NEW REACTIONS OF N-HETEROAROMATIC CATIONS WITH ANIONIC σ COMPLEXES

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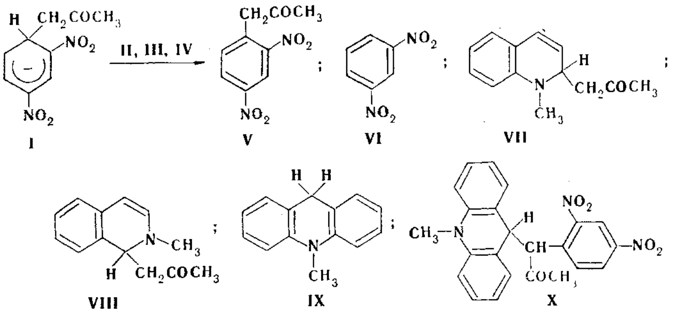
We have found that anionic σ complexes, like their electronic analogs dihydroheteroaromatic compounds [1, 2], are capable of undergoing aromatization under the influence of heteroaromatic cations not only as a result of the loss of a labile hydrogen atom (as a hydride ion) but also as a result of splitting out the substituent attached to it in the geminal node with simultaneous ionic hydrogenation or nucleophilic alkylation of the heteroaromatic cation. In some cases heteroaromatic cations add to the σ complexes or to their aromatization products. Thus, in particular, the following products were isolated, in addition to 2,4-dinitrophenylacetone (V), in the reaction of the Janovsky complex (I) with quinoline (II), isoquinoline (III), and acridine (IV) methiodides: alkylation products 1-methyl-2-acetonyl-1,2-dihydroquinoline (VII) and 2-methyl-1-acetonyl-1,2-dihydroisoquinoline (VIII), ionic hydrogenation product 1-methyl-9,10-dihydroacridinium ion (IX), and addition products 1-methyl-9-[α-(2,4-dinitrophenyl)acetonyl]-9,10-dihydroacridine (X) and 1,3-dinitrobenzene (VI). The V-IX obtained in this way were identical to authentic samples. Compound X had mp 167°C (from alcohol) and λ_{max} at 213, 252, 260, and 356 nm and was obtained in 42% yield. The mass-spectral fragmentation confirmed the structure presented below, and the results of elementary analysis were in agreement with the calculated values.



LITERATURE CITED

1. A. K. Sheinkman, A. N. Tokarev, and A. N. Prilepskaya, Khim. Geterotsikl. Soedin., No. 4, 529 (1972).
2. A. K. Sheinkman, Z. M. Skorobogatova, and L. V. Luk'yanenko, Khim. Geterotsikl. Soedin., No. 3, 367 (1982).

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