ALKALOID SYNTHESIS THROUGH ELECTRON TRANSFER MEDIATED CYCLISATION OF O-HALOGENATED N-ACYLBENZYL AMINES.

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Irradiation of ortho halogenated N-acylbenzyl amines dissolved in liquid ammonia containing potassium amide affords 1,4-dihydro 3(2H) isoquinolones in good yields. The same cyclisation can be brought about by using LDA in THF. Since even substrates having a flanked halogen could be cyclised, this ring closure is not benzyne mediated and probably involves electron transfer followed by halide ion expulsion.

Synthetic value of this reaction is demonstrated through convenient approaches to alkaloids like cherylline and corynoline. Attempted extension to 7-membered ring structures led to undole derivatives. Indoles could also be obtained by cyclisation of appropriate amine derived anions.