

The chromatograms were interpreted quantitatively by the method of internal normalization of the areas of the peaks with a relative error of determining the areas of 5%.

In Table 1 we give the results of the GLC analysis of methylated extracts of rhododendrons.

In the species of plants investigated there was less oleanolic acid than ursolic acid. The only exception was *Rhododendron mucronulatum*. Almost equal amounts of these compounds were found in *Rh. sichotense* and *Rh. dahuricum*. As compared with other species, there was a very low proportion of oleanolic acid in the mixture of triterpene acids of *Rh. ponticum*.

LITERATURE CITED

1. R. Hegnauer, *Chemotaxonomie der Pflanzen*, Birkhäuser Verlag, Stuttgart, Vol. 4 (1966), pp. 93 and 94.
2. G. A. Fokina and N. V. Belova, *Khim. Prir. Soedin.*, 735 (1975).
3. G. A. Fokina, *Khim. Prir. Soedin.*, 583 (1979).

ERYSIMIN AND ERYSIMOSIDE FROM *Erysimum czernjajevii*

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In a study of an ethanolic extract of the seeds of *Erysimum czernjajevii* N. Busch. (Chernyaev's *erysimum*) by the TLC method, four cardenolides were detected [1]. We have isolated two substances by the same method.

Compound (I), with mp 173-178°C, $[\alpha]_D^{20} +29.5^\circ$ (c 0.1; methanol) gave positive Keller-Kiliani, Lieberman-Burchard, Kedde, and Raymond reactions. Hydrolysis with 0.1 N H₂SO₄ formed digitoxose and strophanthidin. In concentrated sulfuric acid (84%) the following colorations succeeding one another in time appeared: brown-green-brown-blue-brown-gray-violet.

On the basis of these facts we came to the conclusion that the substance isolated was erysimin.

Compound (II) with mp 234-237°C, $[\alpha]_D^{20} +21.3^\circ$ (c 0.1; methanol) gave a positive reaction with the Kedde, Raymond, and Lieberman-Burchard reagents. The compound was cleaved by the gastric juice of the snail *Helix plectotropis* into erysimin and D-glucose. In 84% H₂SO₄ the following colorations changing with time appeared: green-greenish brown-brown. A mixture with an authentic sample of erysimoside gave no depression of the melting point.

It was established by a separate quantitative determination [2] that the seeds of Chernyaev's *erysimum* contained from 0.25 to 0.3% of erysimin and from 0.85 to 0.9% of erysimoside.

LITERATURE CITED

1. U. Murzagaliev, *Proceedings of a Republican Conference of Young Scientists [in Russian]*, Alma-Ata, Vol. 2 (1976), p. 519.
2. G. L. Genkina, A. Kh. Sharipov, and N. K. Abubakirov, *Med. Prom. SSSR*, No. 9, 40 (1964).

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