found. This assumption, however, is at once improbable and incapable of proof. It is at least equally probable that the cobalt, nickel, and thallium are all present as peroxides.

Fluorine.—An attempt was made to determine the fluorine in about 6 grammes of the nodules. The calcium fluoride ultimately obtained weighed less than a milligramme (0·0006 per cent.), so that fluorine, although undoubtedly present, is so in quantity too small to be accurately determined by any of the recognised methods, at least without undertaking a special research.

Estimation of Ammonia.—Only one estimation was made. About 6 grammes of the nodules were distilled with strong caustic soda solution, the distillate collected in hydrochloric acid, and the ammonia determined gravimetrically by precipitation with platinum chloride. From the weight of metallic platinum obtained the percentage of $(NH_4)_2O$ was calculated, and found to be 0·016 per cent. of the manganese nodules taken.

Estimation of Carbonic Acid.—After addition of excess of ferrous sulphate and of silver sulphate (in order to prevent liberation of chlorine), weighed portions of the powdered nodules were boiled with dilute sulphuric acid in a flask connected with a Liebig's condenser, chloride of calcium tubes, and finally potash bulbs. During the operation a slow current of pure air was passed through the apparatus.

Two estimations gave identical results, viz., 0·29 per cent. CO_2.

Estimation of Sulphuric Acid.—2·0347 grammes of the nodules were fused with sodium carbonate, the fuse thoroughly extracted with water, and the sulphuric acid determined in the usual manner.

0·83 per cent. SO_3 was obtained.

The sulphuric acid determined in an aliquot portion of the aqueous extract obtained by boiling 46·732 grammes of the nodules amounted only to 0·36 per cent., so that, unlike the chlorine, the sulphuric acid is chiefly present in the nodules in insoluble combinations.

The final results of the analysis are given in Tables I., II., and III.

Column I., Table I., gives the percentage composition of the powdered nodules without making any deduction for hygroscopic moisture.

Columns II. and III., Table I., give the percentages belonging to the residue insoluble in hydrochloric acid and to the aqueous extract.

Table II. gives the percentage composition after deducting the water, the residue insoluble in hydrochloric acid, and the aqueous extract.

Table III. gives the percentage composition of the residue insoluble in hydrochloric acid.

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