

The plant *Thalictrum collinum* Wallr. family Ranunculaceae has been little studied chemically. It is reported in the literature that the leaves and fruit contain about 0.72% of alkaloids, while their presence in the roots and stems has been shown qualitatively [2].

We have performed a more profound chemical study of the herb *Thalictrum collinum* gathered in the flowering phase at the village of Vashladzhvari (environs of Tbilisi) on July 4, 1984, for their alkaloid content [1].

The usual chloroform extraction of the epigeal parts gave 0.1% of bases, which were separated into phenolic and nonphenolic fractions. The phenolic tertiary bases were chromatographed on a column of silica gel (1:70) with elution by chloroform, chloroform-methanol, and methanol. Chloroform-methanol (95:5) eluted the base thalmine [3], and chloroform-methanol (90:10) the alkaloid isoboldine [4].

The combined nonphenolic material was chromatographed on a column of alumina (1:50, neutral, activity grade II). The alkaloids were eluted with benzene, benzene-chloroform, chloroform, ethyl acetate, and ethyl acetate-methanol. Benzene-chloroform (1:1) eluted O-methylthalicberine [5], and ethyl acetate eluted glaucine [7].

The method of methanolic extraction was applied to the roots. After the methanol has been distilled off, the concentrated extract was treated with 10% sulfuric acid, the acid extracts were alkalinized to pH 9, and the alkaloids were extracted with ether and chloroform. The combined ether-soluble and chloroform-soluble alkaloids obtained were separated into phenolic and nonphenolic bases. The combined nonphenolic tertiary bases were chromatographed on a column of alumina (1:70, neutral, activity grade II). The alkaloids were eluted with benzene, benzene-chloroform, chloroform, ethyl acetate, and ethyl acetate-methanol.

Benzene-chloroform (1:1) eluted O-methylthalicberine, and ethyl acetate eluted glaucine.

After the extraction of the tertiary bases from the acidified mother solution by the addition of a saturated solution of potassium iodide, the iodides of the tertiary base were obtained, and the iodides soluble in chloroform were separated. Further separation of the latter on a column of silica gel with elution by chloroform and chloroform-methanol (95:5) yielded magnoflorine iodide [6]. Berberine was also identified among the quaternary bases [1].

The compounds isolated were identified by comparison with literature information of their physicochemical characteristics, and also by direct comparison with samples of the alkaloids thalmine, berberine, magnoflorine, glaucine, and O-methylthalicberine.

## LITERATURE CITED

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