

## REFERENCES

1. I. N. Koretskaya, ZhOKh, 27, 336, 1957; N. I. Koretskaya, and M. M. Utkin, ZhOKh, 28, 1087, 1958.
2. W. E. Hanford, P. Liang, R. Adams, J. Am. Chem. Soc., 56, 2780, 1934.
3. E. Spath, F. Kuffner, N. Platzter, Ber., 68, 497, 1935; W. E. Hanford, R. Adams, J. Am. Chem. Soc., 57, 921, 1935.

11 April 1969

Institute of the Chemistry of Plant Substances, AS UzSSR

UDC 547.944.6

## THE ALKALOIDS OF MERENDERA JOLANTAE

B. Chommadov, M. K. Yusupov, and A. S. Sadykov

Khimiya Prirodnikh Soedinenii, Vol. 5, No. 5, p. 457, 1969

The genus *Merendera* Ram. is one of the largest alkaloid-bearing genera in the family Liliaceae. Four species of this genus grow in Central Asia. Only one of these species, *M. robusta* Bge., has been well studied for its alkaloid content [2]. We have investigated *Merendera jolantae* E. Czemiak, which is widely distributed in the mountain regions of southwestern Turkmenia. Only the presence of colchicine in it is mentioned in the literature [3].

The leaves and stems of the plant (48 kg), collected in the fruit-bearing period (March, 1965) on the territory of the Makhtymkula kolkhoz, Kara-Kala region, were extracted with methanol. The solvent was distilled off and the residue was diluted with water. The aqueous solution, filtered from resin, was acidified with hydrochloric acid and was extracted with ether to remove extractable contaminants. The hydrochloric acid solution was extracted with chloroform into which the neutral alkaloids (I) passed. After being made alkaline with ammonia, the aqueous solution was again extracted with chloroform to remove the basic alkaloids (II). Then I and II were each separated into phenolic and non-phenolic fractions. This gave 0.07% of neutral substances, 0.04% of phenolic neutral substances, 0.19% of basic substances, and 0.09% of phenolic-basic substances. Thus, the combined alkaloids amounted to 0.39% of the weight of the air-dry plant.

Chromatography on a column of alumina (activity grade II) yielded colchamine, colchicine, and colchamein. In addition, the presence of 3-desmethylcolchamine and colchicine was shown by paper chromatography. The main alkaloid of the plant is colchamine.

All the fractions contained, in addition to known alkaloids, alkaloids not previously reported in the literature. They were detected by paper chromatography [4] and chromatography in a thin layer of alumina. It was found that the majority of them have a tropolone ring in their structure. One of the new compounds, which we designate MI-1, was obtained in the crystalline state from the basic fraction of alkaloids; mp 215–216° C (from acetone),  $[\alpha]_D^{20} +112^\circ$  (c 0.95; chloroform), composition  $C_{15}H_{23}O_3N$  [hydrochloride with mp 274–275° C (from acetone) and methiodide with mp 257–258° C (from acetone)].

## REFERENCES

1. Flora of the USSR, Vol. IV [in Russian], Moscow and Leningrad, 1935.
2. A. S. Sadykov and M. K. Yusupov, Tr. TashGU im. V. I. Lenina, Estestv. nauki, no. 203, 15, 1962.
3. V. V. Sokolov, Alkaloid-Bearing Plants of the USSR [in Russian], Moscow, p. 168, 1952.
4. A. S. Sadykov and M. K. Yusupov, ZhPKh, 38, 222, 1965.

15 April 1969

Lenin Tashkent State University