

LXIV.—*Note on the Reduction of Aromatic Amides.*

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IN the year 1874, Guareschi (*Ber.*, **7**, 1462) observed that by the action of sodium amalgam in acid solution benzamide is reduced to benzyl alcohol. Emil Fischer has recently pointed out that the amides of the fatty series do not exhibit this reaction, and as differences of this kind between aromatic and aliphatic compounds offer many points of interest, I have, at Professor Fischer's request, tried the action of sodium amalgam on numerous other amides, and venture now to lay before the Society a brief sketch of the results so far obtained.

My experiments show that the amides of those aromatic acids in which the carboxyl-group is directly joined to the benzene-nucleus are readily attacked by  $2\frac{1}{2}$  per cent. sodium amalgam in acid solution, the corresponding alcohol being generally produced in fair quantity. Thus orthotoluyamide yielded about 38 per cent. of orthotolyl alcohol, the rest of the amide being converted into a resin, and to the extent of from 7—10 per cent. into a white, crystalline substance, which contained nitrogen and melted between  $154^{\circ}$  and  $155^{\circ}$ .

Salicylamide gave 42 per cent. saligenin and a brown resin, whilst from parahydroxybenzamide considerable quantities of parahydroxybenzyl alcohol were obtained.

In some cases, from anisamide for example, analogues of benzil and hydrobenzoin have also been obtained. I have found, on the other hand, that the amides of those aromatic acids in which the carboxyl-group is situated in a side chain cannot be reduced by sodium amalgam; thus all attempts to reduce phenylacetamide have been entirely futile, while the amide of cinnamic acid gives phenylpropionamide only.

Further experiments are now in progress, and I hope shortly to publish a detailed account of the whole research.

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