

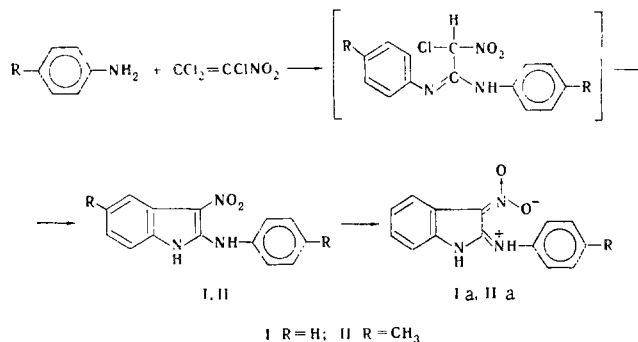
# SYNTHESIS OF 3-NITRO-2-AMINOINDOLE DERIVATIVES

V. A. Buevich, V. V. Rudchenko,  
and V. V. Perekalin

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The reaction of 1,1-dichloro-2-nitroethylene with aromatic amines leads to N,N'-diaryl-2-nitroacetamidine derivatives [1]. The analogous reaction of trichloronitroethylene, as a result of more profound conversion, ends with the formation of 3-nitro-2-arylaminindole derivatives.

The reaction mechanism stipulates the formation of an N,N'-diaryl-2-chloro-2-nitroacetamidine derivative, which, as a result of splitting out of the elements of hydrogen chloride in an alkaline media, is cyclized to the indole derivative (I, II). The presence in the UV spectrum of a high-intensity maximum at 360 nm indicates that these compounds exist in the form of inner salts Ia, IIa.



## EXPERIMENTAL

A 1.76-g (0.01 mole) sample of trichloronitroethylene was added dropwise with stirring at 5–10° in the course of 30 min to a solution of 0.02 mole of the aromatic primary amine in 20 ml of absolute ether, and the mixture was held at the same temperature for 30 min. It was then poured, along with the resulting precipitate, into cold water, and the solid material was removed by filtration, washed with water, and dissolved in 20–30 ml of ethanol. When the solution was heated it turned dark-green, and a precipitate began to form from it after a few minutes. The mixture was cooled, and the precipitate was removed by filtration to give 1.9 g (89%) of yellow crystals of 3-nitro-2-anilinoindole (I) with mp 272–273° (from methanol). UV spectrum (of a methanol solution; because of the low solubility of the compound, the spectral recording is only qualitative),  $\lambda_{\max}$ : 227, 255, and 360 nm. 5-Methyl-3-nitro-2-(p-toluidino)indole (II) [1.86 g (76%)] was obtained as yellow crystals with mp 270–271° (from alcohol). UV spectrum (methanol, qualitative recording),  $\lambda_{\max}$ : 230, 260, and 362 nm.

The results of complete elementary analysis of I and II were in good agreement with the calculated values.

## LITERATURE CITED

1. V. A. Buevich, V. V. Rudchenko, and V. V. Perekalin, *Zh. Org. Khim.*, **12**, 907 (1976).

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