

Dehydrogenation of the alkaloid with mercury acetate gave a base with mp 184°–185° C (from acetone),  $[\alpha]_D -416^\circ \text{C}$  (c 0.55; ethanol).

A comparison of the properties of the latter with 5-hydroxy-6,7-dehydromatrine showed that they were enantiomeric forms. Racemic 5-hydroxy-6,7-dehydromatrine melts at 162°–163° C (from acetone) and gives a crystalline perchlorate with mp 196°–197° C (from ethanol). Thus, the alkaloid is the optical antipode of *l*-sophoridine, which has been isolated from Sophora alopecuroides [5].

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#### IDENTIFICATION OF THE ALKALOIDS OF VINCA ERECTA

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The alkaloids of the plant Vinca erecta [1] give various colors with cerium ammonium sulfate, like the bases of V. rosea [2]. The colorations of the spots of some of the alkaloids change instantaneously, those of some others slowly, and those of a third group are very stable. The hydroxyindole alkaloids vinerine and vineridine do not give colors with cerium ammonium sulfate. The  $R_f$  values of some of the bases are very similar in one system and differ considerably in another; consequently, for chromatography we selected three systems of solvents: 1) ethyl acetate–methanol (9:1); 2) chloroform–methanol (9:1); 3) benzene–methanol (9:1) (table).

Base	$R_f$ of the bases in the following solvent systems			Color of the spots
	1	2	3	
Akuammidine	0.47	0.50	0.50	Gray
Akuammine	0.09	0.27	0.28	Yellowish red
Akuammicine	0.11	0.34	0.46	Blue, fades
Vincanine	0.10	0.45	0.45	Green
Vincanidine	0.09	0.30	0.35	Brown
Vinervine	0.10	0.25	0.30	Violet, fading instantaneously
Vinervinine	0.12	0.43	0.46	Blue, fades after 15–20 min
Vincarine	0.34	0.50	0.49	Brick red, fades after 30 min
Vincamine	0.43	0.69	0.63	Yellow
Vincaridine	0.34	0.33	0.41	Red-yellow
Isoreserpilline	0.75	0.76	0.66	Violet
Kopsinine	0.2	0.42	0.44	Red
Pseudokopsinine	0.45	0.65	0.55	Red
Ervamine	0.60	0.74	0.75	Blue, changes to yellow after 1 hr
Ervine	0.70	0.79	0.65	Dark yellow
Ervinidine	0.74	0.71	0.67	Violet, fades instantaneously

For thin-layer chromatography we used KSK silica gel ground and passed through a Kapron sieve. The sorption material consisted of a mixture of silica gel and gypsum in a ratio of 9:1. The layer was deposited in an apparatus made as described by Stahl [3]. The layer thickness was 250  $\mu$ . The prepared plates were activated by drying at 20° C for 24 hr. Chromatography was carried out in cylindrical chambers (120  $\times$  300 mm). The bases were deposited in an amount of 5–10  $\gamma$ . The plates were revealed by being sprayed with a 1% solution of cerium ammonium sulfate in concentrated orthophosphoric acid.

Thus, this method enables the alkaloids of the plant Vinca erecta to be identified rapidly and it can be recommended for determining the quantitative composition of the individual fractions of a mixture of alkaloids.

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#### ALKALOIDS OF THALICTRUM SIMPLEX

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Continuing our investigation of the alkaloids of the roots of Th. simplex L. [1–3], we have isolated an optically inactive base with mp 169°–170° C (acetone) from the nonphenolic fraction by treatment with methanol. From a comparison of the UV and IR spectra, paper chromatography, and a mixed melting point test, the alkaloid has been shown to be identical with an authentic sample of  $\beta$ -allocryptopine [4].

The chloroform extract after the elimination of the bulk of the alkaloids was concentrated and treated repeatedly with 10% sulfuric acid, and the combined alkaloids were obtained by the usual method and separated on alumina. The benzene eluate yielded crystals of a base with mp 131°–132° C (ethanol),  $[\alpha]_D^{20} + 20.26^\circ$  C (c 1.38; chloroform), + 57.85° C (c 0.96; ethanol), hydrobromide, mp 250°–252° C (decomp.), sulfate mp 198°–202° C (decomp.), picrate mp 141°–150° C. The nitrogen in the base was tertiary, since it formed a methiodide having mp 224°–225° C. There were no  $\text{CH}_2\text{O}_2$  and OH groups. UV spectrum:  $\lambda_{\text{max}}$  220, 280, and 300  $\mu$ . From its spectrum and the value of the specific rotation the base can be assigned to the aporphine series with an unsubstituted C-4 position. Preliminary data indicate that this base is new.

After the chloroform extraction, the roots were dried and were reextracted with methanol. This gave 0.1% (of the weight of the dry roots) of a quaternary base in the form of an iodide with mp 249°–251° C (methanol), which was identified by a comparison of the UV and IR spectra and by paper chromatography with an authentic sample of magnoflorine iodide.

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