VOLUMETRIC DETERMINATION OF PHENOL.

By W. F. KOPPESCHAAR.

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ON the addition of an aqueous solution of bromine to liquids containing Phenol, a precipitate is thrown down, consisting of Tribromophenol. According to Landolt, this precipitation is still perceptible in a solution containing, 1 part of Phenol in 43,700 parts of water; and accordingly this substance possesses a high degree of insolubility. Experiments have proved, that the action of Bromine upon Phenol takes place according to the formula $C_6 H_6 O + 6 Br. = C_6 H_3 Br_3 O + 3 H Br.$ But on account of the difficulty of collecting, washing, and drying this precipitate, a direct gravimetric determination of the phenol cannot thus be accomplished, the tribromophenol being very voluminous and volatile at $100^\circ C.$

But according to the numerous experiments of the author, Phenol may be determined with great accuracy, volumetrically, by ascertaining indirectly the quantity of Bromine which combines with a known quantity of the substance to be examined. He prepares an aqueous solution of bromine, and determines its strength by titrating, by means of hyposulphite of soda, the iodine separated from iodide of potassium, by a measured volume of the bromine solution.

A clear solution of the sample to be analysed, is prepared by dissolving 4 grammes in 1000 cc. of water, the liquid being filtered, if necessary 25 cc. of this solution are put into a stoppered bottle, capable of holding 500 cc. A measured volume of the bromine solution, containing more bromine than is necessary to effect the reaction is added, and the liquid is allowed to rest for about a quarter of an hour. Iodide of potassium is now added, and the iodine is determined as usual by means of hyposulphite of soda. Thus the necessary data are obtained to calculate the percentage of C_6H_6O in the sample.

As it is both inconvenient and somewhat inaccurate to operate with Bromine water, a slight loss by evaporation being hardly avoidable, the author made a series of observations, employing the mixture of bromide and bromate of potassium, obtained by saturating caustic potash with bromine, and liberating from this mixture the bromine by means of hydrochloric acid. Thus the bromine acts in a nascent state. The results obtained in this manner are highly satisfactory. This latter modification is especially recommended when many samples of Phenol have to be examined.

O. H.