Anal. Calcd. for $C_7H_5O_2NFBr$: C, 35.9; H, 2.1; N, 6.0. Found: C, 35.9; H, 2.1; N, 6.0.

Permanganate oxidation of the product gave in 67% yield a single acid whose m.p. (137.2–138.0°) was not depressed by admixture with an authentic sample of 2-fluoro-5-nitrobenzoic acid, prepared by the method of Slothouwer.[4]

2-Diethylaminomethyl-4-nitrofluorobenzene Hydrobromide.—In a typical run made according to the general directions of Burckhalter, *et al.*,[1] for the preparation of α-alkylamino-4-nitro-*o*-cresols from α-chloro-4-nitro-*o*-cresol, 22.0 g. (0.094 mole) of 2-fluoro-5-nitrobenzyl bromide and 14.6 (0.2 mole) of diethylamine gave 19.0 g. (66%) of pure product, m.p. 162° (dec.).

Anal. Calcd. for $C_{11}H_{15}N_2O_2F\cdot HBr$: C, 43.0; H, 5.2; N, 9.1. Found: C, 42.9; H, 5.2; N, 9.3.

2-Diethylaminomethyl-4-(7-chloro-4-quinolyl)-aminofluorobenzene Dihydrobromide.—A suspension of 18.0 g. (0.059 mole) of 2-diethylaminomethyl-4-nitrofluorobenzene hydrobromide in 50 ml. of absolute ethanol was reduced at a hydrogen pressure of 40 lb. in the presence of platinum oxide catalyst. The resulting mixture was filtered and the filtrate treated with a slight excess of alcoholic hydrogen bromide. Then 11.9 g. (0.06 mole) of 4,7-dichloroquinoline was added and the mixture heated on a steam-bath for 2 hours. The mixture was cooled and ether added until precipitation of the crude product was complete. Recrystallized from methanol, the pure **2-diethylaminomethyl-4-(7-chloro-4-quinolyl)-aminofluorobenzene dihydrobromide**, m. p. 203.8° (dec.), weighed 19.0 g. (60%).

Anal. Calcd. for $C_{20}H_{21}N_3ClF\cdot 2HBr$: C, 46.2; H, 4.4; N, 8.1. Found: C, 46.1; H, 4.7; N, 7.9.

Acknowledgment.—These studies were aided by a contract between the Office of Naval Research, Department of the Navy, and the University of Kansas.

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DEPARTMENT OF CHEMISTRY
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RECEIVED AUGUST 21, 1950

New Derivative of Dinaphthylethane

BY M. SZWARC AND A. SHAW

Previous studies of the pyrolysis of toluene and its derivatives[1,2,3,4] have demonstrated that the initial decomposition of these compounds is represented by the equation

$$C_6H_5CH_3 \longrightarrow C_6H_5CH_2 + H\cdot$$

Benzyl radicals (or their derivatives) dimerize, and this process accounts for the presence of dibenzyl (or its derivatives) among the products of pyrolysis. We have found recently[5] that the pyrolysis of 1- and 2-methylnaphthalenes takes place according to the same scheme to yield 1,2-bis-(1-naphthyl)-ethane, m.p. 162–163°, reported[6] 162–163°, picrate m.p. 204–205°, reported[7] 205°, and 1,2-bis-(2-naphthyl)-ethane, m.p. 182–184°, reported[8] 182–183°, picrate m.p. 198°, reported[8] 198°, respectively.

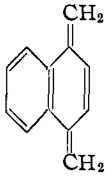
We find that the same scheme applies to the pyrolysis of 2,6-dimethylnaphthalene. The dimer was identified as 1,2-bis-(6-methyl-2-naphthyl)-ethane, m.p. 213–215°.

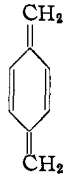
Anal. Calcd. for $C_{24}H_{22}$: C, 92.9; H, 7.1; mol. wt., 310. Found: C, 92.4; H, 6.95; mol. wt., 304.

Its picrate melts at 210°.

Anal. Calcd. for $C_{30}H_{25}O_7N_3$: N, 7.9. Found: N, 8.1.

It is interesting to note that the pyrolysis of 1,4-dimethylnaphthalene results in the formation of quinono-hydrocarbon (A),[9] which is a homolog of a similar compound (B) produced in the pyrolysis of *p*-xylene.[10]


A


B

One could expect that a similar compound would be produced in the pyrolysis of 2,6-dimethylnaphthalene, but that is not the case.

These pyrolyses have been carried out in a flow system essentially similar to that described previously by one of us.[1] The decomposition was investigated at temperatures of about 800°, pressures of the order of 5–10 mm., and times of contact of the order 0.5–1 sec. Due to the low volatility of these compounds it was necessary to heat electrically the tubes and taps composing this section of the apparatus, through which the compounds investigated were introduced into the reaction vessel. The dimers formed in the pyrolysis crystallized on the walls of a tube leading from the reaction vessel. This tube was maintained at a temperature of about 50° which was sufficiently high to prevent crystallization of the undecomposed methylnaphthalenes present in the gas phase. The dimers collected in the tube were subsequently dissolved in the appropriate solvents and purified by crystallization.

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CHEMISTRY DEPARTMENT
THE UNIVERSITY
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RECEIVED SEPTEMBER 18, 1950

Preparation and Purification of Potassium Ferrate. VI

BY G. W. THOMPSON,[1] L. T. OCKERMAN[2] AND J. M. SCHREYER

Numerous investigators[3,4,5] have reported wet methods for the preparation of solutions and impure crystalline samples of potassium ferrate(VI).

A procedure for the preparation of pure potassium ferrate(VI) has been reported by Schreyer.[6]

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[1] Richfield Oil Corp., Bakersfield Laboratory, Bakersfield, Calif.

[2] Deceased April 11, 1950.

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