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Correlation of Heyneanine with Ibogamine

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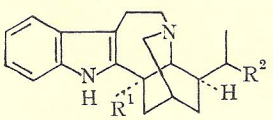
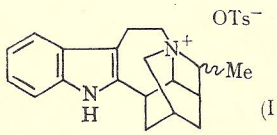
IN a previous communcation,[1] we reported the isolation of the alkaloid heyneanine from the roots and bark of *Tabernaemontana heyneana* Wall. (fam. Apocynaceae). On the basis of its n.m.r. and mass spectra, the structure (I) was suggested for the alkaloid. We report here chemical evidence to confirm this structure.



(I) R^1=CO_2Me; R^2=OH
(II) R^1=H; R^2=OH
(IV) R^1=H; R^2=H
(V) R^1=CO_2Me; R^2=H



(III)

The presence of a hydroxyl group in heyneanine was shown by the formation of an acetate, $C_{23}H_{28}N_2O_4$, m.p. 180—181°. Alkaline hydrolysis of heyneanine gave the corresponding acid which decarboxylated readily to give demethoxycarbonylheyneanine (II), $C_{19}H_{24}N_2O$, m.p. 162—163°. With tosyl chloride and pyridine this yielded a quaternary tosylate, $C_{26}H_{30}N_2SO_3$, m.p. 268—270° (dec.), which is formulated as (III) by analogy with iboxygain.[2] Reduction of the tosylate with lithium aluminium hydride gave ibogamine (IV), m.p. 162°, identical in all respects with an authentic sample prepared from coronaridine (V) by the reported procedure.[3] This correlation with ibogamine confirms structure (I) assigned earlier to heyneanine.

From the alkaloid mixture obtained from the roots and bark of *Tabernaemontana heyneana*, we have isolated in addition to heyneanine, the known alkaloid coronaridine (V), $C_{21}H_{26}N_2O_2$, as its crystalline hydrochloride, m.p. 232—233° (dec.), identical in all respects with an authentic sample of coronaridine hydrochloride.

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[1] T. R. Govindachari, B. S. Joshi, A. K. Saksena, S. S. Sathe, and N. Viswanathan, *Tetrahedron Letters*, 1965, 3873.
[2] K. Biemann and M. Friedmann-Spiteller, *Tetrahedron Letters*, 1961, 68.
[3] M. Gorman, N. Neuss, N. J. Cone, and J. A. Deyrup, *J. Amer. Chem. Soc.*, 1960, **82**, 1142.