

PHENOLS FROM THE ESSENTIAL OILS
OF SOME SPECIES OF *Artemisia*

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We have investigated the phenols contained in essential oils of the wormwoods of the Gorno Altai. The amounts of phenols in the oils were determined gravimetrically after they had been extracted in the form of phenoxides with caustic soda (Table 1).

The information in the table shows that the amounts of phenols in some essential oils are considerable, the bulk of the phenols passing over with steam distillates in the so-called secondary oil.

The qualitative compositions of the phenolic fractions isolated were investigated in a thin layer of alumina (activity degree V) and on Silufol plates in the benzene-ethanol-acetic acid (45:3:2), benzene-ethanol (9:1), dichloroethane-ethanol (9:1), and benzene systems. The chromatograms were revealed with a 1% ethanolic solution of ferric chloride with subsequent heating at 100°C. The clearest results were given by chromatography on Silufol plates. The individual phenols were isolated by column chromatography

TABLE 1. Amounts of Phenols in the Essential Oils of Some Wormwoods of the Gorno Altai

Species of <i>Artemisia</i>	Percentage of phenols in the essential oil		Year of collection of the raw material	Stage of development of the plant	Site of collection of the raw material
	primary	secondary			
<i>A. mongolorum</i> Krasch.	1.67	2.49	1969	Flowering	Kurai
	0.47	2.59	1970	"	"
<i>A. compacta</i> Fisch.	1.40	—	1970	Vegetation	Kosh-Agach
	0.76	—	1970	Budding	"
	0.76	—	1970	Flowering	"
	1.30	—	1970	Fruit-bearing	"
<i>A. viridis</i> Willd.	4.86	14.50	1970	Budding	Kurai
	3.90	17.00	1970	Flowering	"
<i>A. dolosa</i> Krasch.	2.10	2.07	1970	"	Kosh-Agach
<i>A. obtusiloba</i> Ldb.	5.00	24.70	1970	"	Kurai
	14.40	—	1969	"	"
	3.80	13.40	1970	"	Kosh-Agach
<i>A. macrocephala</i> Jacq.	11.29	—	1970	Vegetation	"
	6.00	9.40	1970	Budding	"
	6.10	4.90	1970	Flowering	"
	1.40	14.90	1970	Fruit-bearing	"

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on alumina with elution by ether for their identification, which was performed by comparing the melting points of the picrates of the phenols with literature data and by the co-chromatography of the phenols isolated with reference samples.

As a result, creosol was found in the essential oils of A. mongolorum, A. compacta, A. obtusifolia, and A. macrocephala, m-cresol in A. dolosa, and p-cresol and, possibly, phloroglucinol or an ether of it in A. macrocephala. We did not determine the amounts of the individual components in the phenolic fractions.