

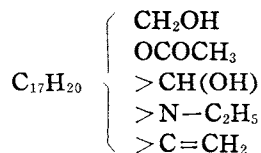
*Some Kinds of Reaction Behavior of
Lucidusculine*

By Takashi AMIYA

(Received July 18, 1957)

Some reactions concerning lucidusculine¹⁾ (I), an alkaloid from *Aconitum lucidusculum* Nakai, have been investigated in this Laboratory. The methods are here communicated. Oxidation of I by 3% hydrogen peroxide gave lucidusculine N-oxide (II) d. p. 191°C (Found: C, 65.94; H, 8.37; H₂O, 3.31. Calcd. for C₂₄H₃₅O₅N·H₂O: C, 66.18; H, 8.56; H₂O, 4.13%). Also oxidation of I by perbenzoic acid yielded a compound (III), d. p. 200°C, [α]_D²⁵ -101° (CH₃OH) (Found: C, 65.30; H, 8.53%), identical (analysis, d. p. and methods of formation) with compound II. Reduction of III with zinc and hydrochloric acid regenerated substance I. Compound III afforded anhydrous compound (IV), when reserved in a desiccator, d. p. 205°C (Found: C, 69.32; H, 8.27. Calcd. for C₂₄H₃₅O₅N: C, 69.03; H, 8.45). Dehydration of III with 1% potassium chromate gave dehydro-lucidusculine (V), m. p. 173–175°C (Found: C, 72.38; H, 8.75. Calcd. for C₂₄H₃₃O₄N: C, 72.15; H, 8.33%). Oxidation of I with N-bromosuccinimide gave a compound (VI), m. p. 175–180°C (Found: C, 71.51; H, 8.41%), identical (analysis and mixed m. p.) with compound V. Bromination of I with bromine in methanol gave bromoanhydro-lucidusculine (VII), d. p. 210°C (Found: C, 50.02; H, 6.74; Br, 29.70; H₂O, 5.5. Calcd. for C₂₄H₃₂O₃NBr·HBr·2H₂O: C, 49.73; H, 6.43; Br, 27.57; H₂O, 6.2%). The u. v. absorption of compound VII showed no λ max. at wavelengths 210–340 m μ . Oxidation of I with chromic anhydride in pyridine gave monocarboxylic acid (VIII), which showed neither definite m. p. nor definite d. p. (Found: C, 54.22, 54.60; H, 7.88, 7.69; N, 3.05. Calcd. for C₂₄H₃₁O₅N·6H₂O: C, 55.26; H, 8.31; N, 2.68%). In the infrared region the compound VIII showed a strong absorption near 5.85 μ , indicating the presence of the keto group. Methylation of VIII with diazomethan gave methyl ester (IX), which showed neither definite m. p. nor definite d. p. (Found: C, 57.01; H, 7.70. Calcd. for C₂₅H₃₃O₅N·5H₂O: C, 58.00; H, 8.37%). Because of its low yield and difficult purification, the analysis of IX led to only

an approximate agreement. Since the presence of the terminal methylene group has already been confirmed²⁾ in I, the partformula of I may be tentatively summarized as,



Further work is in progress and will be published later. The author is grateful to Professor Harusada Sugimoto, President of Hokkaido University, for his unfailing kindness in encouraging this work, and to Professor Shinichiro Fujise, Tohoku University, for his kindness in making the material available.

*Department of Chemistry, Faculty
of Science, Hokkaido University
Sapporo*

2) T. Amiya and T. Shima, read before the 7th Annual Meeting of the Chemical Society of Japan held in Tokyo, April, 1954.

1) R. H. F. Manske and H. L. Holmes, "The Alkaloids", Vol. IV, Academic Press Inc., New York, (1954), p. 287.