U.D.C. 547.837.1 : 582.675.4

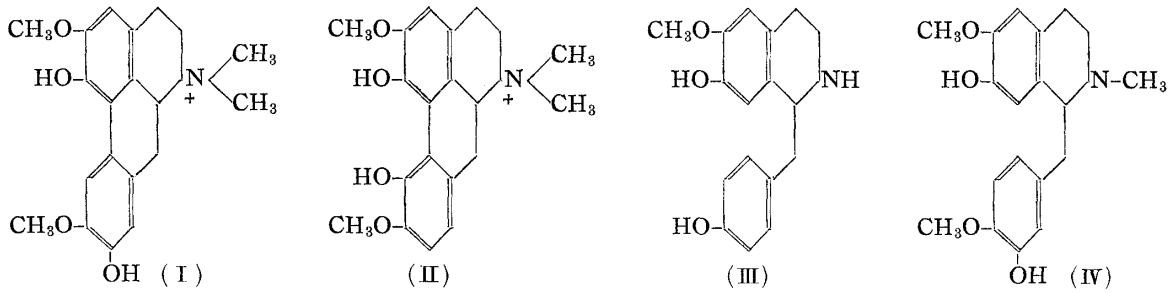
Tatsuhiko Nakano and Mikio Uchiyama : Studies on the Alkaloids of Menispermaceous Plants. CXXXVIII.[1] Alkaloids of *Cocculus laurifolius* DC. (Suppl. 9).[2] Isolation of Magnoflorine.*

(*Pharmaceutical Institute, Medical Faculty, University of Kyoto***)

At an earlier date, Tomita and Kusuda[3] recorded the isolation of quaternary alkaloids, laurifoline (I) and a base (picrate, m.p. 88°), from *Cocculus laurifolius* DC. At that time, they obtained, after separating laurifoline as the crystalline chloride, the remaining uncrystallizable alkaloid as the mercuric salt, but left it unexamined. This investigation has been resumed using the material which was left by them.

Decomposition of this mercuric chloride of the quaternary base with hydrogen sulfide and subsequent conversion of the resulting chloride into the styphnate yielded yellow needles, m.p. 230~231°(decomp.). The iodide also crystallized in colorless pillars, m.p. 249°(decomp.). Their molecular formulae and melting points were found to be in accord with those given for the corresponding derivatives of magnoflorine[4](II), and this similarity was also confirmed by infrared spectra.

Since it was known so far that *Cocculus laurifolius* DC. contains coclaurine (III) and coclanoline (IV), besides laurifoline (I), this proof as to the occurrence of magnoflorine (II) in the same plant is of significance in considering the biogenesis of these series of alkaloids.



We wish to express our appreciation to Prof. M. Tomita for his interest in this work, and to Messrs. Y. Matsui and M. Narisada of the Research Laboratory, Shionogi & Co. Ltd., for the measurement of the infrared spectra. The expenses of this investigation have been partly defrayed by a Grant in Aid of Fundamental Scientific Research from the Ministry of Education.

Experimental[5]

Isolation of Magnoflorine from *Cocculus laurifolius* DC.—2.0 g. of the quaternary base mercuric chloride was dissolved in MeOH and decomposed with H_2S. The filtrate from HgS precipitate was evaporated to dryness *in vacuo*, the residue was dissolved in a small portion of water, and treated with aq. sodium styphnate. The resulting precipitate, after crystallization from acetone, yielded 1.8 g. of yellow needles, m.p. 230~231°(decomp.), which was shown by infrared spectrum to be identical with magnoflorine styphnate. *Anal.* Calcd. for $C_{20}H_{24}O_4N \cdot C_6H_2O_8N_3$: C, 53.24; H, 4.47.

* This constitutes a part of a series entitled "Studies on the Alkaloids of Menispermaceous Plants" by Masao Tomita.

** Yoshida-konoe-cho, Sakyo-ku, Kyoto (中野立彦, 内山幹男).

1) Part CXXXVII. M. Tomita, T. Kugo : J. Pharm. Soc. Japan, **76**, 857(1956).
2) (Suppl. 8). M. Tomita, I. Kikkawa : This Bulletin, **4**, 230(1956).
3) M. Tomita, F. Kusuda : *Ibid.*, **1**, 1, 5, 55(1953).
4) T. Nakano : *Ibid.*, **2**, 326, 329(1954).
5) All melting points are uncorrected. We are indebted to Dr. K. Hozumi, Mr. K. Imaeda, and Miss F. Tanase of the Central Analysis Room of this Institute for the microanalytical data.