

NOTES.

On the Precipitation of Metallic Gold.—The well-known way of precipitating gold by ferrous sulphate solution from an acid solution of gold chloride or by heating a solution of the latter salt with one of potassium nitrite, precipitates the gold as a dull brown heavy powder which settles slowly. The following method will precipitate the gold in one or two minutes and, strange to say, it will be in the form of a precipitate resembling silver chloride. To a solution of gold chloride in the proportion of 1 gram of salt to 30 cc. of water, a stick of potassium nitrite weighing about 5 grams is added. Then, without allowing it to dissolve, about 5 cc. of concentrated sulphuric acid are added. Brisk effervescence takes place with the liberation of the well-known nitrogen peroxide, the solution becoming brown. When the reaction has ceased another piece of potassium nitrite is added of the same size as the first, and the solution stirred until all reaction has ceased. The solution will now be very clear, having a pale blue tint while on the bottom of the beaker there will be seen a layer of dark brown nodules, which on account of their density can be easily separated from the solution by decantation. When dry, the color resembles that of ignited cadmium oxide only it is more yellow. The nodules are very friable when dry and can be fused to a yellow lustrous globule on charcoal with the aid of borax.

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Preparation of Phosphorus Diiodide.—The methods of making this substance described in the literature and involving the use of yellow phosphorus are unpleasant to use and difficult to manage satisfactorily, if any considerable quantity is required. Having occasion to use quite a large quantity of PI_2 in the preparation of some compounds which we needed for other work, the following method was adopted as being easy of manipulation, and avoiding the violence of the reaction between iodine and yellow phosphorus.

Fifty grams of iodine are mixed with 4 grams of red phosphorus in a 200 cc. flask. The flask is then heated with a free flame until the mixture is thoroughly melted. It is then allowed to cool to 60° , and 2.5 grams of yellow phosphorus are added in small pieces. When all the yellow phosphorus is added the mass