

Chemistry

## A CONVENIENT SYNTHESIS OF PHENOXAZINE

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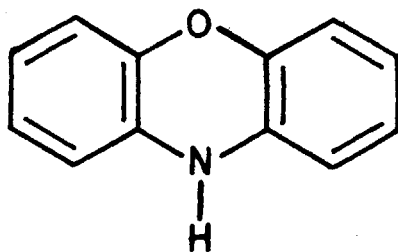
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(Received 23 March 1979; after revision 17 December 1979)

A convenient route for the synthesis of phenoxazine, an important dye intermediate and an antitubercular agent (clapp *et al.*, 1952) is reported.

### INTRODUCTION

SYNTHESIS of phenoxazine has been reported by earlier workers (Brady & Waller, 1930; Kehrmann & Saager, 1902, 1903). While investigating the reaction of diiodides/dibromides of heterocyclic tertiary bases in our laboratory, the authors were able to synthesise phenoxazine by condensation of O-aminophenol with the diiodides/dibromides of the heterocyclic tertiary bases (formed *in situ*). Overall yield reported by earlier workers was only 20-30 per cent whereas when methanol is used, it gave 40-45 per cent yield which is increased to 65 per cent in DMF. The role of diiodides of heterocyclic tertiary bases is not clear. An extension of this reaction to O-aminothiophenol and 1-amino 2-naphthol-sulphonic acid did not give any satisfactory results.



PHENOXAZINE ( I )

### EXPERIMENTAL

Iodine or bromine (0.1 mol) was dissolved in any of the heterocyclic tertiary base (viz. pyridine, quinoline, isoquinoline,  $\alpha$ -,  $\beta$ -,  $\gamma$ -picoline (0.1 mol). This solution was added to O-aminophenol (0.1 mol) present in DMF (50 ml.). The reaction mixture was heated under reflux on a water bath for 6 hrs and then allowed to cool. The product separated on cooling was filtered and washed well with hot water, methanol and ether successively and then dried. It was recrystallised twice from glacial acetic acid. It melted at 155 °C. Found : C, 78.3 per cent, H, 4.6 per cent, N, 7.4 per cent,  $C_{12}H_9NO$  requires C, 78.6 per cent, H, 4.9 per cent, N, 7.6 per cent. IR(KBr) :  $\nu_{max}$  3400(NH), 1160 (-C-O-C- cyclic). Benzo (5,6)-(1,4)-oxazino (2,3-a) phenoxazine was synthesised from the phenoxazine by the reported method (Khalifa,

1960). It sublimed at 263–4 °C (lit. 265 °C). 'Cotlc' with the authentic sample obtained by known methods gave same R<sub>f</sub> (0.40) in benzene : dioxane mixture (6:4).

#### ACKNOWLEDGEMENTS

Thanks are due to Professor R. C. Kapoor, Head of Chemistry Department, University of Jodhpur for providing necessary laboratory facilities and to the U.G.C., New Delhi for the award of Junior Research Fellowship to R. P. S.

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