of the solution, diminution of the area of the surface of the metallic zinc, and absence of heat.

If, on the other hand, we employ a considerable excess of metallic zinc, using the atomic weight of iodine as before, the very largely increased area of zinc-surface exposed to the action of the iodine, enables combination to proceed regardless of concentration, up to the point of the complete discharge of the iodine color, thus indicating complete chemical union of the two elements.

In the case of Magnesia Magma, for the same reason, chemical equivalents should not be used; but we must have an excess of sodium hydroxide, in order that the magnesium sulphate may be completely decomposed. This is evident from the amount of that salt found in the supernatant liquid when less than an excess of sodium hydroxide is employed.

URINE ANALYSIS; QUANTITATIVE ESTIMATION OF GLUCOSE.

JOSEPH L. MAYER.

Any one who has occasion to make many quantitative determinations of sugar in urine, is aware of the necessity of having a rapid, accurate and easily applied method of analysis.

Shortly after the publication of Benedict's paper, "The Detection and Estimation of Glucose in Urine" I began experimenting with the object of ascertaining the accuracy of the method.

The sugar in a sample of urine was determined volumetrically by employing the following modification of Benedict's method, which I suggested in a paper read at the last annual meeting of the American Pharmaceutical Association (Journal A. Ph. A., May, 1914, page 687).

Into a 100 cc. Erlenmeyer flask, with cord wrapped around the neck to prevent burning the fingers, pour 25 cc. of accurately measured Benedict's Quantitative Solution, add a few grammes of crystallized sodium carbonate and place on the hot plate. When the solution is boiling, gradually add the sugar solution from a burette, with sufficient slowness to allow the reaction to proceed, putting the flask back on the hot plate until disappearance of color.

The sugar in this same sample, was then determined gravimetrically, by the following method of Defren-O'Sullivan (Leach, Food Inspection and Analysis, 2nd edition, page 564):

Mix 15 cc. of Fehling's Copper Solution with 15 cc. of the Tartrate Solution in a quarter liter Erlenmeyer flask and add 50 cc. distilled water, place the flask and its contents in a boiling water bath and allow them to remain five minutes, then run rapidly from a burette into the hot liquor in the flask, 25 cc. of the sugar solution to be tested (which should contain not more than one-half percent

*Read before the New York State Pharmaceutical Association, June 23, 1914.

of reducing sugar). Allow the flask to remain in the boiling water-bath, just fifteen minutes after the addition of the sugar solution, remove, and with the aid of a vacuum, filter the contents rapidly into a platinum or porcelain Gooch Crucible containing a layer of prepared asbestos-fiber about 1 gm. thick, the Gooch, with the asbestos, having been previously ignited, cooled, and weighed. The cuprous oxide precipitate, is thoroughly washed with boiling distilled water until the water ceases to be alkaline.

(The asbestos should be of the long-fibered variety and should be especially prepared as follows: Boil first with nitric acid (sp. gr. 1.05 to 1.75) washing out the acid with hot water, then boil with a 25 percent solution of sodium hydroxide, and finally wash out the alkali with hot water. Keep asbestos in a wide-mouthed flask or bottle, and transfer it to the Gooch, by shaking it up in the water and pouring it quickly into the crucible while under suction.)

Dry the Gooch with its contents, in the oven, and finally heat to dull redness for fifteen minutes, during which the red cuprous-oxide is converted into the black cupric-oxide. After oxidation as above, the crucible is transferred to dessicator, cooled, and quickly weighed. From the milligrams of cupric oxide, calculate the milligrams of dextrose from table accompanying the method.

The results by both methods were as follows:

Gravimetric	2.806% sugar
Volumetric	2.777% sugar
	.029% difference

Another sample of urine tested by the same methods contained, by the

Gravimetric method....	6.34 % sugar
Volumetric method.....	6.29 % sugar
	.05 % difference

These results clearly indicate that the volumetric method of Benedict modified as above, while rapid and easily applied, is capable of yielding just as accurate results as the longer gravimetric method.

I am now conducting a series of experiments, to determine the relative accuracy of all the methods commonly used to quantitatively determine glucose in urine, and hope in the near future to publish the results of same.

THE SIXTY-FIFTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION.

M. I. WILBERT, PH. M., WASHINGTON, D. C.

The 1914 meeting of the American Medical Association was held in Atlantic City June 22-26 and 3,958 members registered as present at the convention. This registration is reported to have been considerably larger than that of any of the previous sessions of the Association in Atlantic City. The work of the House of Delegates and its committees, and the proceedings of the several Sections of the Association are reported at length in the Journal of the American Medical Association for July 4, 1914, v. 63, p. 73-130. The scientific papers, because of the restrictions imposed by the House of Delegates at the Minneapolis meeting, were fewer in number than in former years but the subject matter dis-