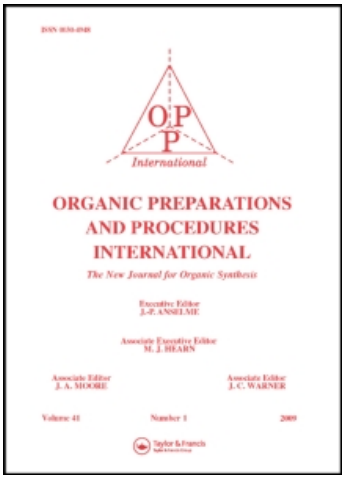

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2-BENZYLQUINOXALINE

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2-BENZYLQUINOXALINE

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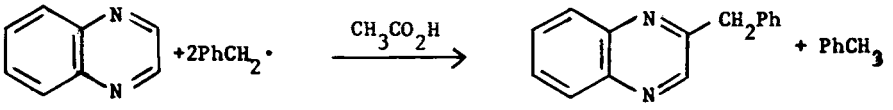
$$(PhCH_2)_2Hg \longrightarrow 2PhCH_2^{\bullet} + Hg^{o}$$



In a previous paper[1] we reported the effect of N-protonation on the homolytic benzylation of pyridine, quinoline and isoquinoline. In general, the total reactivities of the heterocyclic compounds are increased, and the proportions of isomeric benzylation products formed in acid solution are different from those obtained when an excess of the appropriate heterocyclic compound is used as the solvent. In an extension of this work, we have found that the homolytic benzylation of quinoxaline in acetic acid, using dibenzylmercury as the radical source,[1] gives 2-benzylquinoxaline only, and this reaction has been used as a convenient, one-step synthesis of 2-benzylquinoxaline.

EXPERIMENTAL

A solution of dibenzylmercury[2] (10g., 0.026 mole) and quinoxaline (104g., 0.8 mole) in glacial acetic acid (240g., 4.0 moles) was boiled under reflux for 12 hr. The solution was filtered to remove mercury and insoluble material, and the filtrate was made alkaline with 5N sodium hydroxide and extracted with ether (2 x 100 ml.). The ethereal

extract was dried (KOH) and the ether was removed by distillation. The residue was distilled under reduced pressure and 2-benzylquinoxaline was collected as a red oil, bp. 206-210°/12mm., lit.[3] 208-210°/12mm., which solidified on standing. The solid was crystallised from chloroform-petroleum ether to give 3.1g. (54%)[4] of 2-benzylquinoxaline as light red needles, mp. 39-40°, lit.[3] 38.5°. The picrate was obtained as greenish-yellow needles from ethanol, mp. 116°, lit.[5] 117°.

The purity of the product was confirmed by gas chromatography, using a column of 5% silicone elastomer E301 on Chromosorb W, temperature programmed between 75° and 280° at a programme rate of 7.5° per minute, and by infrared spectroscopy, using the melt between sodium chloride discs.

IR bands : 3.26, 3.30, 3.42, 6.20, 6.38, 6.68, 6.85, 7.08, 7.32, 7.70, 7.78, 8.30, 8.85, 8.95, 9.30, 10.14, 11.40, 13.10, 13.92μ (lit.[3] 3.26, 3.30, 3.42, 6.22, 6.39, 6.68, 6.86, 7.08, 7.32, 7.71, 7.78, 8.31, 8.88, 8.97, 9.32, 10.18, 11.45, 13.16, 14.01μ).

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