

SHORT COMMUNICATION

OCCURRENCE OF ERYSTRINE AND OTHER ALKALOIDS IN *ERYTHRINA VARIEGATA**

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Plant. *Erythrina variegata* L. var. *orientalis* (L.) Merrill (syn. *E. indica* Lam.)—Leguminosae.

Occurrence. Throughout India in deciduous forests and in Andaman and Nicobar Islands.¹

Uses. Bark—astrigent, febrifuge, in liver troubles, anthelmintic, as a collyrium in ophthalmia, antidote to snake-bite. Leaves—laxative, diuretic, anthelmintic, for relieving pain in joints.

Previous work. No definite information is available except that different parts of this plant contain a poisonous alkaloid¹ and hypaphorine.²

Trunk bark. Defatted (benzene) material hot extracted with alcohol, crude alkaloid mixture purified by gradient pH extraction and chromatographic adsorption. Total alkaloid, 0.11%.

Erysodine. $C_{18}H_{21}NO_3$ (m.p., mixed m.p., $[\alpha]_D$, u.v., i.r., co-TLC). *Erysovine.* $C_{18}H_{21}NO_3$ (m.p., $[\alpha]_D$, u.v., i.r., co-TLC). Base hydrochloride (m.p., mixed m.p.), picrate of methyl ether (m.p., mixed m.p.). *Erysonine.* $C_{17}H_{19}NO_3$ (m.p., mixed m.p., $[\alpha]_D$, u.v., i.r., co-TLC). *Hypaphorine.* $C_{14}H_{18}N_2O_2$ (m.p., mixed m.p., u.v., i.r., co-TLC), base hydrochloride (m.p., mixed m.p.), nitrate (m.p., mixed m.p.).

New compound. *Erystrine* (major alkaloid). Pale-brown syrupy liquid, $C_{19}H_{23}NO_3$, M^+ , m/e 313, significant peaks at m/e 298 ($M-CH_3$), 282 ($M-OCH_3$), 179, $[\alpha]_D^{25} +142^\circ$ (EtOH), λ_{max} 235 (21,880) and 282–85 nm (3262), ν_{max} 1640, 1622, 1258, 1020, 805 cm^{-1} , yellow picrate, $C_{25}H_{26}N_4O_{10}$, m.p. 161° , picrolonate, $C_{29}H_{30}N_5O_8$, m.p. $189-190^\circ$.

Leaves. Total alkaloid, 0.035%.

Erystrine (major alkaloid). *Erysodine.* *Erythraline hydrochloride.* $C_{18}H_{19}NO_3$, HCl (m.p., u.v., $[\alpha]_D$). *Hypaphorine.*

Seeds. Total alkaloid, 0.082%.

Hypaphorine (major alkaloid). *Erysovine.* $C_{17}H_{19}NO_3$ (m.p., mixed m.p., co-TLC), picrate of *O*-dimethyl ether (m.p., mixed m.p.).

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† D. K. GHOSH, M. Pharm. Dissertation, Banaras Hindu University (1969).

¹ R. N. CHOPRA, S. L. NAYAR and I. C. CHOPRA, *Glossary of Indian Medicinal Plants*, p. 111, C.S.I.R., New Delhi (1956).

² K. FOLKER and F. KONIUSZY, *J. Am. Chem. Soc.* **62**, 436 (1940).

New compound. Erysotine. $C_{17}H_{21}NO_4$, m.p. 168–171°, $[\alpha]_D +148^\circ$ (EtOH), λ_{max} 285–287 nm (20,426), M^+ , m/e 303, significant peaks at m/e 271 ($M-32$ due to loss of MeOH) and 245 ($M-58$ due to loss of $CH_2=CHOMe$). These data indicate that the structural relationship in erysopine–erysotine pair is similar to the one existing between erythraline–erythratine.³

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³ D. H. R. BARTON, R. JAMES, G. W. KIRBY, D. W. TURNER and D. A. WIDDOWSON, *J. Chem. Soc.* 1529 (1968).