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Original scientific paper

MATERIAL ON THE ANNOTATED CHECKLIST OF VASCULAR FLORA OF SERBIA. NOMENCLATURAL, TAXONOMIC AND FLORISTIC NOTES VI

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This study proposes a novel nomenclatural combination and establishes a previously unrecognized synonym. We have also designated lectotypes for *Pedicularis brachyodonta* and *P. heterodonta*. Our research identifies three vascular plant taxa as new additions to the Serbian flora and confirms the occurrence of four species within the country. Furthermore, one native plant taxon is reported as new to the territory of Serbia proper and one spontaneous hybrid for the Kosovo and Metohija province. Conversely, we have refuted the reported presence of five taxa within Serbia or its constituent regions.

Key words: vascular flora, checklist, nomenclature, taxonomy, Serbia

INTRODUCTION

This paper is a sixth continuation of the inventory of the flora of Serbia (Niketić *et al.* 2018, 2020, 2021, 2022, 2023) with nomenclatural, taxonomic and floristic notes related to taxa from the Liliopsida and Magnoliopsida groups, as well as some novelties that have not been previously published in *An annotated checklist of vascular flora of Serbia 1* (Niketić & Tomović 2018a), since in the meantime several significant findings for the flora of Serbia or certain administrative units have emerged.

MATERIAL AND METHODS

The same methods and principles for nomenclature and chorological revision were applied as in Niketić *et al.* (2018).

RESULTS AND DISCUSSION

Nomenclatural notes

MAGNOLIOPSIDA

BORAGINACEAE

Solenanthus krasniqii (Wraber ex Hilger, Greuter & Stier) Niketić, **comb. nov.**

[Niketić in Stevanović, Red Data Book of Flora of Serbia 1: 157 (1999), comb. inval.; Milaku, Llbrii kuq i florës vaskulare të republikës se Kosovës: 72 (2013), nom. inval.]

Ind. loc.: [Serbia, Metohija] "Jugoslavia, Srbija, Kosovo: montis Paštrik supra vicum Gorožup prope oppidum Prizren.". HOLOTYPE (Hilger *et al.* 2015: 18; with the inventory number omitted): "Srbija, Kosovo: Paštrik supra vicum Gorožup prope oppidum Prizren, 1520 m s.m., 30.4.1983 (flor.), T. Wraber (BEO)." (BEO! 00-31) (Fig. 1); isotype G 00177124! [photo!] image available at http://www.ville-ge.ch/musinfo/ bd/cjb/chg/ adetail.php?id=179352&base=img&lang=fr.

≡ *Cynoglossum krasniqii* Wraber ex Hilger, Greuter & Stier, Biodivers. Data J. 3 (e4831): 18 (2015) [basionym].
[Wraber in Ranđelović, Cent. Symp. Flora Niš: 69 (1985), nom. inval.; Wraber, Candollea: 41(1): 145 (1986), nom. inval.]

– "*Solenanthus apenninus*" sensu Hayek, Kaiserl. Akad. Wiss., Wien, Math.-Naturwiss. Kl., Denkschr. 99: 156 (1924) [non Fisch. & C. A. Mey., Bull. Soc. Imp. Naturalistes Moscou 11: 306 (1838)].

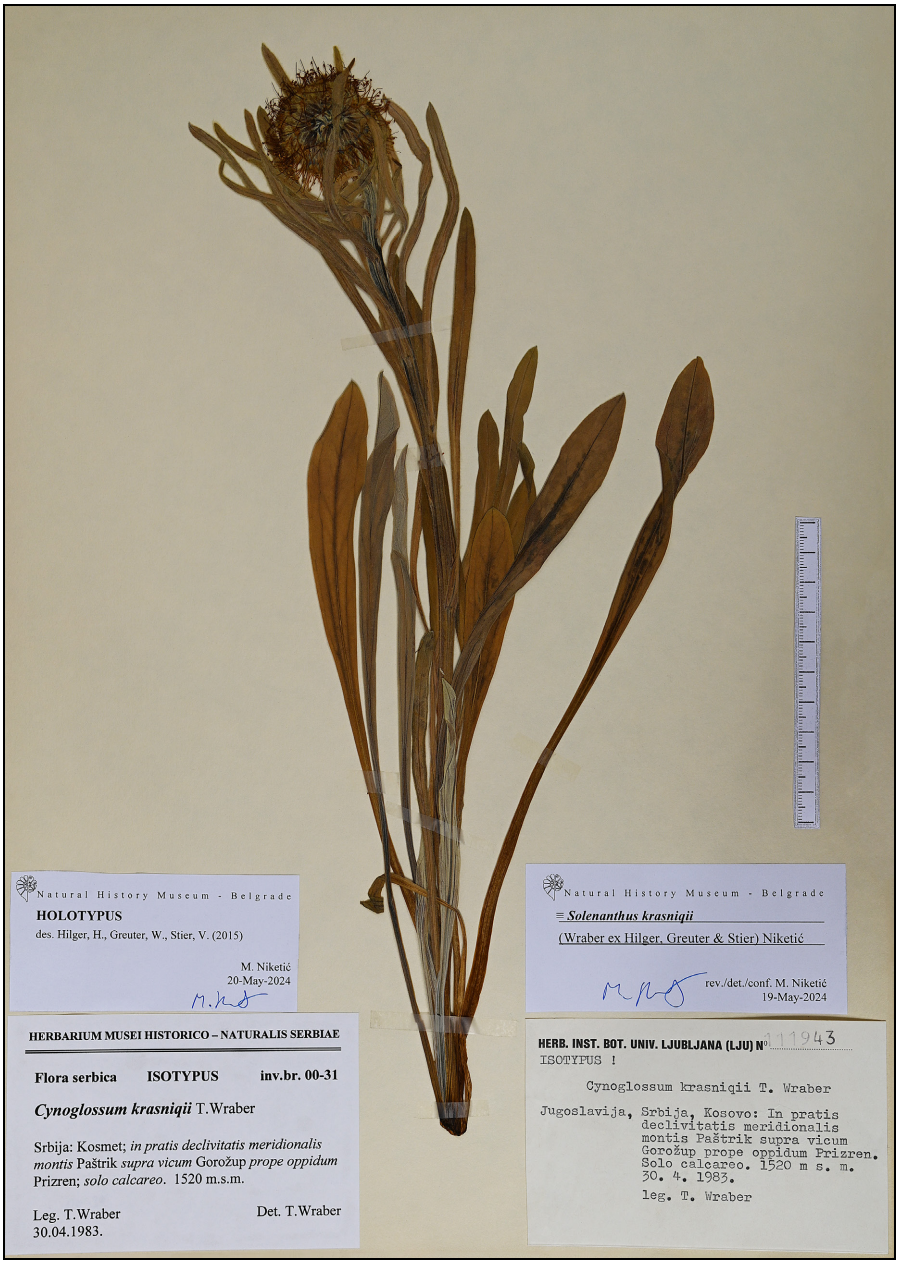

Fig. 1. – *Cynoglossum krasniqii* Wraber ex Hilger, Greuter & Stier – holotype (BEO 00-31).

This stenoendemic species was described from Mt. Paštrik in Metohija, near Albanian border, at first preliminarily (Wraber 1985, "ined"), and then regularly (Wraber 1986). However, in both cases the species name was not

validly published because the author listed two specimens collected at different times (in flower and in fruit) for the holotype (LJU 111943) (Art. 8.2.). Also in the first case, the diagnosis in Latin was omitted (Art. 39.1). The name was validated in Hilger *et al.* (2015), where the holotype was selected as a specimen in flower, previously designated as "isotype" in Wraber (1986) from the collection of the Natural History Museum in Belgrade (BEO). By checking the original material in the BEO herbarium, it was established that only one specimen in flower was actually present, which was designated as an isotype in Wraber (1986), but treated as holotype in Hilger *et al.* (2015). On this occasion, an inventory number is given (BEO 00-31). The same case applies to the isotype specimen, designated by Wraber (1986), deposited in the herbarium in Geneva (G 00177124).

Recent genetic studies (Selvi *et al.* 2011, Weigend *et al.* 2013, Chacón *et al.* 2016) partially confirm earlier taxonomic assumptions (Greuter & Burdet 1981), which subsumed the genus *Solenanthus* Ledeb. within a broader circumscription of *Cynoglossum* L. The later, as traditionally defined, has been shown to be paraphyletic, even after revision. Traditional morphological criteria have proven insufficient for defining monophyletic units. Consequently, Hilger *et al.* (2016), in their nomenclatural revision, transferred the remaining species previously classified as *Solenanthus* into the genus *Cynoglossum*. Notably, *C. krasniqii* also remained within *Cynoglossum*, despite Wraber's (1986) assertion that it belongs to a group of species usually classified as the genus *Solenanthus*. However, due to the complicated taxonomy, the definitive position of the genus *Solenanthus* has not yet been satisfactorily resolved. Sutory (2017), as well as most authoritative checklists [Hassler, M. (1994–2024), Valdés & Raab-Straube (2011+), GBIF (2024), POWO (2024)], recognize this genus. This includes the vicariant *S. apenninus*, which is most similar to our species from Mt. Paštrik, initially placed under that name by Hayek (1924). This nomenclatural inconsistency, therefore, necessitates the transfer of the species from Mt. Paštrik into the genus *Solenanthus*. This transfer was previously attempted by Niketić (1999), but that combination was invalid, not only because it was based on an invalid name, but also because the basionym was not cited (Art. 41.5).

According to IUCN criteria, *Solenanthus krasniqii* represents a globally critically endangered species, as only a small number of individuals have been found so far, exclusively on the northern slopes of Mt. Paštrik (Niketić 1999, Milaku 2013). Due to this limited distribution and low population size, there is a high probability of its extinction.

M. Niketić

OROBANCHACEAE (SCROPHULARIACEAE)

Pedicularis brachyodonta Schloss. & Vuk., Syll. Fl. Croat.: 89 (1857) subsp. ***brachyodonta***

≡ *Pedicularis comosa* subsp. *brachyodonta* (Pančić) Nyman, Consp. Fl. Eur.: 554 (1881).

Ind. loc.: [Croatia] "montis Klek ad Ogulin.". LECTOTYPE (designated here by P. Hein and M. Niketić): "Flora Croatica, in monte Klek, 856, ex herb. Lud. Farkaš-Vukotinovič" (B! 10 1113601); [photo!] image available at https://www.gbif.org/tools/zoom/simple.html?src=//api.gbif.org/v1/image/cache/occurrence/3311732302/media/ced01da03740f93e88ba1809c1892c08

= *Pedicularis heterodonta* Pančić ex Janka, Természetrajzi Füz. 4: 318 (1881); emend. Pančić, Fl. Serbiae, Addit.: 196 (1884), **syn. nov.** ≡ *Pedicularis campestris* subsp. *heterodonta* (Pančić) Nyman, Consp. Fl. Eur.: 554 (1881) ≡ *Pedicularis brachyodonta* var. *heterodonta* (Pančić) K. Malý, Bull. Inst. Jard. Bot. Univ. Belgrade 2: 98 (1932).

Ind. loc.: [Serbia (Pančić 1884)][1] "Kopaonik u Kruševačkoj i Ivica u Užičkoj". LECTOTYPE (designated here by D. Lakušić and M. Niketić): [W Serbia, Mt. Tara] "In pratis m. Ivica Serb. merid. – occid. jun [1]878, J. Pančić" (*8007* BEOU!); [photo!] image available at https://pancic.bio.bg.ac.rs/Engl/Nomen/pages/114.html

= *Pedicularis leucodon* var. *bosniaca* Beck, Ann. K. K. Naturhist. Hofmus. 2: 139 (1887) ≡ *Pedicularis bosniaca* (Beck) Beck & Hayek, Denkschr. Österr. Akad. Wiss., Math.-Naturwiss. Kl. 99: 162 (1924) ≡ *Pedicularis brachyodonta* var. *bosniaca* (Beck) Maly, Bull. Inst. Jard. Bot. Univ. Belgrade 2: 102 (1933).

= *Pedicularis fallax* Beck, Ann. K. K. Naturhist. Hofmus. 2: 139 (1887).

– "*Pedicularis comosa*" sensu Griseb., Spic. Fl. Rumel. 2: 17 (1844) [non L., Sp. Fl. 609 (1753)].

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[1] The nomenclature of *Pedicularis heterodonta* presents a complex scenario. The name was first published by Janka (1881), with a brief description and reference to "*P. heterodonta* Pančić". However, it is unclear whether Janka had access to physical specimens or merely Pančić's description. Pančić (1884) later provided a more detailed description and cited specific localities. There is no such specimen in Janka's herbarium (CL) but in the original Pančić herbarium (BEOU), specimens from both localities mentioned by Pančić were found. One specimen included the collection year, which predates 1881, confirming it as original material. Herbarium specimens from these localities, collected in 1878, are preserved in the Pančić herbarium (BEOU). Given the ambiguity surrounding Janka's material and the clearer documentation of Pančić's specimens, a lectotype was designated from the BEOU collection. This decision is based on the rationale that Pančić's specimens offer a more reliable basis for typification, considering his detailed description and direct knowledge of the species in the field.

Fig. 2. – *Pedicularis brachyodonta* Schloss. & Vuk. (habit of the plant in its natural habitat) in W. Serbia (Zlatibor plateau: Čigota). Previously treated as *P. heterodonta* Pančić ex Janka. (photo M. Niketić)

Fig. 3. – *Pedicularis brachyodonta* Schloss. & Vuk. (flowers) in W. Serbia (Zlatibor plateau: Čigota). Previously treated as *P. heterodonta* Pančić ex Janka. (photo M. Niketić)

The yellow-flowered *Pedicularis comosa* L. group represents a taxonomically highly complex group with its center of diversity in the Balkan Peninsula. In the flora of Serbia, in addition to *P. brachyodonta* Schloss. & Vuk. (Figs. 2–3) (which was described from Croatia, Mt. Klek), three more species have been recorded: *Pedicularis comosa* subsp. *campestris* (Griseb. & Schenk) Soó and *Pedicularis friderici-augusti* Tommasini in eastern Serbia, and *P. leucodon* Griseb. on Mt. Šar Planina. Pančić described *P. heterodonta* Pančić [ex Janka (1881), Pančić (1884)] from western (Mt. Tara: Ivica) and central Serbia (Mt. Kopaonik). The epithets of both plant names highlight the specificity of the calyx teeth, with the emphasis in the plant from Croatia being on the shortness of the teeth, and in the plants from Serbia on their unequal length. Due to the emphasis on the shortness of the teeth, *P. brachyodonta* was long considered a synonym of *P. comosa*, as for example in the very description of *P. heterodonta* (Janka 1881), while in Nyman (1881) both names are treated as subspecies of *P. comosa* in different combinations. However, the very description of *P. brachyodonta* (Schlosser *et al.* 1857) also states that the calyx teeth are unequal, which can be seen on the original material. On the other hand, it is noticeable on the original material that the teeth are somewhat longer than in *P. comosa*. Therefore, Hayek (1929) definitively separates *P. brachyodonta* from *P. comosa*, stating that it differs from *P. heterodonta* by its ± equal calyx teeth. This view has been largely retained to this day, with the exception of Malý's study (1932), which remained relatively unnoticed, in which *P. heterodonta* is considered a variety of *P. brachyodonta* and, according to this author, differs by a deeper sinus on the calyx, a less curved upper lip of the corolla, less hairiness of all plant parts, and also occurs at lower altitudes. However, our analysis of the herbarium material (BEO, BEOU) has shown that all the mentioned characteristics and altitude ranges are highly variable, which fully justified treating *P. heterodonta* as a new synonym of *P. brachyodonta*.

Within this species, four subspecies are currently recognized, three of which are reported from Serbia [*P. b.* subsp. *grisebachii* (Wettst.) Hayek, *P. b.* subsp. *moesiaca* (Stadlm.) Hayek and *P. b.* subsp. *montenegrina* (Janka ex Nyman) D. A. Webb] but due to their high variability, their status needs to be re-evaluated using contemporary taxonomic approaches. Specimens from W and C Serbia, previously identified as *P. heterodonta*, morphologically align with the typical subspecies of *P. brachyodonta*, although this subspecies has not been previously recorded for the flora of Serbia.

M. Niketić

Floristic notes

New and confirmed taxa for the flora of Serbia

LILIOPSIDA

POACEAE (GRAMINEAE)

Festuca picturata Pils, Pl. Syst. Evol. 136: 92 (1980)

= *Festuca picta* Kit. ex Schult., Oestr. Fl., ed. 2, 1: 236 (1814) *nom. illeg*.

= *Festuca rubra* var. *picta* (Schult.) Hack., Monogr. Festuc. Eur.: 134 (1882)

= *Festuca violacea* subsp. *picta* (Schult.) Hegi, Ill. Fl. Mitt.-Eur. 1: 339 (1908)

Festuca picturata Pils is usually a calcifuge species and belongs to *Festuca violacea* aggregate (Pils 1980, Conert 1996, Foggi *et al.* 1999). The distribution of this species extends from the Eastern Central Europe (Central and Eastern Alps) to the Carpathians and the Transylvanian Alps, southwards to the Pirin Mts. in Bulgaria (Foggi & Müller 2009+, Markgraf-Dannenberg 1980). It was recorded in the following Balkan countries: Bosnia and Herzegovina, Bulgaria and Slovenia (Foggi & Müller 2009+, Kitanov & Penev 1968, Andreev *et al.* 1992, Martinčič *et al.* 1999, Sarajlić 2020). The only documented occurrence of taxa from this group of fescues in Serbia pertains to *F. violacea* subsp. *macrathera* (Hack. ex Beck) Markgr.-Dann., which has been recorded in the region of Kosovo and Metohija (Lakušić *et al.* 2018). However, the authors themselves emphasised that, given the insufficient study of taxa from the *F. violacea* aggregate, it is expected that the taxonomic revision will provide more precise answers about their variability and differentiation in Serbia and the Balkan Peninsula (Niketić *et al.* 2018).

The confirmation of the presence of *F. picturata* for Serbia proper is the newly-discovered locality in Mt. Stara Planina in eastern Serbia (Figs. 4, 7). The species was recorded in the crevices of southwest-, north-, and west-facing vertical cliffs composed of Permian red sandstone, at the elevation of 1959 m a.s.l. It was recorded in a sparsely vegetated habitat, together with *Asplenium viride* Huds., *Carex sempervirens* Vill, *Cystopteris fragilis* (L.) Bernh., *Heliosperma pusillum* (Waldst. & Kit.) Rchb. subsp. *pusillum*, *Minuartia verna* (L.) Hiern, *Poa alpina* L., *Primula minima* L., *Saxifraga moschata* Wulfen, *Saxifraga paniculata* Mill. and *Thymus praecox* subsp. *jankae* (Čelak.) Jalas (Fig. 5).

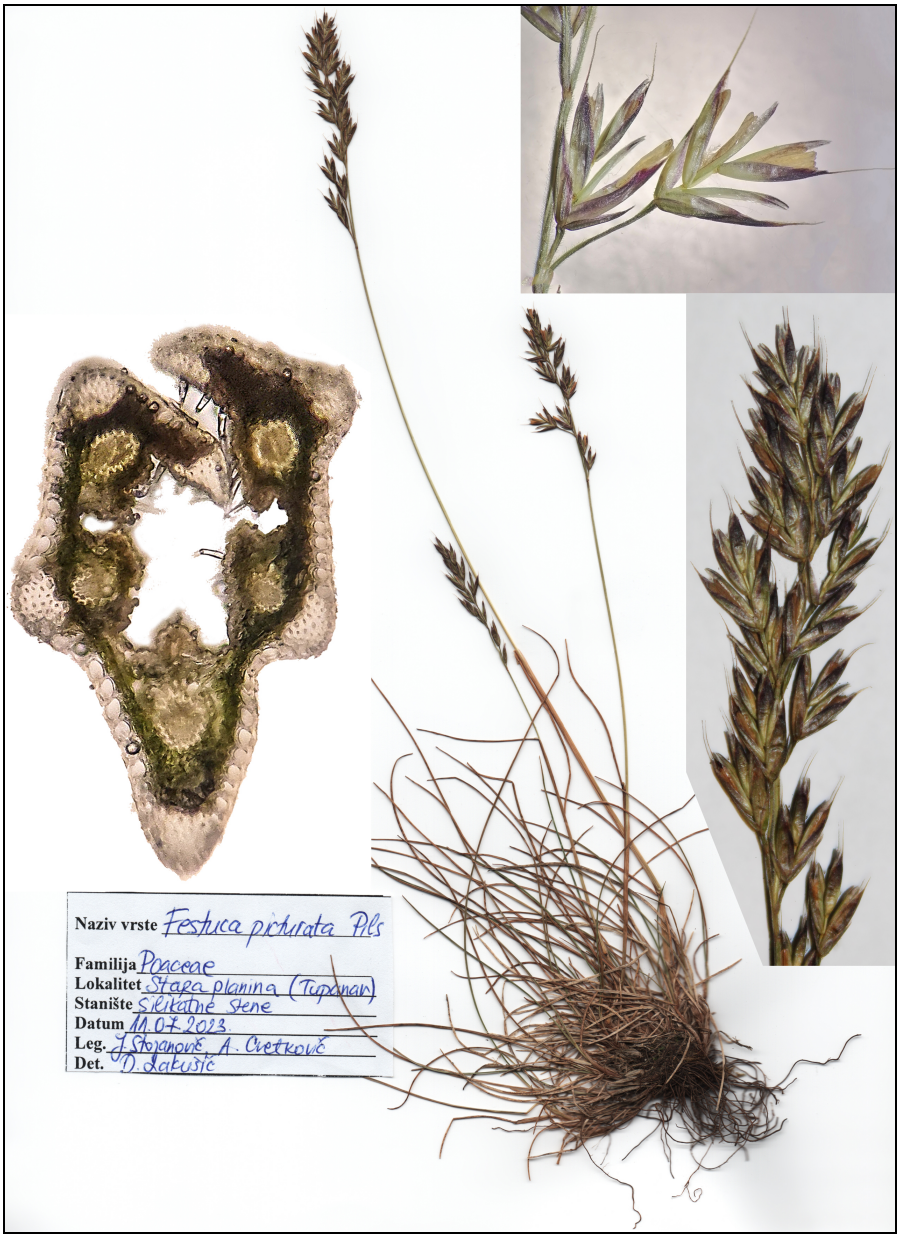

Fig. 4. – Herbarium specimen of *Festuca picturata* Pils (Herbarium Moesiacum Niš 18777) with a leaf transverse section (left) and spikelets (right).

First record:

E Serbia, Mt. Stara Planina, Tupanar, silicate, rock crevices, 1959 *m*, 22.664288 E, 43.402936 N, coll. J. Stojanović, A. Cvetković 11-Jul-2023, det. D. Lakušić (Herbarium Moesiacum Niš 18777) (Fig. 4).

Fig. 5. – Habitat of *Festuca picturata* on Stara Planina Mts (photo. J. Stojanović). For the first time located species for the flora of Serbia.

J. Stojanović, N. Kuzmanović, D. Lakušić

MAGNOLIOPSIDA

BRASSICACEAE (CRUCIFERAE)

Cardamine glanduligera O. Schwarz, Repert. Spec. Nov. Regni Veg. 46: 188 (1939).

= *Dentaria glandulosa* Waldst. & Kit., Descr. Icon. Pl. Hung. 3: 302, t. 272. 1812 ≡ *Cardamine glandulosa* (Waldst. & Kit.) Schmalh., Fl. Sredn. Južn. Rossii 1: 50. 1895, nom. illeg. [non Blanco 1837].

In the Flora of SR Serbia, the presence of this species was documented for NE Serbia, with its occurrence being rare and limited to the locality of Kučajna (Pančić 1874, Jovanović-Dunjić 1976, Gajić 1985). It is noted that the species is more common in deciduous forests, particularly beech forests, compared to coniferous forests. Despite being strictly protected species under national legislation (Sl. glasnik RS 2010-2016), there is limited data on its distribution. This species was unofficially mentioned for Mt. Kopaonik, specifically within the management unit "Brzečka Reka", where a few individuals were recorded in a phytosociological relevé of a fir, spruce and beech forest, ass. *Piceo-Fago-Abietetum* Čol. 1965 *asperuletosum* (Šljukić 2015). Additionally, another record for Central Serbia was noted for Mt Veliki Jastrebac, based on a phytosociological relevé of high-mountainous beech forests (Milošević & Novaković-Vuković 2019). The presence of this strictly protected plant species in Central Serbia remains uncertain and requires further research. Karadžić (2018) conducted analyses of beech forests in Serbia and noted that *Cardamine glanduligera* is a differential species for east-Balkan beech forests.

Our field research and herbarium examination has confirmed the earlier reports (Gajić 1985) of the presence of this species in the vicinity of Majdanpek, and this species was also found at a new locality on the slopes of the Mt. Homolje (Figs. 6–7).

Unpublished records:

NE Serbia, Mt. Homolje, Vitovnica, beech forest, 44.349381, 21.613531, MGRS 34T EQ41, coll. et det. M. Tabašević, V. Stojanović, 29-Feb-2024 (10412 ZZPS).

NE Serbia, Majdanpek, Rajkovo – Zlot, *Fagetum montanum*, coll. et det. A. Sigunov (sub *C. glandulosa*) 03-Apr-1959 (BEO 82256, 82257, 82258).

NE Serbia, Majdanpek, Rajkovo, exp. N, limestone, *Fagetum montanum*, MGRS 34T EQ72, coll. & det. A. Sigunov 28-Apr-1963 (sub *C. pentaphyllos*), rev. V. Stojanović 10-Mar-2024 (BEO 87233).

Fig. 6. – *Cardamine glanduligera* O. Schwarz from Mali Pek river in NE Serbia (photo N. Kuzmanović).

NE Serbia, Majdanpek, Mali Pek river, limestone, *Fago-Carpinetum betuli*, 477 *m*, 21.955823 E, 44.445158 N, MGRS 34T EQ72, coll. & det. S. Vukojičić, N. Kuzmanović 20-Mar-2016 (*47279* BEOU).

Additional herbarium specimen:

NE Serbia, Kučajna, coll. et det. J. Pančić 1867 (sub *Dentaria glandulosa*) (BEOU 002849).

Confirmed species for the flora of Serbia.

M. Tabašević, V. Stojanović, S. Vukojičić, N. Kuzmanović, M. Niketić

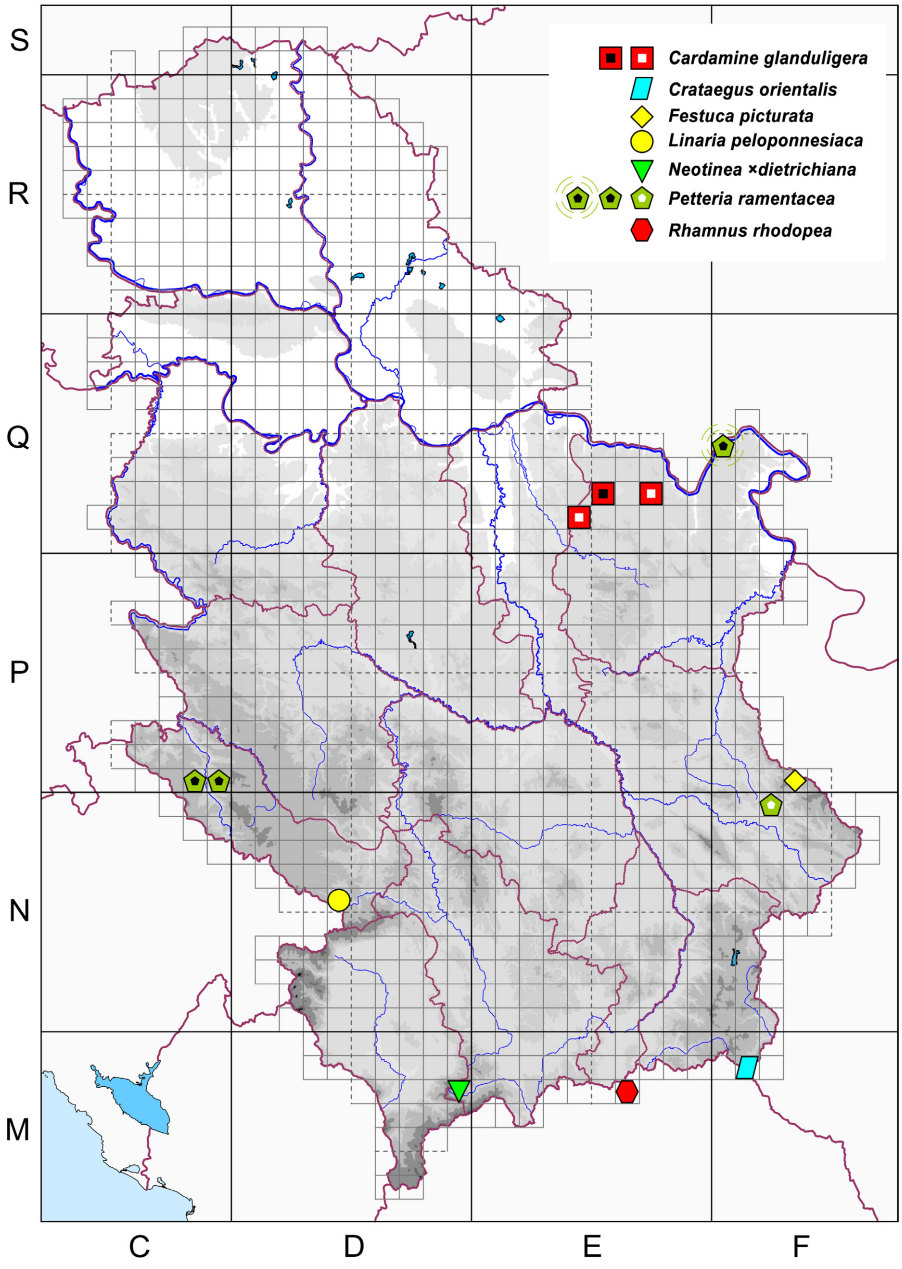

Fig. 7. – Distribution of some new taxa for the vascular flora of Serbia or administrative units: *Cardamine glanduligera* O. Schwarz, *Crataegus orientalis* Pall. ex M. Bieb., *Festuca picturata* Pils, *Linaria peloponnesiaca* Boiss., *Neotinea ×dietrichiana* (Bogenh.) H. Kretzschmar, *Petteria ramentacea* (Sieber) C. Presl and *Rhamnus rhodopea* Velen. Small symbols within symbols: white – new record; black – literature record; lines around symbol – imprecise record.

FABACEAE (LEGUMINOSAE)

Lathyrus laevigatus (Waldst. & Kit.) Gren., Mém. Soc. Émul. Doubs, ser. 3, 10: 193 (1865).

≡ *Orobus laevigatus* Waldst. & Kit., Descr. Icon. Pl. Hung. 3: 270, t. 273 (1811) [basionym].

– "*Lathyrus (Orobus) luteus*" sensu auct. balc., p.p. [non (L.) Peterm., Deutschl. Flora: 155 (1847), nom. illeg.]

This species belongs to the *Lathyrus* Ser. *Lutei* Fritsch series, characterized by yellow to white flowers and distinctively narrow standards, and is distributed from the Pyrenees to Central Asia (Kenicer & Norton 2008). Within this group, the European flora includes *L. ochraceus* Kitt., *L. gmelinii* Fritsch, *L. aureus* (G. Lodd. ex Drapiez) D. Brândzã, *L. transsylvanicus* (Spreng.) Rchb. f., as well as *L. laevigatus* (Waldst. & Kit.) Gren. described from the southeastern branches of Mt. Mala Kapela (Mrsinj Grad ["Mrszin"]) in Croatia (Waldstein & Kitaibel 1811) and also known from Alps, Balkans, Carpathians and Eastern Europe. It differs from the closely related Pyrenean-Alpine relative *L. ochraceus* [= *L. laevigatus* subsp. *occidentalis* (Fisch. & C. A. Mey.) Breistr.] by wider and nearly glabrous leaflets and reduced calyx teeth.

The representatives of this group were first mentioned for the flora of Serbia in Pančić (1874) under the misapplied name *L. luteus* (L.) Petrem., which actually refers to the red-flowered *L. linifolius* (Reichard) Bässler. Given that Pančić mentions yellow flowers, it can be assumed that the plant belongs to *L.* Ser. *Lutei*, but based on the sparse description, it is impossible to determine the exact species. *Lathyrus luteus* is also mentioned without a specific locality for Serbia in Hayek (1925) and Kojić (1972), with the presence of *L. ochraceus* (as "*L. l.* var. *occidentalis*") noted for Kosovo and Metohija (Kojić 1972). According to Greuter *et al.* (1989), all previous literature records of *L. luteus* in Serbia actually correspond to *L. ochraceus*. However, field research and examination of old herbarium material (BEO, BEOU) actually revealed that two other closely related species grow in Serbia: *L. laevigatus* and *L. transsylvanicus* (Spreng.) Rchb. f. For the former species, *L. laevigatus*, older herbarium specimens from Central and Western Serbia, as well as the Metohija region, were documented (Fig. 11).

First records:

C Serbia, Mt. Kopaonik, MGRS 34T DN89 (imprecise), in forests, coll. & det. J. Pančić (sub *Orobus luteus*), Aug-1857, rev. M. Niketić (BEOU 005617) (Fig. 8).

W Serbia, Mt. Tara, Miloševac, MGRS 34T CP75, coll. & det. J. Pančić (sub *Orobus luteus* var. *orientalis*) 1868, rev. M. Niketić (BEOU 005619).

Fig. 8. – *Lathyrus laevigatus* (Waldst. & Kit.) Gren. from Mt. Kopaonik in C Serbia (BEOU 005617).

Metohija, Prokletije Mts, Nedžinat, foothill, MGRS 34T DN22, Mugo pine scrub in cirques, limestone, coll. P. Černjavski, I. Rudski, V. Lindtner, 28-Jul-1938 (BEO 101674), det. P. Černjavski (sub *L. luteus* var. *laevigatus*) (BEO 12965).

New species for the flora of Serbia.

M. Niketić

Lathyrus transsylvanicus (Spreng.) Rchb. f. in Rchb., Icon. Fl. Germ. Helv. 22: t. 220, f. 4 (8/12) (1886).

≡ *Orobus transsylvanicus* Spreng., Syst. Veg. 3: 260 (1826) [basionym] ≡ *Lathyrus laevigatus* subsp. *transsylvanicus* (Spreng.) Breistr., Bull. Soc. Bot. France 87: 53 (1940) ≡ *Lathyrus luteus* subsp. *transsylvanicus* (Spreng.) Dostál, Květena ČSR: 821 (1949).

– "*Lathyrus (Orobus) luteus*" sensu auct. balc., p.p. [non (L.) Peterm., Deutschl. Flora: 155 (1847), nom. illeg.]

– "*Orobus aureus*" sensu Pančić, Fl. Serbiae: 258 (1874) [non G. Lodd. ex Drapiez, Encyclogr. Règne Vég. 1: s.p. (1834)]

Following the preceding species, this species belongs to the *Lathyrus* Ser. *Lutei* Fritsch, characterized by yellow to white flowers and distinctively narrow standards, and is distributed from the Pyrenees to Central Asia (Kenicer & Norton 2008). Within this group, the European flora includes *L. laevigatus* (Waldst. & Kit.) Gren., *L. ochraceus* Kitt., *L. gmelinii* Fritsch, *L. aureus* (G. Lodd. ex Drapiez) D. Brândzã, as well as *L. transsylvanicus* (Spreng.) Rchb. f., which is known from Slovakia, Ukraine, Romania, and Mt. Bükk in Hungary. More recently, it has also been found in Bulgaria on the Central Stara Planina Mountains (Marinov et al. 2014). It differs from the closely related Pyrenean-Alpine *L. ochraceus* [= *L. laevigatus* subsp. *occidentalis* (Fisch. & C. A. Mey.) Breistr.] by its significantly wider and nearly glabrous leaflets and longer calyx teeth, while *L. laevigatus* has highly reduced calyx teeth.

As previously indicated, the representatives of this group were first mentioned for the flora of Serbia in Pančić (1874) under the misapplied name *L. luteus* (L.) Petrem., which actually refers to the red-flowered *L. linifolius* (Reichard) Bässler. Given that Pančić mentions yellow flowers, it can be assumed that the plant belongs to *L.* Ser. *Lutei*, but based on the sparse description, it is impossible to determine the exact species. He also notes that the plant grows "on higher hills", without specifying a concrete locality, except in a footnote for Rasovati Kamen peak (Stara Planina Mts in E Serbia). He suggests that it might be *L. aureus*, although the presence of this thermophilic, oriental-Balkan species at that locality would be ecologically and phytogeographically unlikely. Recently, an unverified report of *L. transsylvanicus* in SW Serbia (Pešter plateau) in the oak forest *Quercetum petraeae-cerris* Jovanović (1960) 1979 appeared (Rakonjac *et al.* 2008). We have also found it in Eastern and Central Serbia (Fig. 11).

Additional records:

E Serbia, Stara Planina, Žarkova Čuka, MGRS 34T FP30, 1600–1848 *m*, silicate, coll. M. Niketić & M. Jovanović, 12-Sep-2006, det. M. Niketić (BEO 101676).

Fig. 9. – *Lathyrus transsylvanicus* (Spreng.) Rchb. f. from Stara Planina Mts in E Serbia (BEO 101677).

Fig. 10. – *Lathyrus transsylvanicus* (Spreng.) Rchb. f. from Brezanska Gorge in C Serbia (photo S. Djurović).

E Serbia, Stara Planina, Žarkova Čuka, MGRS 34T FP30, 1600–1848 *m*, silicate, coll. & det. M. Niketić, 16-Jul-2009 (BEO 101677) (Fig. 9).

C. Srbija, Brezanska Gorge, ultramafite, MGRS 34T DP72, obs. S. Djurović (photo), 05-May-2013, det. M. Niketić (Fig. 10).

Confirmed species for the flora of Serbia.

M. Niketić, U. Buzurović, S. Djurović

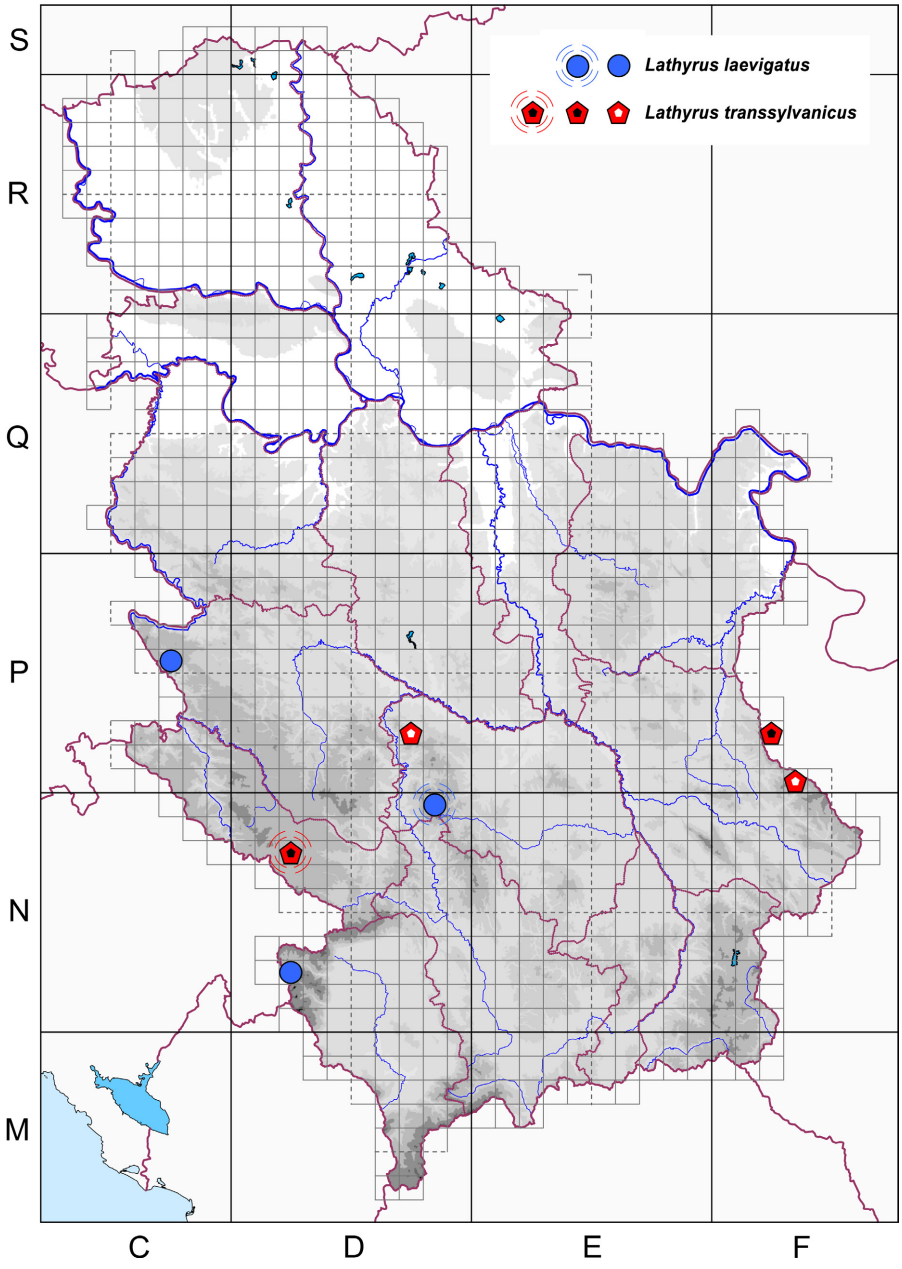

Fig. 11. – Distribution of some new and confirmed taxa for the vascular flora of Serbia: *Lathyrus laevigatus* (Waldst. & Kit.) Gren. and *Lathyrus transsylvanicus* (Spreng.) Rchb. f. Small symbols within symbols: white – new record; black – literature record; lines around symbol – imprecise record.

Petteria ramentacea (Sieber) C. Presl, Abh. Böhm. Ges. Wiss. 5(3): 569 (1845)

≡ *Cytisus ramentaceus* Sieber, Flora 5: 242 (1822) ≡ *Genista ramentacea* (Sieber) Briq. Étude Cytises Alpes Mar.: 123 (1894).

= *Cytisus weldenii* Visiani, Flora 13: 52 (1830)

Petteria ramentacea (*eng*. Dalmatian laburnum, *serb*. zanovet, tilovina) belongs to the monotypic genus *Petteria* C. Presl. native to the Balkan Peninsula, including Mediterranean and Submediterranean regions of Croatia, Bosnia and Herzegovina, Montenegro, Albania and Greece (Nikolić *et al.* 2015, Rivers 2017, POWO 2024). It is considered an Illyrian or Adriatic-Ionian floristic element and Balkan paleoendemic species (Ostojić & Zlatković 2010, Lubarda *et al*. 2014). Valued for its melliferous and ornamental properties (Rivers 2017), *P. ramentacea* is popular among beekeepers in Montenegro (Beloica *et al*. 2023), and is cultivated in Bulgaria, especially around Plovdiv and Euxinograd (Kuzmanov1976). In the *Flora of Serbia* (Diklić 1972) the species is described as "rare", but without specific location details. This is also the case in subsequent editions of the *Flora of Serbia* (Josifović 1977, Sarić 1986). However, *P. ramentacea* was recorded in the hill Titerovac above the Mileševka River Gorge (SW Serbia) (Matović 1986a), the Ratajska Gorge (SW Serbia) (Matović 1986b) and Đerdap Gorge (NE Serbia) (Trifunović 1970), without citation on herbaria. These findings, though, were overlooked and the species was not included in national protection lists (Anonymous 2016) or critically evaluated. This may be due to the fact that later researchers investigating the flora and vegetation of the Mileševka (e.g. Ostojić & Zlatković 2010) and Đerdap gorges (e.g. Petrić *et al*. 2006) did not encounter any individuals of *P. ramentacea* in the last 40 years.

Fig. 12. – Locality and habitat of *P. ramentacea* (Sieber) C. Presl; shrub vegetation in village Gnjilan near Pirot at the foothills of the Belava Mountain (E Serbia) (photo B. Radak)

More recently, during floristic research in 2022–2023, a small population of *P. ramentacea*, consisted of more than 20 individuals was discovered near the village of Gnjilan, in the foothills of Belava Mountain (E Serbia) (Figs. 7, 12–13). This is the first record of the species in E Serbia, expanding its known range further inland. The dominant tree and shrub species in the area include *Carpinus orientalis* Mill., *Paliurus spina-christii* Mill., *Hippocrepis emerus* subsp. *emeroides* (Boiss. & Spruner) Greuter & Burdet ex Lassen, *Prunus spinosa* L., *Crataegus monogyna* Jacq. and *Fraxinus ornus* L. In similar habitat, Matović (1986a) found *P. ramentacea* in degraded relic forest (*Carpinetum orientalis serbicum* Rud.), dominated by *C. orientalis* and *F. ornus*, followed by *Acer monspessulanum* L., *Malus sylvestris* (L.) Mill., *Cornus mas* L., *Rosa canina* L., *Corylus avellana* L., *C. monogyna* and *P. spinosa*.

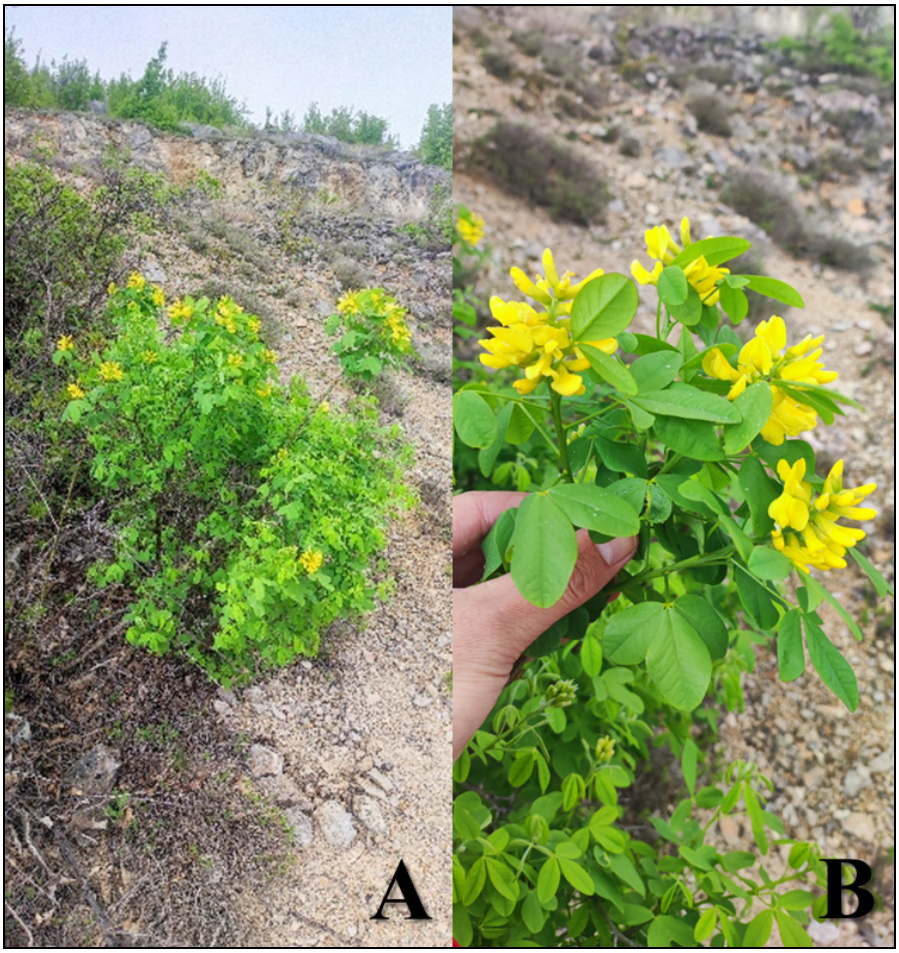

Fig. 13. – *Petteria ramentacea* (Sieber) C. Presl in flowering phenophase, A–habitus, B–inflorescences and leaves (photo B. Radak).

The lack of additional confirmed records in surroundings of Prijepolje and Mileševka Gorge in SW Serbia and Đerdap Gorge in NE Serbia, as well as the exclusion from national conservation lists indicates a need for a more comprehensive conservation effort. Given its fragmented distribution, there is a genuine concern that the species may be endangered. Protecting such species is vital not only for preserving biodiversity, but also for the maintaining ecological stability. To better understand its conservation status in Serbia, further field research and molecular analyses are needed to clarify the origin, population size and ecological preferences of *P. ramentacea*.

New record:

E Serbia, Belava mountain, Gnjilan, MGRS 34T FN29, ~500 *m*, 5–15° slope, S exposition, limestone, xerophilous shrub, coll. & det. B. Bokić, B. Radak, M. Rat, 13-Jul-2022 (BUNS 22236), coll. B. Radak, 25-April-2023, det. B. Bokić, B. Radak, 26-Apr-2023 (BUNS 22237).

Confirmed species for the flora of Serbia.

B. Bokić, B. Radak, M. Rat

RHAMNACEAE

Rhamnus rhodopea Velen., Fl. Bulg.: 119 (1891).

≡ *Rhamnus saxatilis* subsp. *rhodopea* (Velen.) Aldén in Strid, Mount. Fl. Greece 1: 587 (1986).

This thorny shrubby species belongs to the extremely polymorphic species complex *Rhamnus saxatilis* Jacq. Unlike the European *R. saxatilis*, it is distributed in the southeastern part of the Balkan Peninsula (Greece, North Macedonia, Bulgaria and European part of Turkey) and Anatolia. Based on ecological preferences and ± densely hairy twigs and leaves, and reticulate leaf venation, it seems justified to treat it as a separate species (Davis & Yaltriv 1967, Tutin 1968, POWO 2024), although many current plant lists follow Aldén's (2000) opinion that it is a subspecies of *R. saxatilis*.

There are no literature records of this species' presence in Serbia, except for its preliminary announcement in an abstract from a scientific conference (Niketić 2000). It has been found on two occasions (1991 and 2009) on the summit of Veliki Orljak on Mt. Rujan Planina, right on the border between Serbia and North Macedonia (Fig. 7). Both times, only a few mature individuals were found at the habitat. Given that the entire area was cleared a few years ago to prevent illegal immigration, and a fence was erected on the border, it should be verified whether this shrub is still present at the habitat in Serbia.

Fig. 14. – *Rhamnus rhodopea* Velen. from Mt. Rujan Planina in S Serbia (BEO 101674).

First records:

S Serbia, Rujan mountain, Veliki Orljak peak, MGRS 34T EM67, 740 *m*, limestone, xerophilous shrub, coll. & det. M. Niketić, 30-Jun-1991 (BEO 101674) (Fig. 14).

S Serbia, Rujan mountain, Veliki Orljak peak, MGRS 34T EM67, 520-742 *m*, limestone, xerophilous shrub, coll. M. Niketić, G. Tomović, 03-May-2009, det. M. Niketić (BEO 101675).

New species for the flora of Serbia.

M. Niketić, G. Tomović

ROSACEAE

Crataegus orientalis Pall. ex M. Bieb., Fl. Taur.-Caucas. 1: 387 (1808) subsp. ***orientalis***.

– "*Crataegus laciniata*"? sensu B. Jovanović in Josifović, Fl. SR Srbije 4: 178 [non Ucria, Nuov. Racc. Opusc. Aut. Sicil. 6: 251 (1793)].

The presence of this oriental-pontic species in Serbia has remained unconfirmed until now, despite its indirect mention "in the high mountains

Fig. 15. – *Crataegus orientalis* Pall. ex M. Bieb. subsp. *orientalis* from Mt. Dukat in SE Serbia (BEO 101679).

of Kosovo" in the Flora of SR Serbia (Jovanović 1972) – under the misapplied name *C. laciniata* Ucria (which grows in the Iberian Peninsula and the Atlas Mts), but with *C. orientalis* cited as a synonym. There is also another imprecise record of this species (under the name *C. laciniata*) from Šar Planina Mts in Kosovo and Metohija, as well as dubious reports from Western Serbia in the Mileševka Canyon and the Ratajska River (Matović

1986a, Matović & Obratov 1990). The type subspecies of *C. orientalis* is reported on the Balkan Peninsula, with documented occurrences in the floras of Greece, Bulgaria, Albania and North Macedonia.

A revision of herbarium material has confirmed the presence of the related southern Balkan species *C. heldreichii* Boiss. in Kosovo and Metohija, which differs from *C. orientalis* in its smaller fruits and less deeply incised leaves. During a field excursion in the extreme southeast of Serbia (Mt. Dukat), we discovered several individuals above the village of Zlatanovac, confirming the presence of this species in Serbia and representing a new species for the flora of Serbia proper (Fig. 7).

First record for Serbia proper:

SE Serbia, Dukat mountain, Karamanica, Zlatanovac, MGRS 34T FM18, rocky grounds and pastures, silicate, 1200–1300 *m*, coll. & det. M. Niketić, G. Tomović, 23-Jul-2022 (BEO 101679) (Fig. 9).

Confirmed species for the flora of Serbia and new species for the flora of Serbia proper.

M. Niketić, G. Tomović

New and confirmed taxa for the flora of administrative units

LILIOPSIDA

ORCHIDACEAE

Neotinea* ×*dietrichiana (Bogenh.) H. Kretzschmar, Eccarius & H. Dietr. nothosubsp. ***dietrichiana***

Neotinea ×*dietrichiana* (Bogenh.) H. Kretzschmar, Eccarius & H. Dietr. nothosubsp. *dietrichiana* (Fig. 16) is a natural hybrid between *Neotinea tridentata* (Scop.) R. M. Bateman, Pridgeon & M. W. Chase subsp. *tridentata* and *Neotinea ustulata* (L.) R. M. Bateman, Pridgeon & M. W. Chase var. *ustulata* (Fig. 17). The hybrid was described for the first time by Bogenhard (1850) under the name *Orchis* ×*dietrichiana* Bogenh. Applying the Randomly Amplified Polymorphic DNA (RAPD) and Restriction Fragment Length Polymorphism (RFLP) analysis of plastid DNA (cpDNA), a specimen of this hybrid from Italy was analysed (Cozzolino *et al.* 1998). The RAPD confirmed the hybridisation, whereas the cpDNA pattern of the hybrid demonstrated that *N. ustulata* provides the pollen line and *N. tridentata* contributes to the maternal lineage in the hybrid (Cozzolino *et al.* 1998).

Fig. 16. – *Neotinea* ×*dietrichiana* (Bogenh.) H. Kretzschmar, Eccarius & H. Dietr. nothosubsp. *dietrichiana* (Kosovo, Mts. Šar Planina, Štrpce, Maćiš) (photo M. Veljković).

Fig. 17. – *Neotinea tridentata* (Scop.) R. M. Bateman, Pridgeon & M. W. Chase subsp. *tridentata* (left) and *Neotinea ustulata* (L.) R. M. Bateman, Pridgeon & M. W. Chase var. *ustulata* (right) (Kosovo, Mts. Šar Planina, Štrpce, Maćiš) (photo M. Veljković).

The colour and disposition of the outer perianth segments as well as the structure of the labellum and its lobes are the most important distinguishing features of the hybrid. The influence of *N. tridentata* is recognised in the acuminate galea (hood) and the extended lobes of the labellum, whereas the influence of *N. ustulata* can be seen in the perianth segments, which form a dark-coloured galea (Djordjević *et al.* 2012). The size of the spur is between that of the two parental species.

Neotinea ×*dietrichiana* nothosubsp. *dietrichiana* is distributed in the following countries: France, Italy, Switzerland, Austria, Germany, Czech Republic, Slovakia, Hungary, Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Albania, Bulgaria, Greece and Russia (Kretzschmar *et al.* 2007, Djordjević *et al.* 2012 and the references therein; Barina *et al.* 2015, Petrova *et al.* 2018, Kostadinov *et al.* 2018). The hybrid was recorded for the first time for Serbia on Mt. Maljen (Stojići) in Northwestern Serbia (Djordjević *et al*. 2012). It was later found at new localities in Western Serbia (Mts. Kablar and Radočelo) and Southwestern Serbia (Nova Varoš: Rutoši; Priboj: Krnjača) (Djordjević 2021). The new finding of this hybrid on Mts. Šar-Planina (Štrpce: Maćiš) is the first record of this hybrid in the region of Kosovo. This is the southeasternmost limit of the hybrid' distribution in Serbia (Fig. 7). Moreover, this is the first record of this hybrid in the MGRS 34T DM97 10×10 *km* and also in DM 100×100 *km* UTM grid cells.

First record:

Kosovo, Mts. Šar-Planina, Štrpce, Maćiš, grassland community, limestone, 1270 *m*, E 20.999503°, N 42.251646°, MGRS 34T DM97, coll. M. Veljković 11-May-2024, det. V. Djordjević, (BEOU 72564).

A new hybrid for the flora of Kosovo and Metohija province.

M. Veljković, V. Djordjević

MAGNOLIOPSIDA

SCROPHULARIACEAE (PLANTAGINACEAE)

Linaria peloponnesiaca Boiss. & Heldr. in Boissier, Diagn. Pl. Orient., ser. 2, 3: 163 (1856).

This Balkan orophyte is predominantly distributed in the southeastern Dinarides and the Scardo-Pindic mountain system [Greece, SW Bulgaria, Albania, Serbia (Kosovo and Metohija), North Macedonia, Montenegro]. The data for Croatia, Sicily, and Cyprus are likely erroneous (Marhold 2011+). During the research of a part of the Prokletije Mts. mountain

Fig. 18. – *Linaria peloponnesiaca* Boiss. & Heldr. from Ibar river valley in SW Serbia (BEO 101678).

complex range, which is represented outside of Kosovo and Metohija, we found a location of this species in the Ibar valley, which represents a new species for the flora of Serbia proper (Fig. 7).

First record for Serbia proper:

SW Serbia, Ibar river valley, between Tutun and Ribariće, intersection to Tutin, near restaurant "Ibarski Biser" MGRS 34T DN45, rocky ground, limestone, 770 *m*, coll. & det. M. Niketić, G. Tomović, 26-Jun-2020 (BEO 101678) (Fig. 18).

A new species for the flora of Serbia proper.

M. Niketić, G. Tomović

Erroneously reported taxa for the flora of Serbia

MAGNOLIOPSIDA

CARYOPHYLLACEAE

Dianthus leptopetalus Willd, Enum. Pl. Hort. Berol.: 468 (1809).

ABSENT FROM SERBIA.

Literature record on the presence of this species in Serbia – NE and E Serbia, Negotinska Krajina, Mokranje ["Visoka"] and Deligrad (Diklić & Stevanović 2012, Perić *et al.* 2012) is erroneous, since the inspection of herbarium material did not confirm the presence of this species in Serbia. These data actually refer to herbarium records of *D. monadelphus* subsp. *pallens* (Sm.) Greuter & Burdet, which J. Pančić misidentified. However, Pančić later (1874, 1884) did not mention the presence of this Pontic species in the flora of Serbia.

Specimen examined:

Dianthus monadelphus subsp. *pallens* (Sm.) Greuter & Burdet – NE Serbia, Mokranje ["Visoka, okrug Krajinski"], MGRS 34T DP61, coll. & det. J. Pančić Jul-1853 (sub *D. leptopetalus*), rev. G. Tomović 20-May-2024 (BEOU 001670).

Dianthus monadelphus subsp. *pallens* (Sm.) Greuter & Burdet – E Serbia, "collinis arvidis ad Deligrad, Serb. austral." [near Aleksinac], MGRS 34T EP42, coll. & det. J. Pančić Jul (sub *D. leptopetalus*), rev. M. Niketić 29-May-2024 (*275* Herbarium collection of A. Wolny in the Gymnasium of Sremski Karlovci).

G. Tomović, M. Niketić

Silene spergulifolia (Willd.) M. Bieb. in Fl. Taur.-Caucas. 3: 305 (1819).

ABSENT FROM SERBIA.

Literature data on the presence of this coastal species in Serbia – Mt. Rudina (Niketić & Stevanović 2012) actually refers to *Silene supina* M. Bieb. The initial record of this species in Serbia is attributed to Randželovič & Stamenkovič (1986), who reported its presence on Mt. Rudina in SE Serbia, currently the only confirmed location within the country.

M. Niketić

FABACEAE (LEGUMINOSAE)

Lathyrus aureus (G. Lodd. ex Drapiez) D. Brândzã, Prodr. Fl. Romane: 546 (1883).

ABSENT FROM SERBIA.

As previously stated (page 109), the record of this oriental-Balkan species' presence in the flora of Serbia (Stara Planina Mts: Rasovati Kamen) (Pančić 1874) actually corresponds to *L. transsylvanicus* (Spreng.) Rchb. f.

M. Niketić

Lathyrus digitatus Willd., (M. Bieb.) Fiori in A. Fiori & al., Fl. Anal. Italia 2: 105 (1900).

≡ *Orobus digitatus* M. Bieb., Fl. Taur.-Caucas. 2: 153 (1808) [basionym].

= *Orobus sessilifolius* Sm., Fl. Graec. Prodr. 2: 64 (1813).

ABSENT FROM SERBIA.

The reported distribution of this East Mediterranean species in Serbia (Pančić 1874 sub *Orobus sessilifolius*, Kojić 1972, Nikolić *et al.* 1986 sub *L. sessilifolius*) actually corresponds to *L. bauhini* Genty.

Specimen examined:

Lathyrus bauhini Genty – C Serbia, Mt. Stolovi, Dobre Strane – Usovica, 600–1100 *m*, serpentinite, MGRS 34T DP62, coll. N. Diklić, S. Mladenović 25-Jun-1979, det. N. Diklić (sub *L. sessilifolius*), rev. M. Niketić 06-May-2024 (BEO 49213).

Lathyrus bauhini Genty – C Serbia, Mt. Studena Planina, Cvetalica, 600–1100 *m*, serpentinite, MGRS 34T DP72, coll. N. Diklić, S. Mladenović 24-Jun-1979, det. N. Diklić (sub *L. sessilifolius*), rev. M. Niketić 06-May-2024 (BEO 49214).

Lathyrus bauhini Genty – C Serbia, Mt. Stolovi, Greda – Usovica, 1150–1320 *m*, meadows, MGRS 34T DP62, coll. V. Nikolić, N. Diklić 12-Jul-1967, det. N. Diklić (sub *L. sessilifolius*), rev. M. Niketić 06-May-2024 (BEO 49212).

Lathyrus bauhini Genty – C Serbia, Mt. Stolovi, 1000–1200 *m*, meadow, MGRS 34T DP62, coll. Ž. Adamović 06-Aug-1969, det. N. Diklić (sub *L. sessilifolius*), rev. M. Niketić 06-May-2024 (BEO 49211).

M. Niketić

Lathyrus ochraceus Kitt., Taschenb. Fl. Deutschl., ed. 2: 1183 (1844).

= *Orobus luteus* var. *occidentalis* Fisch. & C. A. Mey., Index Seminum (LE, Petropolitanus) 3: 42 (1837) ≡ *Lathyrus luteus* subsp. *occidentalis* (Fisch. & C. A. Mey.) Gams in G. Hegi, Ill. Fl. Mitt.-Eur. 4: 1570 (1924) ≡ *Lathyrus laevigatus* subsp. *occidentalis* (Fisch. & C. A. Mey.) Breistr., Bull. Soc. Bot. France 87: 53 (1940).

= *Lathyrus montanus* (Scop.) Godr. & Gren., Fl. France 1: 486 (1848), nom. ileg. [non Bernh., Syst. Verz.: 247 (1800)] ≡ *Lathyrus luteus* [subsp. *occidentalis*] f. *montanus* Hayek, Repert. Spec. Nov. Regni Veg. Beih. 30(1): 823 (1925).

ABSENT FROM SERBIA.

As previously stated (page 107), the record of this Pyrenean-Alpine species' presence in the flora of Serbia (Metohija, vicinity of Peć) (Kojić 1972) actually corresponds to *L. laevigatus* (Waldst. & Kit.) Gren.

M. Niketić

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МАТЕРИЈАЛ ЗА КРИТИЧКУ ЛИСТУ ВРСТА ВАСКУЛАРНЕ ФЛОРЕ СРБИЈЕ. НОМЕНКЛАТУРНИ, ТАКСОНОМСКИ И ФЛОРИСТИЧКИ ПРИЛОЗИ VI

МАРЈАН НИКЕТИЋ, ЈОВАНА СТОЈАНОВИЋ, НЕВЕНА КУЗМАНОВИЋ, ДМИТАР ЛАКУШИЋ, МИЛЕНА ТАБАШЕВИЋ, ВЕРИЦА СТОЈАНОВИЋ, СНЕЖАНА ВУКОЈИЧИЋ, УРОШ БУЗУРОВИЋ, САЊА ЂУРОВИЋ, БОЈАНА БОКИЋ, БОРИС РАДАК, МИЛИЦА РАТ, МИЛОРАД ВЕЉКОВИЋ, ВЛАДАН ЂОРЂЕВИЋ, ГОРДАНА ТОМОВИЋ

РЕЗИМЕ

У овој студији предложена је нова номенклатурна комбинација и утврђен је један нови синоним. Такође су назначени лектотипови за *Pedicularis brachyodonta* и *P. heterodonta*. Три таксона васкуларних биљака наведени су као нови за Србију, а такође је и потврђено присуство четири врсте у земљи. Надаље, једна аутохтона биљна врста је наведена као нова за територију уже Србије, док је један спонтани хибрид нов за Косово и Метохију. Насупрот томе, оповргнуто је присуство пет таксона у Србији.