Synthesis of 2,3-Dihydro-1*H*-phenothiazin-4(10*H*)-ones

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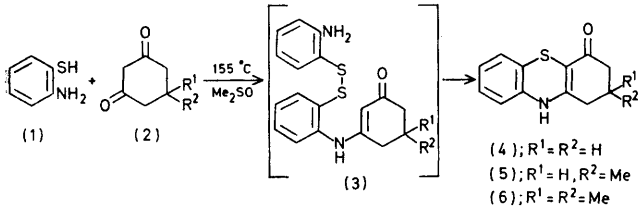
Summary 2,3-Dihydro-1*H*-phenothiazin-4(10*H*)-ones (**4**)—(**7**) were prepared by condensation of *o*-aminobenzenethiol (**1**) with cyclohexane-1,3-diones (**2**) in Me_2SO.

CURRENT interest[1] in the nucleophilic reactions of enamino-ketone groups prompts us to report a novel synthesis of the 2,3-dihydro-1*H*-phenothiazin-4(10*H*)-ones (**4**)—(**7**). The



dimethyl compound (**6**), for example, was prepared by heating a mixture of (**1**) (1·25 g) and dimedone (**2**; $R^1 = R^2$ =Me) (1·4 g) in Me_2SO (5 ml) at 155 °C for 0·5—1 h. The product (**6**), m.p. 262—263 °C (decomp.) (from MeOH), separated as orange plates on cooling. Compounds (**4**) (42% yield), (**5**) (66%), and (**7**) (77%) were prepared similarly.†

Since compound (**1**) is readily oxidized to bis-(*o*-aminophenyl) disulphide under the reaction conditions, and since we have shown that this disulphide also undergoes condensation with the diones (**2**) to give compounds (**4**)—(**7**), we suggest that the enamino-ketones (**3**) are intermediates in the reaction.

This one-step synthesis is more convenient than the two-stage synthesis which starts with *o*-nitrobenzenesulphenyl chloride and cyclohexane-1,3-diones.[2]

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† All products were adequately characterized by elemental analysis and spectroscopic methods.

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[2] V. I. Shvedov, L. B. Altukhova, V. M. Lyubchanskaya, and A. N. Grinev, *Khim. Geterotsikl. Soedin.*, 1972, 1901 (*Chem. Abs.*, 1973, **77**, 43395k).