

to a certain line in the narrow tube, 10 cubic centimeters of the chloride of sodium, just described, are measured off, and put into a small beaker; to this are added 3 cubic centimeters of a solution of urea, containing in 100 cubic centimeters 4 grammes, or in 1 cubic centimeter 40 milligrammes, of urea.

For the purpose of measuring this solution, a small measure is made of a narrow test tube, in which 3 cubic centimeters of liquor are measured off; the height of the liquor is marked by a scratch with a file; a few drops more or less are of no consequence.

The dilute solution of mercury, to be graduated, is now put into a burette, the height of the liquor noted, and added drop by drop to the solution of chloride of sodium mixed with urea, whilst the liquor is kept in a rotatory motion. The test is finished as soon as a distinct precipitate is permanently formed in the liquor.

An opalescence of the liquor is not to be regarded; it is caused by a trace of foreign metals; it may immediately be recognized as not pertaining to the test, when, after its appearance, the cloudiness of the liquor is not increased by the addition of a few drops of the mercurial solution. This is not the case when the cloudiness has been caused by the urea compound; every additional drop of the mercurial solution then produces a cloud, by which the liquor is rendered more opaque than it was before.

If for 10 cubic centimeters of solution of chloride of sodium, 7.8 cubic centimeters of the mercurial solution have been required to induce the precipitate, the latter is too concentrated to admit of an exact graduation; it has then to be diluted with its bulk of water, and the test to be made a second time. Suppose 15.5 cubic centimeters of the mercurial solution have now been required to produce a cloudiness in 10 cubic centimeters of the solution of chloride of sodium mixed with urea; then to 155 volumes of this mercurial solution 45 volumes of water must be added, whereby 200 volumes of a solution are produced, of which 20 cubic centimetres indicate exactly 200 milligrammes of chloride of sodium, or 1 cubic centimeter 10 milligrammes.

If in the first trial 2.7 cubic centimeters of mercurial solution be required for 10 cubic centimeters of the solution of chloride of sodium, 5 or 6 times its bulk of water must be added before the first graduation is made. In short, the mercurial solution to be graduated should not be too far removed in concentration from the amount which it is ultimately to contain. The correctness of the measure-