

### Preparation of Nitrogen-free Sulphuric Acid

OF the various methods suggested for the preparation of sulphuric acid suitable for use in nitrate estimations, the method of Atkins<sup>1</sup> is perhaps the most suitable. There is, however, one disadvantage in this method, namely, the precipitation of sulphur if a slight excess of hydrogen sulphide is added. This not only takes a long time to settle, but also interferes with the estimation, often giving lower values due to the presence of traces of sulphur dioxide.

Various alternative methods were tried in this laboratory for the preparation of a suitable sample of sulphuric acid for the estimation of nitrates in sea-water by the reduced strychnine method of Denigès. A good procedure seems to be to treat about 250 ml.

of concentrated sulphuric acid (ordinary quality) with 6-10 drops of 40 per cent formalin solution in a 500 ml. Kjeldahl flask, and to boil the mixture until it is decolorized. It is possible to prepare about a litre of good acid in the course of a couple of hours by using a series of flasks. The acid so prepared gives an almost colourless reagent with reduced strychnine.

This method is, therefore, suggested as an alternative where difficulty is experienced in the preparation of acid according to Atkins' method.

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<sup>1</sup> Atkins, W. R. G., *Nature*, **129**, 98 (1932).