

Condensation of Succinic Anhydride with Phenols and Phenolic Ethers. Synthesis of Derivatives of Tetrahydronaphthalene. (Preliminary Note).

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Rosenmund and Schapiro (*Arch. Pharm.* 1934, 272, 313) have found that anisole condenses with succinic anhydride in presence of aluminium chloride in nitrobenzene medium to give γ -*p*-methoxyphenyl- γ -ketobutyric acid. We have found that the reaction proceeds smoothly in acetylene tetrachloride medium at ordinary temperature with almost theoretical yield. The ketonic acid gives a semicarbazone, m.p. 185-86° (decomp.).

Reduction by Clemmensen's method gives γ -*p*-methoxyphenylbutyric acid, m.p. 60°. Dehydration of this substance with phosphorus pentoxide in benzene medium, gives 1-keto-7-methoxy-1:2:3:4-tetrahydronaphthalene, m.p. 61°. It gives a semicarbazone, m.p. 221°. Further Clemmensen reduction gives 1:2:3:4-tetrahydronaphthol-7-methyl ether, m.p. 146°.

Veratrole, under similar conditions, gives rise to γ -3:4-dimethoxyphenyl- γ -ketobutyric acid, m.p. 163°. Its semicarbazone melts at 177°. Clemmensen reduction gives γ -3:4-dimethoxyphenylbutyric acid, m.p. 61°. Dehydration with phosphorus pentoxide gives 1-keto-6:7 (or 7:8)-dimethoxy-1:2:3:4-tetrahydronaphthalene, m.p. 99°-100°. The semicarbazone melts at 242-43°.

Phenol condenses with succinic anhydride under similar conditions giving rise to γ -*o*-hydroxyphenyl- γ -ketobutyric acid*, m.p. 146°. identical with the acid prepared by Rosenmund and Schapiro (*loc. cit.*) from 2-oxy- β -chlorpropionylbenzol of Meyer and Zutphen (*Ber.* 1924, 57, 200) over the nitrile. Clemmensen reduction gives γ -*o*-hydroxyphenylbutyric acid, m.p. 65-66°. The work is being extended.

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* This substance has been prepared by an identical method by Nargund and Rawal (*Private communication*).