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Short Communication

Contribution to knowledge of the flora of the Republic of Macedonia

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ABSTRACT: This paper presents some of the results of a floristic study conducted during the past two years in different regions of Macedonia. New chorological data and data on their habitats are given for 12 taxa of the vascular flora of Macedonia, among which one species (*Seseli annuum*) is new for the country. Three species (*Lathyrus linifolius*, *Lactuca plumieri*, *Serratula tinctoria*) are rediscovered for the first time after eight or even more decades, and the presence of one species (*Staehelina uniflosculosa*) is confirmed. In addition, one or more new localities are presented for the following seven rare taxa: *Carduus personata* subsp. *albidus*, *Epilobium anagallidiifolium, Peucedanum alsaticum*, *Schoenus nigricans, Sorbus ×latifolia* s.l., *Vicia hybrida* and *V. montenegrina.*

Keywords: flora, first report, chorological data, Macedonia.

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INTRODUCTION

Macedonia is a relatively small country with an extraordinarily rich vascular flora. For more than one and a half century, the flora of Macedonia has been continuously studied by many renowned botanists. Nevertheless, our present knowledge of the flora of Macedonia is still insufficient. In the past almost three decades, during the author's botanical field work in various parts of Macedonia, an abundant herbarium of vascular plants belonging to almost all taxonomic groups was collected. Attention was paid in particular to rare or obscurely known taxa in the flora of Macedonia, as well as to local or regional endemics. The present paper treats some of the rare plants that were found, most of them collected in the past two years.

MATERIALS AND METHODS

During the field work, appropriate herbarium specimens were collected and stored in the private herbarium of the author. This material is supplemented with photographs of live specimens and data regarding their habitat. Identification was made using relevant literature: Flora of the Republic of Macedonia (Micevski 1993, 1998, 2001, 2005); Flora Europaea [Tutin *et al.* (eds.) 1964-1980]; etc. The distribution of new and rediscovered species in Macedonia is mapped.

RESULTS AND DISCUSSION

Sorbus ×latifolia s.l.

Mt. Jablanica - near the road to the village of Lakavica, 1080 m, 41°18'13.11"N, 20°34'53.66"E, 30.6.2016, leg. A. Teofilovski; Poreče - 2.2 km N-NW of the village of Trebovle, 1070 m, 41°46'35.19"N, 21°7'12.66"E, leg. A. Teofilovski; Poreče - 2.3 km S-SE of the village of Blizansko, 980 m, 26.5.2016, observ. A. Teofilovski; Mt. Suva Gora - SW of the village of Gurgurnica (Ahišta), 1000-1400 m, 3.11.2016, leg. A. Teofilovski.

This is a complex of numerous hybrids between *S. aria* s.l. and *S. torminalis* (L.) Crantz, recognised by many authors as separate microspecies (Kutzelnigg 1995; Kurtto 2009; etc.), while some other authors hold that distinguishing such hybrids as microspecies is difficult to justify (Zieliński & Vladimirov 2013). In Macedonia it was previously known from several similar localities: Mt. Osoj (Gorna Matka), Mt. Suva

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Gora (Karpa Belanica, Golina, Larce, Blace) and Mt. Karadžica (Kopanje) (Teofilovski *et al*. 2015). The most typical habitats of *Sorbus ×latifolia* s.l. in Macedonia are *Ostrya carpinifolia* Scop. forests and forest clearings on a carbonate geological substrate. The parental species *S. aria* s.l. and *S. torminalis* are usually present at the same localities, the second one being regularly far less frequent and in many cases absent. On the Balkan Peninsula, *Sorbus ×latifolia* s.l. is also known from several localities in central and eastern Bulgaria and one locality in eastern Serbia (Drzina) (Zieliński & Vladimirov 2013).

***Vicia hybrida* L.**
Skopje - 0.8 km S-SE of the train station, grassy place, 41°59'1.81" "N, 21°26'43.80"E, 11.4.2016, leg. A. Teofilovski.
This species was previously known from Alšar (Kavadarci) (Degen & Dörfler 1897); and from Taorska Gorge and Krivolak (Micevski 2001). The newly recorded population consists of more than 200 individuals growing in a large waste area in the central part of Skopje.

***Vicia montenegrina* Rohlena**
Mt. Stogovo - near the Garska River, beech forest, 1450 m, 30.8.2014, leg. A. Teofilovski & Z. Nikolov; Mt. Jablanica - Elenov Rid, forest margin (*Fagus* and *Ostrya*), 1415 m, carbonate substrate, 41°17'51.63"N, 20°33'41.75"E, 23.6.2016, leg. A. Teofilovski; Mt. Jablanica - above the village of Nerezi, thinned beech forest, 1350-1450 m, 13.9.2016, leg. A. Teofilovski.
This species was previously known from Mt. Bistra (Arap Kula, Starec, Suvi Dol) (Rizovski & Džekov 1990), Gostivar (Mavrovi Anovi, Vrben) (Micevski 2001) and the Šar Planina Mountains (Lešnica) (Teofilovski 2014). It is a Balkan endemic, occurring also in Bosnia and Herzegovina, Montenegro (Stupar *et al.* 2009) and Bulgaria (Rila) [Kuzmanov 1976, sub *V. abbreviata* Spreng. subsp. *orbelica* (Stoj. & Stef.) Kuzm.]. The discovery of this species on Mts. Stogovo and Jablanica extends its range to the southern parts of the western Macedonian mountain chain.

***Lathyrus linifolius* (Reichard) Bässler** (Fig. 1)
Mt. Suva Gora - Ahišta, 3 km SE-S of the village of Gurgurnica, c. 1430 m, 3.11.2016, leg. A. Teofilovski.
Only a few individuals were observed, growing on a bushy place in a devastated beech forest on a calcareous geological substrate. This species was previously known only from the subalpine region of Mt. Golešnica (Bornmuller 1925, sub *Orobus tuberosus* L.), but for almost a century thereafter it was not rediscovered on that mountain or at any other locality in Macedonia. The range of this species includes Europe eastwards to northwestern Russia and the Balkan Peninsula (excluding its southeastern parts) and Algeria (ILIDS World Database of Legumes 2010). Because the eastern edge of the range of this species passes through the territory of Macedonia (Mt. Golešnica), its rediscovery in the flora of Macedonia is also of phytogeographical interest.

***Epilobium anagallidiifolium* Lam.**
Mt. Jablanica - Vevčanska Lokva, 1965 m, 41°14'34.74"N, 20°32'0.33"E, 23.8.2016, leg. A. Teofilovski & D. Mandžukovski.
Epilobium anagallidiifolium is an arctic-alpine circumpolar species previously reported only from the alpine area of Mts. Korab (Kobilino Pole) and Nidže (Kajmakčalan) (Micevski 1983, 2001). An earlier report from Mt. Pelister (Micevski 1983) later was omitted by the same author (Micevski 2001) and thus is considered a doubtful record.
On Mt. Jablanica this species was observed on the banks of the alpine lake Vevčanska Lokva in a rocky place with a very sparse plant cover.

***Peucedanum alsaticum* L.**
Mt. Maleševski Planini - 3.8 km S-SW of the village of Ratevo, grassy place, 1020 m, 30.9.2016, leg. A. Teofilovski, B. Micevski & N. Micevski.
Peucedanum alsaticum is a rare species in the Macedonian flora, previously known only from hilly pastures near Kratovo (Matevski 2005).

***Seseli annuum* L.** (Figs. 1, 2)
Mt. Maleševski Planini - 3 km S-SE of Avramski Kolibi, 1060 m, 41°36'12.78"N, 22°50'53.89"E, 28.8.2016, leg. A. Teofilovski, B. Micevski & N. Micevski; Mt. Maleševski Planini - 3.7 km S-SW of Ratevo village, 1000 m, 41°38'49.56"N, 22°49'41.60"E, 30.9.2016, leg. A. Teofilovski.
This is the first report of the given species for Macedonia, and it increases the number of representatives of the genus *Seseli* to eight species (Micevski 2005). The subpopulations discovered on Maleševski Planini are rather small, comprising c. 10 individuals each, and were found growing in pastures and abandoned meadows on a siliceous geological substrate.
Seseli annuum has a wide Eurasian range extending from western France to central Russia, reaching the Baltic coast in the north and the northeast part of Spain, northern Italy, and the Balkan Peninsula in the south, with one subspecies recognised in the southern Alps and Sardinia [subsp. *carvifolium* (Vill.) P. Fourn] (Aedo & Vargas 2003; Hand 2011). Among the countries neighbouring Macedonia, it is known from Bulgaria (Peev 1982) and Serbia (Nikolić 1973), where it is considered widespread, mainly on meadows and in shrubby places. The newly recorded sites on Mt. Maleševski Planini lie on the southern borderline of the species' range and therefore also have a certain phytogeographical importance.

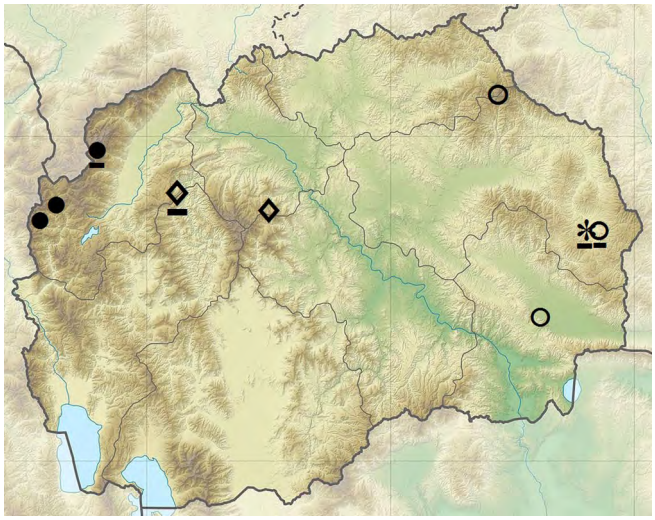

Fig. 1. Distribution of *Lactuca plumieri* (●), *Lathyrus linifolius* (◊), *Seseli annuum* (✳) and *Serratula tinctoria* (○) in Macedonia. The symbols of new records are underlined.

***Staehelina unifloscu losa* Sm.**
Struga – near the village of Kališta, 750 m, 9.8.2016, leg. A. Teofilovski.
This is a small Balkan endemic shrub, in Macedonia obscurely known from two reports. The first one is from "Lubnica" (Formanek 1898; Vandas 1909), which probably refers to the village of Lubnica, located at the foot of Mt. Serta. The second one is from Alšar (Kavadarci) (Hadžiablahović 2004) and is based only on a personal communication with T. Wraber. *Staehelina unifloscu losa* was also mentioned by Hayek (1928-1931) for Macedonia, but this report is practically useless because in the cited work the term Macedonia includes modern-day northern Greece and southwest Bulgaria. It would be appropriate also to mention a report from Dobro Pole (the Greek part of Mt. Nidže), situated close to the Macedonian - Greek border (Velenovský 1922).
In view of the insufficient relevance of previous data, the discovery of *Staehelina unifloscu losa* near Struga is considered the first confirmation of its presence in the flora of Macedonia. The recorded site is located in the coastal area of Lake Ohrid, between the village of Kališta and the "Izgrev" Hotel. Despite a careful search of the vicinity, only three patches of *Staehelina unifloscu losa* were found, growing on an area of c. 10 m^2 in bushy or open rocky places on a calcareous geological substrate.

***Carduus personata* (L.) Jacq. subsp. *albidus* (Adamović) Kazmi**
Mt. Jablanica - 1,3 km SW of the village of Lakavica, 1460 m, 41°19'1.09"N, 20°31'15.93"E, 7.7.2016 leg. A. Teofilovski; Mt. Jablanica - 0.6 km NW-N of the village of Lakavica, 1430 m, 10.8.2016, leg. A. Teofilovski; Šar Planina Mountains - near the Čaušička River, 1390 m, 4.8.1988, leg. A. Teofilovski.
This species was previously known only from Mt. Skopska Crna Gora (Banjašnica, Ginovce and Pešter) (Grupče 1958) and the Šar Planina Mountains (the road to Lešnica) (Micevski 1978, sub *C. personata* subsp. *albidus*). The reports from Mt. Skopska Crna Gora probably also refer to subsp. *albidus*. At the newly discovered localities, this robust plant grows abundantly near mountain streams and forest margins, usually accompanied by some of following species: *Chamerion angustifolium* (L.) Holub., *Doronicum austriacum* Jacq., *Cirsium appendiculatum* Griseb., *Urtica dioica* L., *Telekia speciosa* (Schreb.) Baumg., *Petasites* sp., etc.

Fig. 2. *Seseli annuum* (photo A. Teofilovski).

***Serratula tinctoria* L.** (Fig. 1)
Mt. Maleševski Planini - 3.1 km SW of the village of Ratevo, 915-940 m, 41°39'11.73"N, 22°49'42.43"E, 30.9.2016, leg. A. Teofilovski, B. Micevski & N. Micevski.
Serratula tinctoria was previously known only from Mt. Osogovo (Sultan Tepe) (Urumov 1923) and the vicinity of Strumica (Rudski 1943), but its presence in the Macedonian flora was not confirmed by recent authors. The newly discovered population on Mt. Maleševski Planini comprises c. 30 individuals growing on temporarily wet meadows and their margins.

***Lactuca plumieri* (L.) Gren. & Godr.** (Fig. 1)
[Syn.: *Mulgedium plumieri* (L.) DC.]
Šar Planina Mountains - village of Novo Selo, 2.3 km W of the water capture, forest clearing, siliceous substrate, 1810 m, 41°56'55.37"N, 20°48'37.21"E, 09.08.2015, leg. A. Teofilovski, Z. Nikolov & D. Mandžukovski; Šar Planina Mountains - village of Novo Selo, 0.5 km S of the water capture, beech forest, siliceous substrate, 1560 m, 16.09.2015, leg. A. Teofilovski.
This species was previously known only from Mt. Korab (Nivište) (Košanin 1909, sub *Mulgedium plumieri*) and Gorna Radika (Grebenščikov 1937, sub *M. plumieri*). The latter author did not indicate any specific locality from the area of Gorna Radika, which includes the Macedonian part of Mt. Korab, the northwest part of Mt. Bistra and the southernmost part of the Šar Planina Mountains.

***Schoenus nigricans* L.**
Poreče - 3.3 km SW of the village of Breznica, 520 m, 41°42'17.00"N, 21°12'32.59"E, 11.5.2016, leg. A. Teofilovski.
This is a rare species of wet habitats, one previously known only from the marsh near Negorička Banja (Gevgelija) (Micevski 1967). On the newly discovered site in Poreče, only several patches of the given species were observed. At this locality, it grows on the bottom of a small temporarily wet gully within the belt of a *Quercus pubescens* Willd. and *Carpinus orientalis* Mill. forest on a calcareous geological substrate.

CONCLUSION

The author's recent floristic study performed in different parts of Macedonia has yielded certain important data regarding the flora of that country and the wider region, some of which are presented in this paper. *Seseli annuum* is reported for the first time from Macedonia. Three species (*Lathyrus linifolius*, *Lactuca plumieri* and *Serratula tinctoria*) are rediscovered in the flora of Macedonia after eight or more decades, and the presence of *Staehelina uniflosculosa* in the country's flora is confirmed. One or more new localities are added for the following seven rare taxa in the flora of Macedonia: *Carduus personata* subsp. *albidus*, *Epilobium anagallidiifolium, Peucedanum alsaticum, Schoenus nigricans, Sorbus ×latifolia* s.l., *Vicia hybrida* and *V. montenegrina*.

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REZIME

Prilog poznavanju flore Republike Makedonije

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U ovom radu su predstavljeni rezultati florističkih istraživanja tokom protekle dve godine u različitim regionima Makedonije. Dati su horološki, kao i podaci o staništu o 12 taksona vaskularne flore Makedonije, među kojima je i jedna vrsta (*Seseli annuum*) nova za državu. Tri vrste (*Lathyrus linifolius*, *Lactuca plumieri*, *Serratula tinctoria*) su ponovo nađene nakon osam ili više decenija, a potvrđeno je i prisustvo vrste *Staehelina uniflosculosa*. Takođe, prikazani su i novi lokaliteti, jedan ili više, za sledećih sedam retkih taksona: *Carduus personata* subsp. *albidus*, *Epilobium anagallidiifolium*, *Peucedanum alsaticum*, *Schoenus nigricans*, *Sorbus ×latifolia* s.l., *Vicia hybrida* i V. *montenegrina*.

Ključne reči: flora, prvi nalaz, horološki podaci, Makedonija