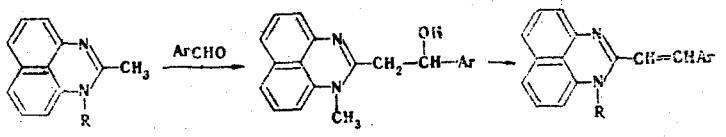
2-STYRYLPERIMIDINES

V. A. Anisimova and A. F. Pozharskii

UDC 547.856.7

We have established that 2-methylperimidines readily react with aromatic aldehydes at 100-190°C in the absence of a solvent or catalyst, forming deeply colored 2-styrylperimidines (III) with yields of about 95%.



I a,b

Ia R=H,
Ib R=CH_3;

II a, b

IIa Ar=$-C_6H_4NO_2$-*p*,
IIb Ar=5-nitrofuryl

III a–d

IIIa R=H, Ar=C_6H_5;
b R=CH_3, Ar=C_6H_5;
c R=CH_3, Ar=$-C_6H_4NO_2$-*p*;
d R=CH_3, Ar=5-nitrofuryl

In the case of aldehydes with electron-accepting substituents (p-nitrobenzaldehyde, 5-nitrofurfural), at a lower temperature it is possible to isolate the carbinols (II) formed as intermediates, and on being heated to a higher temperature these decompose with the formation of the 2-styrylperimidines.

The structure of the compounds obtained (Table 1) was shown by elementary analyses, IR spectra, and the independent synthesis of substances (IIIa) and (IIIb) starting from the corresponding naphthalenediamine and cinnamoyl chloride.

TABLE 1. Characteristics of the Compounds Obtained

Compound	Mp, °C	Solvent for crystallization	Color	Yield, %	Conditions of fusion
IIa	193	DMFA	Dark yellow	95	120°, 5 min
IIb	100 (decomp.)	*	Brown	60	60°, 5 min
IIIa	136	Petroleum ether	Claret	70	150°, 2 h
IIIb	124—125	Petroleum ether	Claret	95	150°, 5 h
IIIc	195	Benzene—petroleum ether	Dark claret	94	190—195°, 30 min
IIId	202—203	Benzene	Dark violet	50—75	100°, 10 min †

*It was impossible to select a solvent.

† The reaction takes place better in acetic anhydride.

Rostov State University. Scientific-Research Institute of Physical and Organic Chemistry, Rostov-on-Don. Translated from Khimiya Geterotsiklicheskikh Soedinenii, No. 1, pp. 137-138, January, 1974. Original article submitted June 18, 1973.