

V.—Note on the Preparation of Diphenylene Ketone Oxide.

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WHILST making experiments with the hope of preparing the anhydride of salicylic acid, $\begin{array}{c} \text{C}_6\text{H}_4 \\ | \\ \text{CO}- \end{array} \text{O}$, a quantity of salicylic acid was heated with acetic anhydride. On boiling the mixture, the acid dissolved, acetic acid and the excess of acetic anhydride used distilling off. A viscid liquid then remained in the retort, solidifying on cooling to a glass-like mass, undoubtedly consisting chiefly of salicylide. On submitting this to distillation, a considerable quantity of an oily product came over, solidifying in the neck of the retort to a crystalline mass. This on being washed with alcohol, and purified two or three times by crystallisation from that solvent, was obtained in the form of fine pale-yellow needles. On analysis this substance gave the following numbers:—

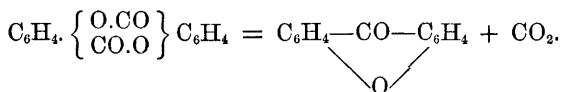
- I. 0.1450 gram of substance gave 0.4222 of CO_2 and 0.0571 of OH_2 .
 II. 0.1488 " " 0.4335 " 0.0559 "

These give percentages agreeing with the formula $\text{C}_{13}\text{H}_8\text{O}_2$.

	Theory.	Experiments.	
		I.	II.
Carbon	79.59	79.41	79.45
Hydrogen ..	4.08	4.37	4.17

It fuses at 173.5°C .

This substance is evidently the same as that obtained by Merz and Weith (*Ber.*, **14**, 187) by the oxidation of methylene-diphenyl oxide, also by R. Richter (*J. pr. Chem.*, N.F., **23**, 349) by distilling basic potassium salicylate with phosphorus oxychloride. This latter process, however, yields it, so far as I have experimented with it, in only comparatively small quantities, whereas by the method above described, from 30 to 40 per cent. of the theoretical quantity is obtained. Its formation from salicylide may be represented thus:—



This substance being now obtainable with comparative ease by the above process, my son, Mr. A. G. Perkin, has commenced the study of its derivatives, and of the secondary bodies which are also obtained in its preparation from salicylic acid.