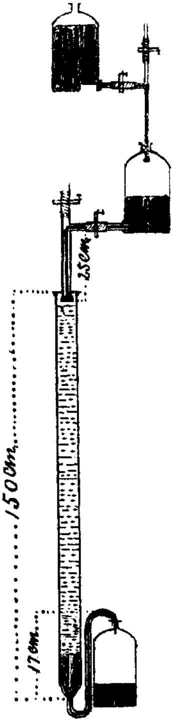

cent. acid is better than the more dilute solution recommended by Meyer.

The mercury is atomized by forcing it through chamois skin tightly stretched over the end of a 25 mm. tube and bound fast by means of a cord. This large tube is drawn down sharply as shown in the figure and sealed to a 5 mm. tube which is attached to the T-tube of the aspirator bottle. It is so adjusted that the atomizing skin is about 15 mm. above the surface of the acid, and the pressure of the mercury is so regulated by means of the screw pinchcock as to make the fine streams just continuous, otherwise the skin may be so distended as to become hemispherical, in which event some of the mercury may be sprayed on the sides of the tube and collect in small drops.

The object of the upper aspirator bottle and filter, precisely like the lower one, is to increase the capacity of the reservoir and to remove solid particles which tend to clog the pores of the atomizing skin.

In offering the above suggestion the writer lays little claim to originality. It is but a slight modification of a time-honored method, but he does claim that in his hands it works far more rapidly, requires no attention, and the product obtained by one passage through the acid is much purer than by the original method, and he trusts that others may have a like experience with it.

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On the Preparation of a Cuprous Nitrate, $CuNO_3.2NH_3$.—Cuprous nitrate, of the formula $CuNO_3.2NH_3$, was prepared as follows:

A glass tube of two arms, the one carrying a stopcock, was drawn out as shown in Fig. 1. An approximately weighed amount of dried cupric nitrate of the formula $Cu(NO_3)_2.4NH_3$[1] was introduced into the arm A and the stopcock attached to a cylinder of dried ammonia. Ammonia was then passed through both arms and A sealed off. A piece of bright copper foil was then introduced into B and the arm sealed off at the lower end.

Ammonia was now distilled into A under pressure (A was placed in ice water for this purpose) until nearly full. The solution of cupric nitrate

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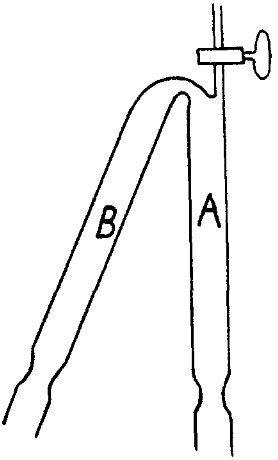
[1] $Cu(NO_3)_2.NH_3$ is easily prepared by supersaturating an aqueous cupric nitrate solution with ammonia, when it crystallizes out, and may then be washed and dried over sulphuric acid. It is a stable salt in contact with the air, and is very soluble in ammonia

was then poured over into B. A was washed free of cupric nitrate by distilling some ammonia over from B, and then pouring it back again. This was repeated until no color was obtained in A. The solution was then allowed to stand in contact with the copper foil until the color of deep blue gave way to a practically colorless solution.

The solution was then transferred to A, and B washed by repeated distillations of the ammonia from A to B, and then pouring back into A. The ammonia was then allowed to gradually distil off through the stopcock. As the solution concentrated, the cuprous nitrate crystallized out. A was then sealed off, evacuated, and weighed. The salt was then dissolved in dilute nitric acid, washed out, and the copper determined electrolytically. The tube was dried, evacuated and weighed.

The weight of the crystallized salt was 0.5786 gram; weight of copper 0.2292 gram, giving 39.61 per cent. copper, in fair agreement with the formula $CuNO_3.2NH_3$ which requires +39.86 per cent. The increased weight of salt obtained corresponds (weighings of cupric nitrate and copper foil approximate) to the loss of weight in the copper foil.



The salts obtained were not entirely pure. A few blue crystals separated out with the colorless cuprous nitrate, showing the presence of a little cupric nitrate. This could not be separated owing to their similar solubility. Possibly this could be avoided by using more elaborate apparatus, but it seemed as if there was a point of equilibrium reached when the cupric nitrate was nearly reduced. The salt is not stable in the air, oxidizing very rapidly.

A recent analysis of another sample by Mr. G. H. Bohart, of this laboratory, in which the nitrogen was also determined, gave practically the same result for the copper content, and also agreed very closely with the theoretical nitrogen content for the above formula.

The preparation of the above salt was suggested by Prof. E. C. Franklin.

W. H. SLOAN.

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE MASSACHUSETTS INSTITUTE OF TECH.]

THE CONDENSATION OF SOME PRIMARY AROMATIC AMINES WITH CHLORAL-ANILINE.

BY STROUD JORDAN.

Received June 10, 1910.

It has been known for a long time that when one molecule of an amine, as aniline, is brought in contact with one molecule of an aldehyde, as