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**THE DETECTION AND ESTIMATION OF  $\alpha$ -NAPHTHOQUINONE  
 $\beta$ -NAPHTHOQUINONE, PHTHALONIC ACID AND PHTHALIC ACID.**

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During the progress of research upon the mechanism of the oxidation of naphthalene to phthalic acid, it was found necessary to be provided with methods for the detection and accurate determination of  $\alpha$ -naphthoquinone,  $\beta$ -naphthoquinone, phthalonic acid and phthalic acid; and also with a method for the determination of phthalic acid in the mixture of organic acids formed by the oxidation. As no such methods are described in the chemical literature, I was forced to work them out for myself; and after a number of preliminary trials arrived at the following, which have proved very satisfactory, both as to the simplicity of the operations involved, and the accuracy of the results obtained.

*Determination of  $\alpha$ -Naphthoquinone*: This compound was prepared by the method of Japp and Miller<sup>1</sup> which is an improvement on the method of Groves<sup>2</sup>.

The reaction of the quinone which seemed best suited for the purposes

<sup>1</sup> J. Chem. Soc. 39, 220 (1881).

<sup>2</sup> Liebig's Ann. 167, 357, (1873).