NOTE.

Preparation of Sulfurous Acid.—The cheapest and most convenient method of preparing small amounts of sulfurous acid for the laboratory consists in warming fuming sulfuric acid, containing 30% SO_3, with sulfur. The acid need not be pure and the evolution is slow and regular provided only lump sulfur in not too large amount be used. The sulfur dissolves forming a blue solution from which on warming SO_2 is given off mixed with some SO_3. If sulfuric acid is objectionable the resulting solution must be boiled and the gas again absorbed.

Evolution of SO_2 ceases when the SO_3 has been acted on and the sulfur melts. If the acid remaining is allowed to cool, it contains only a small amount of dissolved sulfur and is still fit for most uses. Now that copper has risen so enormously in price the saving effected is considerable.

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THE REACTIONS OF BOTH THE IONS AND THE MOLECULES OF ACIDS, BASES AND SALTS; THE INVERSION OF MENTHONE BY SODIUM, POTASSIUM AND LITHIUM ETHYLATES.

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Menthone occurs in Russian and American peppermint oils, as a rather important constituent of oils from pennyroyal and buchu has been found in geranium oil and occurs in other less well-known oils. It has also been described as a constituent of pine oil. Its constitution has been thoroughly established and the substance has been the subject of interesting investigations. The immediate practical object of this work was to try to develop a method for the detection and quantitative estimation of menthone in pine oils, and to learn something of the mechanism of a series of analogous condensation reactions with which we are working. Happily both of these objects have been realized and will be reported in other articles.

The inversion of menthone has been studied chemically by Beckmann, and from a more purely physical standpoint by Tubandt,[3] who, in the first of three papers on the subject, reached the following conclusions: (1) The inversion of menthone is a monomolecular, reversible reaction, effected by acids and bases. (2) The equilibrium point between *d*- and *l*-menthone is independent of the nature and concentration of the catalyser and of

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[3] *Ann.*, **339**, 41 (1904); **354**, 259 (1907); **377**, 284 (1910).