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ANDROSACE ELONGATA L. (*PRIMULACEAE*), ANOTHER STEPPE SPECIES ON THE SERPENTINITES OF KOSOVO AND METOHIJA

Krivošej, Z.[1], Prodanović, D.[2], Amidžić, L.[3], Lazarević, P.[3]

[1]Faculty of Natural Sciences, University of Priština, with temporary seat in Kosovska Mitrovica, Kosovska Mitrovica; email:zoran.krivosej@gmail.com

[2]Faculty of Agriculture, University of Priština, with temporary seat in Kosovska Mitrovica, Zubin Potok; email:danijela_prodanovic72@yahoo.com

[3] Institute for Nature Conservation of Serbia, Novi Beograd; email: lidija@zzp.rs; lazarevic@natureprotection.rs

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SYNOPSIS

Androsace elongata L., as one of the species of eastern steppes, the western boundary of which is in Podunavlje, in Serbia occurs in its eastern and southeastern parts, at several already known and described localities. For the first time, the species has been recorded on serpentinite rocks at the left riverbank of the River Ibar (Rogozna Mt. slopes), growing together with another steppe species – *Astragalus dasyanthus* Pall. This locality is in the area of the village of Donje Jarinje (around 60 km north from Kosovska Mitrovica), and it represents the farthermost point at the southwestern border of the distribution range of this steppe species, and *Androsace elongata* L. is in the same time a new species in the flora of Kosovo and Metohija.

Ključne reči:
Androsaceae elongata L.
stepske vrste,
Kosovo i Metohija

SINOPSIS

Androsace elongata L. (*Primulaceae*), još jedna stepska vrsta na serpentinitima Kosova i Metohije

Androsaceae elongata L., kao vrsta istočnih stepskih oblasti, kojoj se zapadna granica nalazi u Podunavlju, kod nas se sreće u istočnoj i jugoistočnoj Srbiji, na nekoliko već poznatih i opisanih lokaliteta. Po prvi put je ova vrsta konstatovana na serpentinitskim stenama na levoj obali Ibra (padine planine Rogozne), u zajednici sa još jednom stepskom vrstom- *Astragalus dasyanthus* Pall. Pomenuti lokalitet koji se nalazi u ataru sela Donje Jarinje (oko 50 km severno od Kosovske Mitrovice), predstavlja najudaljeniju tačku na jugozapadnoj granici areala ove stepske vrste, a *Androsaceae elongata* L. je ujedno i nova vrsta za floru Kosova i Metohije.

INTRODUCTION

The steppe vegetation, in its true sense and natural state, on the territory of Serbia occurs mainly in Vojvodina, which represents the southern part of the vast Pannonian Plain. The meadow steppe, considered by Neugebauer (1951) as climatogenic in Vojvodina, being a result of the effects of the semiarid climate, had a great influence on soil formation. The steppe vegetation of the Deliblatska Peščara Sands, according to the opinion of Stjepanović-Veseličić (1953), shows, in relation to its geographic position and climate characteristics of this part of the Pannonian Plain, a certain deviation in its floristic composition in comparison to the typical Ukrainian steppe. When considering the similarities of the steppe vegetation in lowlands of Vojvodina with typical Ukrainian steppe, the first thing to consider are the joint species in floristic compositions, the physiognomic features, and the xerophytic level. After Janković (1963), euxerophyte and euxerophyte-steppe plants dominate in true steppes, while xeromesophytes and eumesophytes prevail in the meadow steppe, which represents a transition towards the true meadow. Along with the significant question of the relation of the central-European-Pannonian steppe, determined by edaphic factors in specific habitats, with the true climate south-Russian steppes, is the question of relation between the mountain and the lowland steppes. Defining them more precisely as inclined and placor steppes, Wendelberger (1970) points out that this relation primarily relates to the extent of their floristic similarities, and only then to the extent of their chorological similarities.

Taking into account the steppe character of mountain pastures in some parts of FRY Macedonia, Micevski (1971) wrote: "Considering that there are no true steppes in Macedonia, as climate formations, the formation that by its physiognomy resembles the steppe can be designated as the steppe-like vegetation, which distinguishes it as a specific vegetation type, different in its floristic composition, ecology, and genesis. Such vegetation is directly dependant upon the substratum and the florogenetic factor".

In conditions of the well-developed mountain relief in Serbia, the mountain pastures of the steppe character ("mountain steppes") today spread over considerable areas on the mountains of eastern Serbia, where they occupy a wide spectrum of altitudes (from around 900 m to 1700 m). This part of Serbia is distinct from the geomorphological aspect, for its mountains were formed mainly from limestone masses of various age that belong to the Carpathian-Balkan mountain group (Jovanović-Dunjić, 1983).

RESULTS AND DISCUSSION

The steppe-like vegetation and flora occur on the serpentinites of Kosovo in the Ibar Gorge, on the mountain pastures formed under the anthropogenic influence, mainly in habitats of thermophilous forest communities *Quercetum frainetto-cerridis* Rudski. Without getting into the questions regarding the vegetation and the possible differences and similarities of the "mountain steppes" in eastern Serbia with the

mountain region of Kosovo in the Ibar Gorge, the purpose of this floristic paper is to present another steppe species and its new locality as a part of the flora of Serbia.

During the intensive studies of the flora of the River Ibar valley in spring 2008, at the left riverbank of the River Ibar in the area of the village of Donje Jarinje (around 60 km north from Kosovska Mitrovica), at the altitude of 412 m, we have found a new species for this area – *Androsace elongata* L.(Fig. 1).

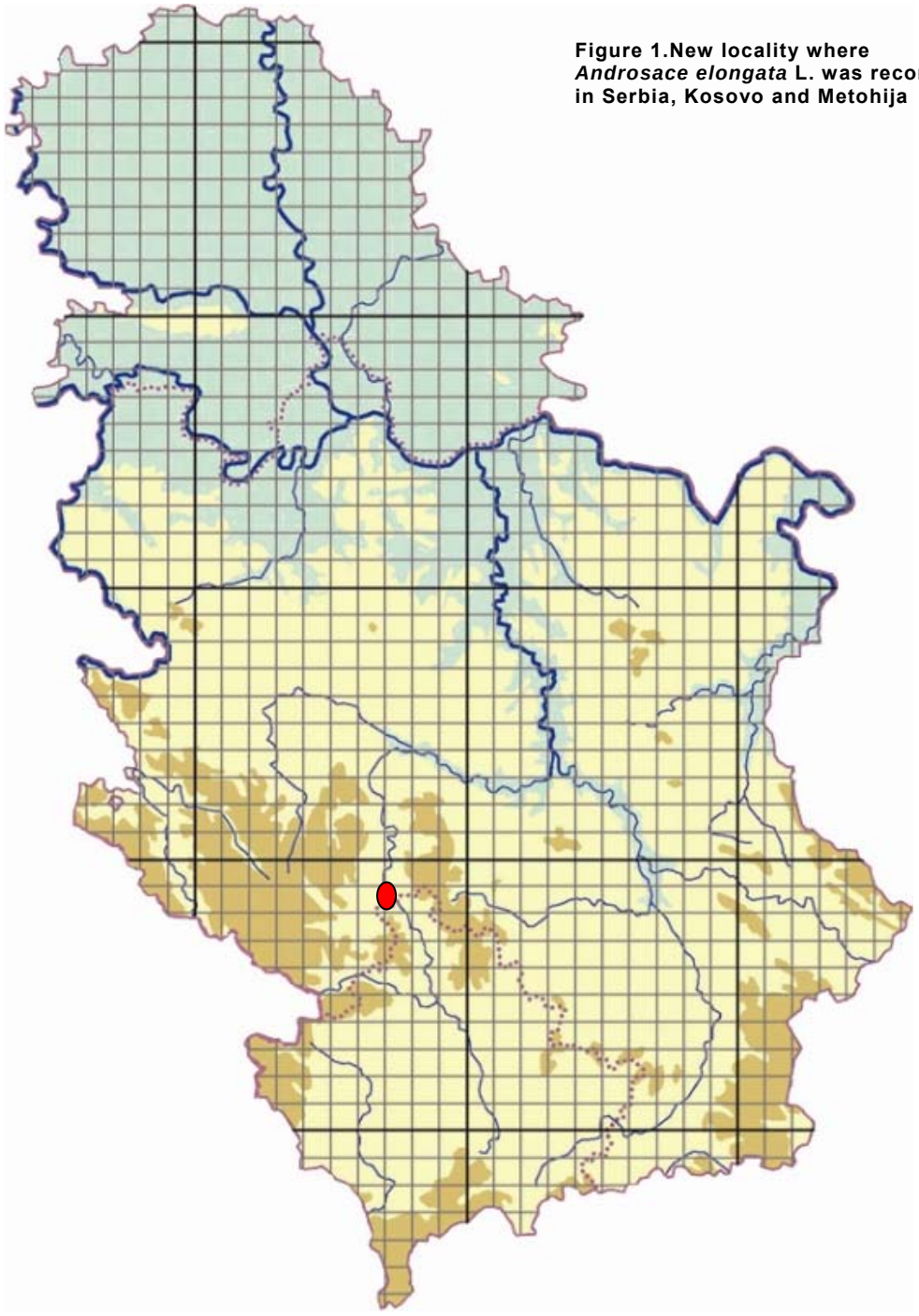

Figure 1.New locality where *Androsace elongata* L. was recorded in Serbia, Kosovo and Metohija

As a species of the eastern steppe region, the western boundary of which is in Podunavlje, this plant grows in eastern Serbia – Vrška Čuka, southeastern Serbia – around Niš, Bela Palanka, and Vranje (Nikolić, 1972), and central Serbia – Sokolovica (Tomović, 2001).

Although the mentioned locality is built of fragments of a very scarce thicket in scope of the association *Quercetum frainetto-cerridis*, the species *Androsace elongata* grows in steppes in great abundance, yet its coverage is not large. The thermophilous habitat and direct exposure to sunlight makes the phenophase of this thermophyte very short and soon finished, and perhaps this is one of the reasons why it has not been found on serpentinite terrain of both Kosovo and Metohija before.

The list of the surrounding flora in the immediate vicinity of the species *Androsace elongata* is shown as a phytocoenological check done on April 24, 2008. This mentioned locality has been visited twice during the following twenty days, in order to determine the present plants with certainty, namely those that have not been in blossom during the end of April.

Quercetum cerris L.	+	
Carpinus orientalis Mill.		+
Fraxinus ornus L.	+	
Pirus piraster Burgsd.		+
Genista lydia Boiss.		
var. *spathulata* (Spach.) Hayek		1.1
Chamaecytisus hirsutus (L.) Link	1.1	
Androsace elongata L.		4.4
Medicago minima (L.) Bartal	3.3	
Helianthemum salicifolium (L.) Miller		3.3
Veronica arvensis L.	2.2	
Veronica verna L.	2.2	
Potentilla arenaria Borkh.		
var. *tommassiniana* (F. Schultz.) Hegi	2. 2	
Alyssum alyssoides (L.) L.	2.2	
Viola arvensis Murr.	2.2	
Thlaspi perfoliatum L.		
f. *perfoliatum*	2.2	
Holosteum umbellatum L.		
var. *glandulosum* Vis.	2.2	
Lagoseris sancta (Torn.) K. Maly	2.2	
Melilotus officinalis (L.) Pallas		2.2
Aethionema saxatile (L.) R.Br.		
ssp. *graecum* (Boiss. Et Heldr.) Hayek		
var. *graecum*	2.2	
Alyssum montanum L.		
ssp. *montanum*		
var. *montanum*		2.2

Valerianella coronata (L.) DC.		2.2
Cerastium pumilum Curt.	2.2	
Arabidopsis thaliana (L.) Heynh.	2.2	
Myosotis collina Hoffm.		2.2
Lens nigricans (M. Bieberst.) Gord.	2.2	
Arenaria leptoclados (reichenb.) Guss.		2.2
Seseli rigidum W. et K.		2.2
Galium pedemontanum All.	1.1	
Papaver dubium L.		
var. *albiflorum* (Elk.) V. Nikolić		1.1
Vicia lathyroides L.		
f. *angustifolia* (Schramm) Topa et Nyardy	1.1	
Poa bulbosa L.		
f. *vivipara* Koel.		1.1
Lathyrus cicer L.	1.1	
Scleranthus uncinatus Schur	2.2	
Lamium bifidum Cyrillo		
ssp. *balcanicum* Vel.	1.1	
Alysum jancheni Nyar.		1.1
Galium aparine L.	1.1	
Erodium cicutarium (L.) L'Herit.		1.1
Geranium dissectum Jusl.	1.1	
Silene nutans L.	+	
Astragalus dasyanthus Pall.	+	
Jurinea mollis (Torn.) Rchb.		
var. *mollis*		
f. *mollis*		+
Erysimum sylvestre (Crantz.) Scop.	+	
Turritis glabra L.	+	

According to the provided phytocoenological list, the presence of another steppe species is notable – *Astragalus dasyanthus* (which was found in immediate vicinity of *Androsace elongata*), and this species is spreading its range beyond the borders of the thicket, towards the open spaces (in the direction of an abandoned vineyard), and between the altitudes of 478 and 513 m, with southern exposition, it achieves its maximum with approximately 100 individuals, most frequently in the form of smaller or larger tufts. The presence of a pair of endemic species in the list (*Alyssum jancheni* and *Lamium bifidum* ssp. *balcanicum*) is a regular occurrence in many associations in the River Ibar valley.

One of the specific floristic curiosities is the presence of numerous individuals of the species *Scleranthus uncinatus*. According to the data from the flora of Serbia, it seems that this is a high-mountain species, as its localities are the Metohijan

Prokletije Mts. – Kurvala (Gajić, 1970), Golija Mt. and Kopaonik Mt. (Nikolić, Sigunov, Diklić, 1986).

Nevertheless, the genus *Androsace* L. is represented with six species in the flora of Serbia, of which five are present in the flora of Kosovo and Metohija: *Androsace maxima* L., Priština, on a meadow (at the right side of the road to Grmija), between the School for Education of Teachers and the swimming pool (Krivošej, 1990), *A. villosa* L., a plant of the alpine region, on the Šar-Planina Mt. (Nikolić, 1972) and Koritnik Mt. (Nikolić, Sigunov, Diklić, 1986), *A. hedraeantha* Gris., on the Metohijan Prokletije Mts. (Nikolić,1972) and at several more localities on the Šar-Planina Mt. (Nikolić, Sigunov, Diklić,1986). The species *Androsace septentrionalis* L. from the Metohijan Prokletije Mts. was recently described by Stevanović *et al*. (2005), as a new species in the flora of the Balkan Peninsula.

Androsace elongata L.

Ass. Quercetum frainetto-cerridis Rudski, s. 412 m

43^0 12' 65.5" N, 20^0 41' 69.6" E, 24.04.2008., coll./det. Krivošej & Prodanović

CONCLUSIONS

Androsace elongata L. is a Pontic-Pannonian-sub-Mediterranean floristic element (after Gajić, 1980, it is a central-Asian floristic element). As a species of eastern steppe region, the western boundary of which is in Podunavlje, in Serbia it grows in its eastern, south-eastern and central parts, at few already known and described localities. According to the insight into the available references of the botanists from Kosovo and Metohija, particularly of the authors who have studied the serpentinite flora and vegetation (Rexhepi,1979), *Androsace elongata* has not been so far recorded on the territory of Kosovo and Metohija.

The mentioned locality, positioned in the area of the village of Donje Jarinje (around 60 km north from Kosovska Mitrovica), is the farthermost point at the southwestern border of the distribution range of this species, *Androsace elongata*, which represents a new species in the flora of Kosovo and Metohija, and this is its new locality in Serbia.

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