ALKALOIDS OF Senecio

D. S. Khalilov and M. V. Telezhenetskaya

UDC 547.944/945

We have investigated two species of Senecio from the flora of Azerbaidzhan: S. rhombifolius (Willd) Sch. Bip. and S. kubensis Grossh. According to the literature, the main alkaloid of S. rhombifolius is sarracine, with seneciphylline present in far smaller amount and platiphylline [1] in insignificant amount.

By a published method [2], from the epigeal part of S. rhombifolius collected in the Kakhi region in the budding phase on June 27, 1970, we have isolated 1.34% of combined alkaloids, 76.87% of which consists of N-oxides, and from the subterranean parts 3.68% of combined alkaloids, 97.88% of which are N-oxides. The combined bases of both the epigeal and the subterranean parts of the plant give a bitartrate with mp 193°C; $[\alpha]_D^{20}$ −40.1 (c 5.4; H_2O). Decomposition of the salt gave a base (I) with mp 123-124°C; $[\alpha]_D^{20}$ −46.2° (c 3.23; chloroform). Substance (I) was identified as platiphylline by a comparison of R_f values and IR spectra and also from an absence of a depression of the melting point of a mixture with an authentic sample.

The mother liquors after the separation of the platiphylline bitartrate were evaporated and converted into the bases. Recrystallization from methanol gave substance (II) with mp 217°C (methanol), $[\alpha]_D^{20}$ −125°C (c 1.92; chloroform).

The IR spectra of (II) and of seneciphylline were identical, and a mixture gave no depression of the melting point.

The mother liquors after the separation of the platiphylline and the seneciphylline gave a bitartrate with mp 137-138°C (ethanol). The base (III) isolated from the bitartrate melted at 130-131°C (methanol), $[\alpha]_D^{20}$ +1.93°C (c 4.25; chloroform); picrate mp 163°C; perchlorate mp 216-217°C.

These constants and also the UV and IR spectra agree with literature data for neoplatiphylline [3].

S. kubensis, which has not been investigated previously, is endemic to Azerbaidzhan.

The combined alkaloids of the epigeal part of this species collected in the Kuba region in the flowering phase on July 24, 1971, amounted to 0.45%, 67.86% of which were N-oxides, while the subterranean part gave 0.51% of which 40% were N-oxides.

From a mixture of the bases of both the epigeal and the subterranean parts we isolated seneciphylline, amounting to 89.32% and 75.21% of the total, respectively; it was identified by a direct comparison with an authentic sample.

LITERATURE CITED

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Azerbaidzhan State Medical Institute. Institute of the Chemistry of Plant Substances, Academy of Sciences of the Uzbek SSR. Translated from Khimiya Prirodnykh Soedinenii, No. 1, pp. 128-129, January-February, 1973. Original article submitted June 13, 1972.