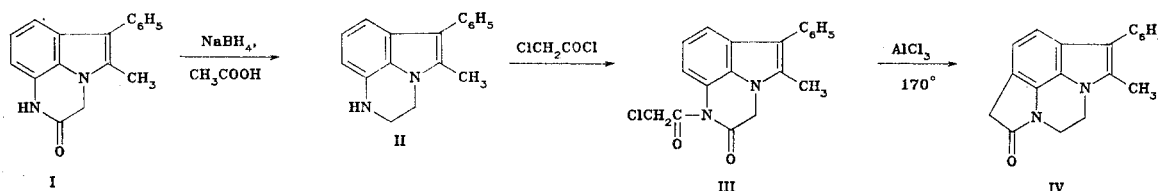


SYNTHESIS OF A DERIVATIVE OF DIPYRROLO[1,2-a:2',1'-c]QUINOXALINE,  
A REPRESENTATIVE OF A NEW HETEROCYCLIC SYSTEM

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A representative of a new condensed heterocyclic system, 4,5,7,8-tetrahydro-7-oxo-1-phenyl-2-methylpyrrolo[1,2-a:2',1'-c]quinoxaline (IV), has been synthesized by the Stolle method from N-chloroacetyl-2,3-dihydro-6-phenyl-5-methylpyrazino[3,2,1-hi]indole (III). The reaction was carried out in the presence of anhydrous aluminum chloride, in the absence of a solvent, for 3 h at 130–170°C, to give a yield of 15%, mp 218–220°C (from ethyl acetate). IR spectrum (in vaseline oil): 1690  $\text{cm}^{-1}$  (CO). UV spectrum (in alcohol),  $\lambda_{\text{max}}$  (log  $\epsilon$ ): 208 (4.52), 234 (4.53), 280 (4.06), 300 nm (4.11).



The overall reaction sequence involved reduction of 2,3-dihydro-2-oxo-6-phenyl-5-methylpyrazino[3,2,1-hi]indole (I) [1] with sodium borohydride in acetic acid–dioxane. 2,3-Dihydro-6-phenyl-5-methylpyrazino[3,2,1-hi]indole (II) was obtained in 95% yield, mp 121–123°C (from alcohol). IR spectrum (in Vaseline oil): 3200  $\text{cm}^{-1}$  (NH). UV spectrum (in alcohol),  $\lambda_{\text{max}}$  (log  $\epsilon$ ): 235 (4.54), 215 (4.41), 305 nm (4.19). Subsequent acylation of (II) with chloroacetyl chloride gave 2,3-dihydro-4-chloroacetyl-6-phenyl-5-methylpyrazino[3,2,1-hi]indole (III). Yield, 80%, mp 153–154°C (from benzene). IR spectrum (in Vaseline oil): 1665, 1690  $\text{cm}^{-1}$  (CO). UV spectrum (in alcohol),  $\lambda_{\text{max}}$  (log  $\epsilon$ ): 206 (4.44), 220 (4.44), 260 (4.34), 310 nm (4.00).

Elemental analyses for C, H, and N, and the molecular mass (mass spectrometry) of these compounds agreed with the calculated values.

LITERATURE CITED

1. A. N. Grinev, Yu. I. Trofimkin, E. V. Lomanova, N. I. Andreeva, and M. D. Mashkovskii, *Khim.-farm. Zh.*, No. 7, 80 (1978).