CROATICA CHEMICA ACTA CCACAA 48 (3) 317—318 (1976)

YU ISSN 0011-1643
547.841
CCA-938
Note

Reductions of 1,4-Dimethyl-2-methylamino Quinolinium Iodide

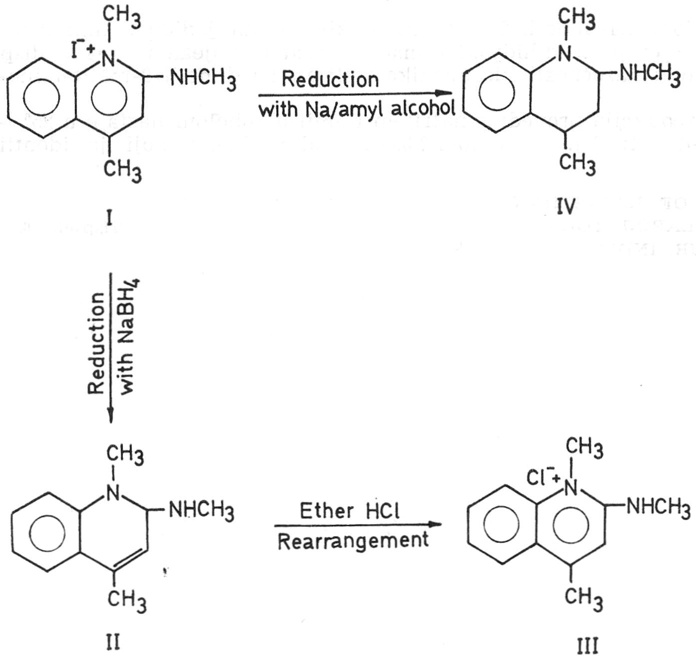
N. D. Sharma, V. K. Goyal and B. C. Joshi

Chemical Laboratories, University of Rajasthan, Jaipur, India

Received February 6, 1975

The reduction of 1,4-dimethyl-2-methylamino-quinolinium iodide (I) with sodium borhydride gave a product II, ethereal-HCl treatment of which resulted in a product identified as 1,4-dimethyl-2-*N*-methylamino-quinolinium chloride (III). Reduction of 1 with sodium/amylalcohol, gave IV 1,4-dimethyl-2-*N*-methylamino-1,2,3,4-tetrahydroquinolin (IV). The structures were assigned on the basis of NMR spectra.

1,4-Dimethyl-2*N*-methylaminoquinolinium iodide (I)[1,2] was reduced with reducing agents like sodium borhydride and sodium/amylalcohol. The treatment of I with sodium borhydride gave an unstable yellow liquid II almost in quantitative yield, the colour of which changed on keeping for sometime. II might have the structure as 1,4-dimethyl-2-*N*-methylamino-1,2-dihydroquinoline disproportioning to the corresponding quinoliniumchloride III ($C_{12}H_{15}N_2Cl$) in etheral-HCl[3]. From the NMR spectrum of II. HCl (almost superimposable



with I), the structure to this compound was assigned as 1,4-dimethyl-2-*N*-methyl-aminoquinolinium chloride, [Chemical shifts in NMR spectrum of II. HCl: δ 2.42—3H, (S); δ 2.90—3H, (S); δ 3.60—3H, (S); δ 6.65—7.8—(6H)].
The reduction of I with Na/amylalcohol[4] resulted in a red brwon oil IV in 25% yield. IV in etheral—HCl gave hydrochloride $C_{12}H_{18}N_2 \cdot II\,HCl$. On the basis of the NMR spectrum (recorded in D_2O using TMS as internal reference standard) the structure to IV. HCl was assigned as 1,4-dimethyl-2-*N*-methylamino-1,2,3,4-tetrahydroquinolinium chloride, [Chemical shifts in NMR spectrum of III. HCl: δ 3.20—3H (s), NH—CH_3; δ 3.45—3H (s), N—CH_3; δ 1.20—3H (d), C—CH_3; δ 2.20—3.10 (4H), protons at positions 2, 3, and 4; δ 7.15—7.60 (4 ArH)]. The proton attached to nitrogen was not detectable as it might have been replaced by D_2O (a sharp big signal at δ 4.75, the usual position of the chemical shifts of —NH proton).

Acknowledgement. The authors are thankful to Dr. Nityanand, Director C.D.R.I., Lucknow and Head, Chemistry Department, University of Rajasthan, Jaipur for providing necessary facilities. One of the authors (NDS) is also thankful to U.G.C. for providing fellowship.

REFERENCES

1. Masujiro Katayanegi, *J. Pharm. Soc., Japan* **69** (1949) 137—40.
2. P. K. Khandelwal, *Ph. D. Thesis,* University of Rajasthan, Jaipur (India), 1972.
3. B. D. Tilak and K. N. Subbaswami, *Ind. J. Chem.* **7** (1969) 419.
4. Bamberger and Longfeld, *Ber.* **23** (1890) 1138.

SAŽETAK

Redukcije 1,4-dimetil-2-metilamino kinolinium jodida

N. D. Sharma, V. K. Goyal i B. C. Joshi

Redukcijom 1,4-dimetil-2-metilamino kinolinium jodida s natrijevim borhidridom nastaje vjerojatno dihidrokinolinski derivat iz kojega je nakon disproporcioniranja u eteru u nazočnosti klorovodika izoliran 1,4-dimetil-2-metilamino-kinolinium klorid.

Ako se redukcija provede s natrijem i amil-alkoholom nastaje u 25%-tnom iskorištenju 1,4-dimetil-2-metilamino-1,2,3,4-tetrahidrokinolin koji je identificiran kao hidroklorid.

UNIVERSITY OF RAJASTHAN
CHEMICAL LABORATORIES
JAIPUR, INDIA

Prispjelo 6. veljače 1975.