

## Synthesis of 6*H*,11*H*-Pyrrolo[1,2-*b*][2,5]benzodiazocine: a New Nitrogen Heterocyclic System

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**Summary** Vilsmeier–Haack formylation of 1-(2-acetamidomethylbenzyl)pyrrole, followed by alkaline hydrolysis, afforded directly 6*H*,11*H*-pyrrolo[1,2-*b*][2,5]benzodiazocine.

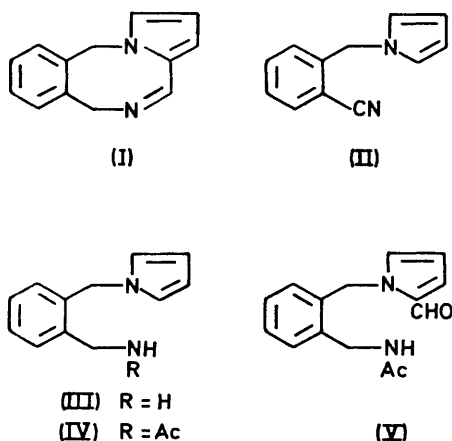
In continuation of studies<sup>1</sup> on the synthesis of new heterocyclic systems potentially useful as starting materials for

derivatives of pharmaceutical significance, we describe the preparation of a previously unreported ring system 6*H*,11*H*-pyrrolo[1,2-*b*][2,5]benzodiazocine (I). 1-(2-Cyano-benzyl)pyrrole (II), m.p. 43–44° (petrol), was formed in 75% yield by reaction of *o*-bromomethylbenzonitrile with pyrrole potassium salt in tetrahydrofuran. Lithium aluminium hydride reduction of (II) in anhydrous ether gave oily 1-(2-aminomethylbenzyl)pyrrole (III), which was characterized as its picrate, m.p. 168–169° (water). On treatment with cold acetic anhydride the compound (III) was easily transformed into 1-(2-acetamidomethylbenzyl)pyrrole (IV), m.p. 99–100° (water), which was then formylated by the Vilsmeier–Haack method at room temperature giving 1-(2-acetamidomethylbenzyl)pyrrole-2-carboxaldehyde (V), m.p. 95–96° (cyclohexane).

Alkaline hydrolysis of (V) afforded directly 6*H*,11*H*-pyrrolo[1,2-*b*][2,5]benzodiazocine (I), m.p. 290–291° (ethyl acetate).

All the compounds gave satisfactory elemental analyses and spectral data.

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<sup>1</sup> M. Artico, G. De Martino, R. Giuliano, S. Massa, and G. C. Porretta, *Chem. Comm.*, 1969, 671; M. Artico, G. C. Porretta, and G. De Martino, *J. Heterocycl. Chem.*, 1971, 8, 283; M. Artico and S. Vomero, *Ann. Chim. (Italy)*, 1969, 59, 81.