379 (30), 308 (6.0), 244 nm (11.0)], as well as emission spectra [$\lambda_{max}^{fluoresc.}$ 415-416 nm (toluene)]. IR spectrum: 1596-1598 (C=N), and 1664-1670 cm^{-1} (C=O).

The composition of the samples was confirmed by elemental analysis.

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REACTION OF DIENDIAMINODIKETONES WITH NUCLEOPHILIC REAGENTS. SYNTHESIS OF 2-PYRIDONE AND 2-PYRIDINETHIONE DERIVATIVES

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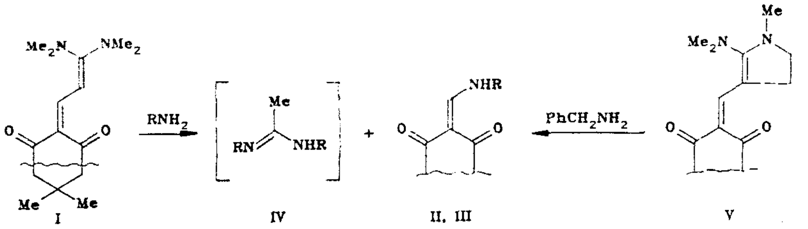
UDC 547.333'554'572.6'823.07

Enamines react readily with primary amines to give peramination products [1]. In experiments dealing with this type of reactinn for benzylamine and aniline with diendiaminoketone I [2], we have found, unexpectedly, that the process is accompanied by cleavage of the β,γ-carbon—carbon bond, resulting in the formation of the known compounds, N-substituted aminomethylene-dimedones II and III [3, 4]. For the reaction with benzylamine, it was established that the mother liquor contained, in addition, a compound of molecular weight 238 (mass spectrum), which would appear to be a secondary product arising from cleavage of the C—C bond, namely, N,N-dibenzylacetamide (IV). Reaction of the five-membered analog of compound I (V) with benzylamine proceeded similarly and gave enamine II.



II R=Ph; III,IV R=CH_2Ph;

In continuation of these results, we have examined the reactions of diendiaminodiketone (I) with compounds containing an active methylene group, such as cyanacetamide (VI) and cyanthioacetamide (VII). Reaction of compounds I and VI gave 6-dimethylamino-3-cyano-2-pyridone (VIII) [yield 43%, mp 282-283°C (from ethanol), $M^{+\cdot}$ 163], which was identical to an authentic sample prepared by an independent method [5]. Dimedone (IX) was detected in the mother liquor by mass spectroscopy ($M^{+\cdot}$ 140), along with 3-dimethylamino-5,5-dimethylcyclohexen-2-one (X), ($M^{+\cdot}$ 167). In an analogous manner, reaction of compounds I and VII gave 6-dimethylamino-3-cyano-2-pyridinethione (XI) [yield 76%, mp 206-209°C (from ethanol). Mass spectrum, m/e: 179 (M^+), 164, 150, 135].

Reaction of diendiaminodiketone I with compounds VI and VII has been shown to occur with cleavage of the γ,δ-bond and can be postulated in the following manner:

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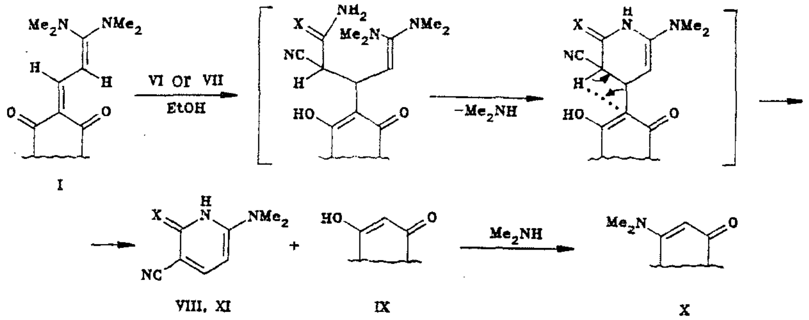

VIII X=O; XI X=S

Elemental analyses of compounds VIII and XI were consistent with calculated values.

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2-IMINO-cis-PERHYDROTHIENO[3,4-d]THIAZOLE-5,5-DIOXIDES

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It has previously been demonstrated that 4-amino-2-thiolene-1,1-dioxides react with aryl(alkyl)isothiocyanates at 70-110°C, or with thiophosgene and amines at 20-30°C, to give thioureas, which undergo cyclization in the presence of amines to give cis-perhydrothieno[3,4-d]imidazole-2-thione-5,5-dioxides [1].

We have now found that reaction with benzoylisothiocyanate occurs in a different manner. In the case of sulfone Ia, which is substituted on the nitrogen atom, the reaction stops at the thiourea stage II. Subsequent basic hydrolysis (refluxing with potash in a 2:1 water–dioxane mixture) leads to the formation of a bicycle with an imidazolidine fragment, III. Acidic hydrolysis of thiourea II (refluxing in concentrated HCl) results in an isomeric compound belonging to a new series of compounds, namely, 1-phenyl-2-imino-cis-perhydrothieno[3,4-d]thiazole-5,5-dioxide, which was isolated in the form of its hydrochloride IVa. Compounds belonging to this series are interesting as potential antihypertensive agents [2].

In contrast to the N-substituted sulfone Ia, amine Ib reacts with benzoylisothiocyanate to give the bicyclic thiazolidine IVb immediately; the latter reacts with hydrochloric acid to form the unsubstituted (with respect to nitrogen) hydrochloride IVc.

Products: III [yield 62%; mp 277°C (from dioxane); IR spectrum (KBr): 3160, 1505, 1310, 1110 cm^{-1}; ^{13}C-NMR spectrum (CF_3COOD): 52.6 t, 56.6 t, 59.0 d, 67.1 d, 129.6 d, 133.7 d, 134.7 s, 173.1 ppm]; IVa [yield 61%, mp 208°C (from aqueous alcohol); IR spectrum (KBr): 3310, 1640, 1320, 1120 cm^{-1}; ^{13}C-NMR spectrum (CF_3COOD): 43.9 d, 54.2 t, 58.6 t, 72.3 d, 130.5 d, 135.6 d, 135.8 s, 136.0 d, 175.8 ppm]; IVb [yield 90%; mp 226°C (from alcohol);

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