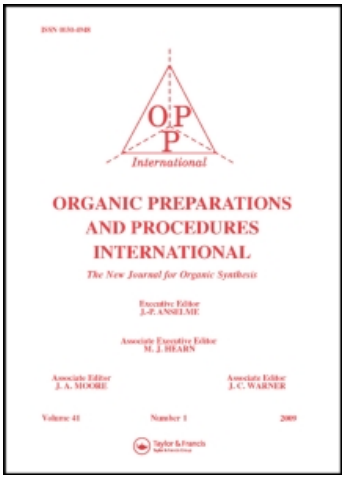

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N-METHYL OCTAHYDROCARBAZOLE

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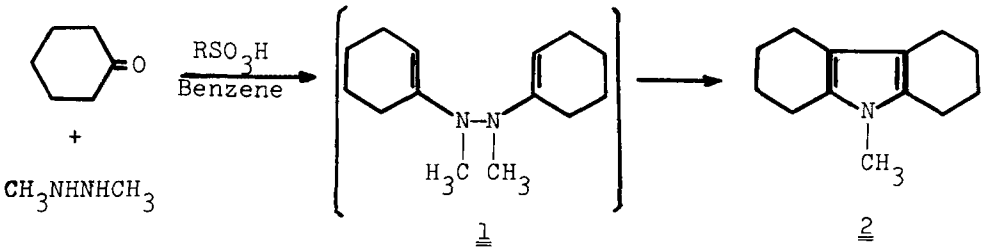

1 2

In an attempt to prepare the bis-enamine 1 from cyclohexanone and N,N'-dimethylhydrazine by the standard procedure of enamine synthesis,[1] N-methyl octahydrocarbazole (2) was obtained in 80% yield. The preparation of pyrroles from ketazines (Piloty pyrrole synthesis[2]), requires drastic conditions, e.g., either in the presence of $ZnCl_2$ at 220-230°[3] or with hydrogen chloride at 180°.[4] Apparently, the presence of two methyl groups in the starting hydrazine permits the reaction to proceed under much milder conditions. The N-ethyl analogue was prepared in a similar fashion.

EXPERIMENTAL

N-Methyl-1,2,3,4,5,6,7,8-octahydrocarbazole (2). A solution of 1.55 g (26 mmoles) of N,N'-dimethylhydrazine and 5.0 g (51 mmoles) of cyclohexanone in 10 ml of dry benzene is refluxed for 2 hrs. in the presence of 6 mg of p-toluenesulfonic acid. The benzene is removed in vacuo, and 5 ml of 2N sulfuric acid are added to the oily residue. The oil solidified and gave 3.95 g (80%) of crystals, m.p. 94° after recrystallization from alcohol-water, lit.,[5] 94.5°. The nmr spectrum showed signals at τ 6.75, 7.45-7.85, and 8.15-8.50 in the ratio of 3 : 8 : 8.

N-Ethyl-1,2,3,4,5,6,7,8-octahydrocarbazole. N,N'-Diethylhydrazine (3.2 g; 36 mmoles) and 7.15 g (73 mmoles) of cyclohexanone are dissolved in 15 ml of dry toluene and refluxed with 10 mg of p-toluenesulfonic acid for 3.5 hrs. Distillation of the reaction mixture gave a fraction boiling at 160-162°/11$_{mn}$ which solidified to yield 4.2 g (58%) of crystals, m.p. 42-43°, lit.,[6] 43°.

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