

LETTERS TO THE EDITOR

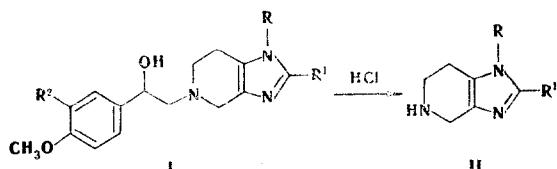
NEW INSTANCE OF THE CLEAVAGE OF A TERMINAL C—N BOND IN NITROGEN HETEROCYCLES

Yu. M. Yutilov and O. G. Eilazyan

UDC 547.834.2:542.938

We have shown that the products of the reduction of 5-phenacylimidazo[4,5-c]pyridinium salts, *viz.*, 5-(8-hydroxy- β -phenethyl)-4,5,6,7-tetrahydroimidazo[4,5-c]pyridines (Ia-d), which contain 4-methoxy and 3,4-dimethoxy groups in the phenyl ring, readily undergo cleavage upon heating to the boiling point with hydrochloric acid in aqueous alcohol solution; cleavage takes place at the terminal C—N bond to give 1- and 1,2-substituted derivatives of 4,5,6,7-tetrahydroimidazo[4,5-c]pyridines (spinaceamine), which is detected in living organisms [1].

Compounds of the I type that do not have a methoxy substituent in the phenyl ring do not undergo cleavage under the described conditions.



I a R=CH₃, R¹=H, R²=OCH₃; b R=CH₃, R¹=H, R²=H; c R=Ph, R¹=H, R²=H; d R=CH₃, R¹=CH₃, R²=H

The structure of IIa was confirmed by data from the IR and PMR spectra and also by conversion to the 1,5-dimethyl derivative, which was previously obtained by reduction of 1,5-dimethylimidazopyridinium iodide with sodium borohydride.

The following compounds were obtained [yields in percent and melting points in degrees centigrade (solvents) given]: Ia, 72, 171-172 (benzene-hexane); Ib, 86, 125-127 (dioxane); Ic, 68, 148-150 (isopropyl alcohol); Id, 75, 144-146 (isopropyl alcohol); IIa (dihydrochloride), 92, 227-228 (methanol); IIc (dipicrate), 69, 180-182 (alcohol); IId (dichloride) [sic]; 82, 252-254 (methanol).

The results of elementary analysis of I and II were in agreement with the calculated values.

LITERATURE CITED

1. V. Erpamer, T. Vitali, M. Roseghini, and J. M. Cei, *Experientia*, 19, 346 (1963).

Institute of Physical Organic Chemistry and Coal Chemistry, Academy of Sciences of the Ukrainian SSR, Donetsk 340114. Translated from *Khimiya Geterotsiklicheskikh Soedinenii*, No. 8, p. 1134, August, 1983. Original article submitted December 8, 1982; revision submitted March 23, 1983.