# SYNTHESIS OF IMIDAZO[1,2-*a*]PERIMIDINE DERIVATIVES

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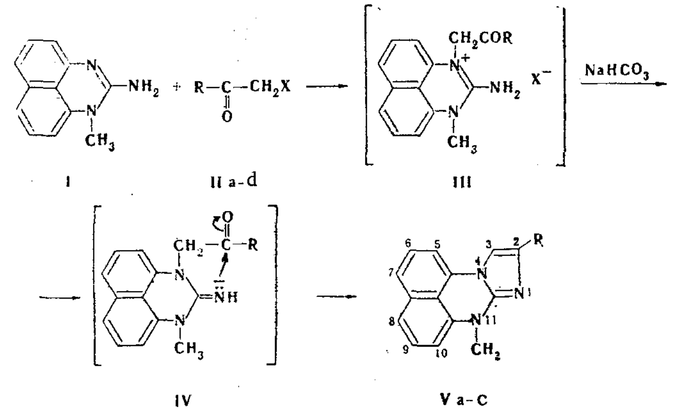
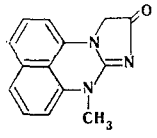
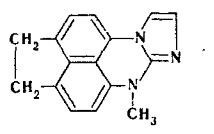
Derivatives of a new heterocyclic system – imidazo[1,2-*a*]perimidine (V) – were obtained by reaction of 2-amino derivatives of perimidine and aceperimidine with α-halo ketones, α-halo aldehydes, and α-halo esters in the presence of sodium carbonate under very mild conditions (heating of aqueous alcohol solutions on a water bath for 1-3 h).





VI



VII

II-V a R=H; b R=CH$_3$; c R=C$_6$H$_5$
II d R=OC$_2$H$_5$
X=Cl, Br, I

The reaction apparently proceeds through a step involving the formation of salt III and imine IV; however, these intermediates are distinguished by high instability and cannot be isolated even when the pro-

TABLE 1. Compounds of the Imidazo[1,2-*a*]perimidine Series

| Compound | mp, °C (crystallization solvent)* | Empirical formula | Found, % |  |  | Calc., % |  |  | Yield, % |
|---|---|---|---|---|---|---|---|---|---|
|  |  |  | C | H | N | C | H | N |  |
| Va | 159 (dec.,alcohol) | $C_{14}H_{11}N_3$ | 76,2 | 4,9 | 19,0 | 76,0 | 5,0 | 19,0 | 91 |
| Vb | 153—154 benzene) | $C_{15}H_{13}N_3$ | 76,6 | 5,7 | 18,1 | 76,6 | 5,6 | 17,8 | 73 |
| Vc | 141—142 (aqueous alcohol) | $C_{20}H_{15}N_3$ | 80,7 | 5,3 | 14,1 | 80,8 | 5,1 | 14,1 | 92 |
| VI | 260 (dec., DMFA) | $C_{14}H_{11}N_3O$ | 70,7 | 4,5 | 18,0 | 70,9 | 4,7 | 17,7 | 96 |
| VII | 183 (dec., alcohol) | $C_{16}H_{13}N_3$ | 77,6 | 5,5 | 16,9 | 77,7 | 5,3 | 17,0 | 90 |

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*All of the compounds obtained, except oxo derivative VI, can also be purified by chromatography on aluminum oxide with elution by chloroform (R*f* 0.9-0.93).

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cess is carried out in neutral media. In the absence of sodium carbonate, the role of the base necessary for conversion of salt III to imine IV is played by the starting amine. As a result, ~50% of the amine is regenerated in the form of the hydrohalide. The absorption bands characteristic for NH and CO groups are absent in the IR spectra of Va-c and VII, whereas a number of bands due to vibrations of C=C and C=N bonds are present at 1580-1640 $cm^{-1}$.

Fusion of amine I with methyl chloroacetate at 125° for 10 min immediately gave oxo derivative VI, in the IR spectrum of which the stretching vibrations of the CO group appear at 1720 $cm^{-1}$.