

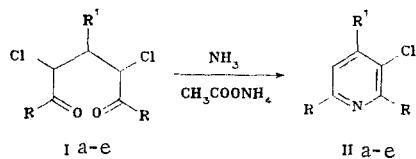
SYNTHESIS OF β -CHLOROPYRIDINES

V. G. Kharchenko, V. K. Promonenkov,
S. N. Chalaya, and S. N. Lisina

UDC 547.822.5

The reaction of acyclic 1,5-diketones with ammonia yields dihydropyridines. The reaction of chlorine-substituted 1,5-diketones with nitrogen-containing reagents has not been reported in the literature.

We have discovered that α, α' -dichlorosubstituted 1,5-diketones Ia and Ib react with ammonia in ether or ethanol at room temperature to form the corresponding β -chloropyridines [IIa with mp 153–154°C (from ethanol) and IIb with mp 112–113°C (from ethanol)] instead of the possible products of the replacement of the halogen atom by an amino group.



I, II a R=R'=C₆H₅; b R=C₆H₅, R'=CH₃; c R=C₆H₅, R'=C₆H₄—OCH₃—p; d R=C₆H₄—OCH₃—p, R'=C₆H₅; e R=R'=C₆H₄—OCH₃—p

Analogous compounds arise in the heterocyclization of 1,5-diketones Ia–e with ammonium acetate under conditions of the Chichibabin reaction. In this case, the reaction is carried out in acetic acid at 60–80°C. The yields of the β -chloropyridines are 80–90% [IIc with mp 150–152°C (from ethanol), IId with mp 142–144°C (from ethanol), and IIe with mp 158–159°C (from ethanol)]. The IR spectra of IIa–e have bands for the pyridine ring C=C bonds at 1540–1545 cm^{–1}. The elemental analysis of these compounds were in accord with the calculated values.

N. G. Chernyshevskii Saratov State University. Saratov 410028. Translated from Khimiya Geterotsiklicheskikh Soedinenii, No. 12, pp. 1691–1692, December, 1983. Original article submitted April 27, 1983.