WAL'S CA. LAWRANCE.

very soluble in alcohol, in ether and in benzene. It was purified from solution in alcohol to which water was added carefully until a slight turbidity appeared; after several hours, a few pale salmon-colored crystals appeared; these melted at 130° . Some hours later, an orange-colored amorphous powder (m p. $86-89^{\circ}$) was obtained from the alcoholic solution. Efforts to obtain a product with a sharper n. iting-point were without success.

In this Friedel and Crafts reaction, two diphenylamino-phthalides might be formed which we may call diphenyl-3-amino-phthalide and diphenyl-6-aminophthalide. The experiment was repeated under conditions shown by Rubidge and Qua to be favorable to an increased production of phthalides. Thus, 6.8 g. of 3-acetylamino-phthalic anhydride, 50 cc. of benzene and 9 g. of aluminum chloride were heated on the water-bath for 7 hours; then 10 cc. of acetic anhydride was added and the heating was continued for another 7 hours. The principal product obtained was an orange-colored gummy substance which, when crystallized from alcohol, was identical with the previous product, m. p. $86-9^{\circ}$. No trace of the substance melting et 130° was found. This compound is either diphenyl-3-amino-phthalide or diphenyl-6-amino-phthalide.

Calc. for CmH18O2N: N, 4.65. Found: 4.47.

The yield of this phthalide was 11% in the original experiment and 31% when acetic anhydride was used, calculated on the basis of 3-acetyl-amino-phthalic anhydride.

4-Acetylamino-phthalic Anhydride with Benzene and Aluminum Chloride.

A mixture of 5 g. of 4-acetylamino-phthalic anhydride (crude) and 50 cc. of benzene was boiled for a few minutes, then cooled and 6.75 g. of aluminum chloride was added slowly while the mixture was well shaken. The reaction was carried out at $80-85^{\circ}$ until hydrogen chloride was no longer evolved, and the solution was then allowed to cool. To this product 50 cc. of 10% hydrochloric acid was added and the excess of benzene was distilled with steam. When cold, the residue was filtered, boiled with a saturated solution of sodium carbonate and the solution filtered from the small quantity of gummy insoluble matter. Hydrochloric acid was added slowly to the filtrate and a pale yellow precipitate was obtained which, when washed with ice-water and dried, melted at $183-4^{\circ}$. Separation of the 2 benzoyl-amino benzoic and the other, at $195-6^{\circ}$ (with decomposition).

Rainer¹ obtained a benzoyl-aninobenzoic acid by reduction of "o-benzoyl-m-nitrobenzoic acid;" it melted at $193-4^{\circ}$. This is identical with one of the acids obtained from the above reaction and is 6-benzoyl 3-

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