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Original scientific paper

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

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This paper represents the fourth part of the inventory of the flora of Serbia (Niketić *et al.* 2018, 2020, 2021), which contains nomenclatural, taxonomic and floristic notes related to taxa from the Magnoliopsida group. At the same time, this contribution is the basis for publication of subsequent volumes of the *An annotated checklist of vascular flora of Serbia* in order to supplement the data on vascular plants in our country.

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

INTRODUCTION

This paper represents a continuation of the inventory of the flora of Serbia through intensive field research, identification and revision of specimens from herbarium collections, as well as a comprehensive review of extensive taxonomic, floristic and phytocoenological literature. The first such article was published four years ago (Niketić *et al.* 2018) as a preparation for the publication of *An annotated checklist of vascular flora of Serbia 1* (Niketić & Tomović 2018). In that paper, new data on taxa were integrated, which included the following groups: Lycopodiopsida, Polypodiopsida, Gnetopsida, Pinopsida and Liliopsida.

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

ASTERACEAE (COMPOSITAE)

Centaurea* ×*extranea nothosubsp. ***lengyelii*** (J. Wagner) Niketić, **comb. et stat. nov.**

[*C. jacea* subsp. *banatica* Hayek × *C. nigrescens* subsp. *vochinensis* (W. D. J. Koch) Nyman]

≡ *C.* ×*lengyelii* J. Wagner, Math. Term. Közlem. 30: 132 (1910) ["*C. banatica* × *carniolica*"] [basionym].

This nothotaxon was described from the vicinity of Budapest (Hungary) and Rakovac monastery in the Srem region (Vojvodina). So far, it has not been found in the field or in the herbarium, and the only informations available to us are the description and illustration in the protologue (Wagner 1910). The existence of *C.* ×*extranea* Beck ex Gugler [*C. jacea* subsp. *jacea* × *C. nigrescens* subsp. *nigrescens*] led to this new combination and the automatic establishment of the autonym, *C.* ×*extranea* nothosubsp. *extranea*. It is worth to mention that one of the parents [*C. nigrescens* subsp. *vochinensis* (W. D. J. Koch) Nyman] has not been found and reported for Serbia so far, and its closest location was reported in the vicinity of Požega in NE Croatia (Wagner 1910).

Centaurea* ×*extranea nothosubsp. ***orodensis*** (J. Wagner) Niketić, **comb. et stat. nov.**

[*C. jacea* subsp. *banatica* Hayek × *C. nigrescens* Willd. subsp. *nigrescens*]
≡ *C.* ×*orodensis* J. Wagner, Math. Term. Közlem. 30: 135 (1910) ["*C. banatica* × *nigrescens*"] [basionym].

The hybrid was described from western Romania and the vicinity of Vršac in the Banat region (Vojvodina). Up to now, it has also not been found in the field or in the herbarium, and the only informations available to us are the description and illustration in the protologue (Wagner 1910). While *C. jacea* subsp. *banatica* Hayek is widespread in the vicinity of Vršac, the presence of another parental species (*C. nigrescens* Willd.) in Vojvodina was only mentioned for Bačka region in Vojvodina (Kovács 1929, Boža 1979).

M. Niketić

Hieracium nikolae (Zahn) Niketić, **comb. et stat. nov.**

≡ *H. pseuderiopus* [grex *H. klisurae* Zahn ex Urum] subsp. *nikolae* Zahn in Engl., Pflanzenr. 4(280), 79: 1074 (1922) [basionym] ≡ *H. pseuderiopus* [subsp. *klisurae*] var. *nikolae* (Zahn) Hayek, Repert. Spec. Nov. Regni Veg. Beih. 30(2): 955 (1931) ≡ *H. klisurae* subsp. *nikolae* (Zahn) Zahn in Asch. & Graebn., Syn. Mitteleur. Fl. 12(3): 706 (1938).

IND. LOC.: [Serbia, Stara Planina Mts] "Serbien: Sveti Nikola (Pančić pro *H. prenanthoides*; Exemplar im Bot. Institut der Univ. Wien)!". HOLOTYPE (**here designated** by M. Niketić & D. Reich): "Hieracium prenanthoides Vill / Flora Serbica / Sv. Nikola / 1878 leg. Pančić"; "Bearbeitet für das „Pflanzenreich". / H. pseuderiopus Zahn / B. H. klisurae Z / subsp. nikolae Zahn / 1918 det. Zahn" (WU 055806! [photo!] image available at https://wu.jacq.org/WU0055806); pseudotype: BEOU 11594!

Taxon was originally published by Zahn (1922) based on material of J. Pančić in WU. Zahn emphasized on a separate label that the herbarium specimen was explicitly intended for the original publication. Since there is no other specimen in WU, the specimen is designated as the holotype. Hybridogenous combination "*H. sparsum-racemosum*" was assumed for *H. pseuderiopus* Zahn in its protologue in the same publication (Zahn 1922). However, at the beginning of the description of the subspecies, *H. pseuderiopus* subsp. *nikolae* Zahn, the same author pointed out that its habitus is quite similar to "*H. sabaudi* subsp. *vagi*". This is already noticeable at first glance, but also on the basis of minute morphological

details such as the presence of very long fimbriate receptacular scales in some individuals (Fig. 1), so the new putative hybridogenous combination would be *H. sparsum-sabaudum*. Since *H. sabaudum* L. belongs to a separate section compared to *H. racemosum* Waldst. & Kit. ex Willd., it is quite justified to treat this taxon as a separate microspecies. Due to its partly amplexicaul leaves, it resembles some representatives of the aggregate *H. djimilense*, from which it differs by relatively rigid leaves, fewer glandular and more stellate hairs on the peduncle and involucre, etc.

Fig. 1. – *Hieracium nikolae* (Zahn) Niketić – receptacle and capitulum.

Recently, the population of this neglected stenoendemic taxon was not exactly found at Sv. [St.] Nikola pass (at the border of Serbia and Bulgaria, Stara Planina Mts), but a few hundred meters further west (Hajdučki Kamen and Orlov Kamen peaks), where the rockier substrate provides suitable conditions for its development (BEO 100155, BEO 100158). It grows on rocky places (red sandstone and slates) in the zone of subalpine spruce (1000–1840 m s.m.), along the edge of the forest or often on completely open pasture slopes. It was also found in the central part of the mountain near the main peak (Midžor), on the Vojvodin Venac – Žarkova Čuka peaks stretch (Fig. 14). More than 1000 mature individuals were found in the population.

Specimens examined:

E Serbia, Stara Planina, Sveti Nikola pass, in forest, MGRS 34T FP30, coll. (1873) & det. J. Pančić 1874 (sub *H. prenanthoides*), rev. M. Niketić Jul-2006 (BEOU 11594).

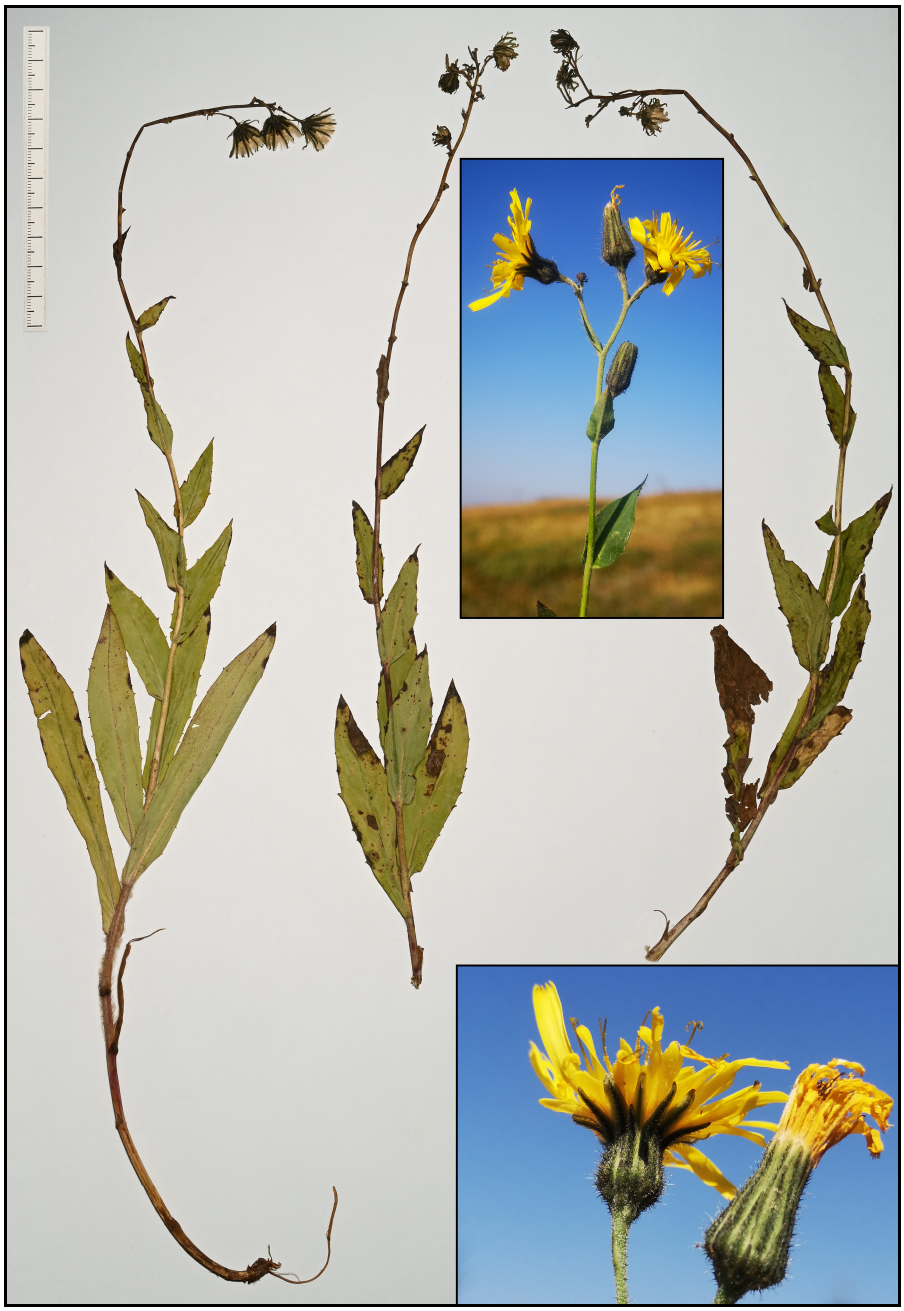

Fig. 2. – *Hieracium nikolae* (Zahn) Niketić – Mt Stara Planina (BEO 100158) (photo M. Niketić).

E Serbia, Stara Planina, Žarkova Čuka peak, silicate, 1500-1848 m, MGRS 34T FP30, coll. & det. M. Niketić, 16-Jul-2009 (BEO 100087).

E Serbia, Stara Planina, Žarkova Čuka peak, rocks and pastures, sandstone, S exp., 1500-1848 m, MGRS 34T FP30, coll. & det. M. Niketić, 17-Jul-1998 (BEO 100135).

E Serbia, Stara Planina, Žarkova Čuka peak, highmountain pastures and rocky grounds in *Picea excelsa* zone, silicate, MGRS 34T FP30, coll. & det. M. Niketić, 28-Aug-2022 (BEO 100138).

E Serbia, Stara Planina, Žarkova Čuka peak, silicate, 1600-1848 m, MGRS 34T FP30, coll. & det. M. Niketić, 26-Sep-2021 (BEO 100156).

E Serbia, Stara Planina, Žarkova Čuka peak, 1600-1848 m, MGRS 34T FP30, coll. M. Niketić, M. Jovanović, 12-Sep-2006, det. M. Niketić (BEO 100157).

E Serbia, Stara Planina, Zanoga, above Kupinov Do, screes in *Picea excelsa* zone, silicate, 1100-1400 m, MGRS 34T FP30, coll. & det. M. Niketić, 16-Jul-2009 (BEO 100088).

E Serbia, Stara Planina, Zanoga, meadows in *Picea excelsa* zone, silicate, 22.630166° E, 43.397414° N, MGRS 34T FP30, coll. & det. M. Niketić, 28-Aug-2022 (BEO 100143).

E Serbia, Stara Planina, Vojvodin Venac peak, edge of *Picea excelsa* forest, 22.62586° E, 43.38192° N, MGRS 34T FP30, coll. & det. M. Niketić, 28-Aug-2022 (BEO 100139).

E Serbia, Stara Planina, between Hajdučki Kamen and Orlov Kamen peaks, 1000-1700 m, MGRS 34T FP21, coll. & det. M. Niketić, 19-Jul-1998 (BEO 100155).

E Serbia, Stara Planina, Hajdučki Kamen, silicate, 1400 m, MGRS 34T FP21, coll. & det. M. Niketić, 11-Aug-2006 (BEO 100158) (Fig. 2).

M. Niketić

Hieracium vestiticeps (Zahn) Niketić, **comb. et stat. nov.**
[non *H. vesticeps* Brenner, Meddel. Soc. Fauna Fl. Fenn. 31: 150 (1906)]
≡ *H. sparsiflorum* subsp. *vestiticeps* Zahn, Magyar Bot. Lapok 10: 170 (1911) [basionym] ≡ *H. sparsum* subsp. *vestiticeps* (Zahn) Zahn in Engl., Pflanzenr. 4(280), 79: 1027 (1922) ≡ *H. sparsum* [subsp. *hololeion*] var. *vestiticeps* (Zahn) Hayek, Repert. Spec. Nov. Regni Veg. Beih. 30(2): 876 (1931).

IND. LOC.: "Bulgaria Samokov (Laus)" [most probably on Mt Rila]. LECTOTYPE (designated by Szeląg (2015)): "Hieracium sparsiflorum Frv. / ssp. vesticeps Oborny et Zahn / Bulgarica: Samokov / VII. 908 leg. Laus m. p."; "H. sparsiflorum Friv". / ssp. vestiticeps Ob. et Zahn" (s.n.

PR [photo!] image available at https://archiwum.botany.pl/ibwyd/pol-b-j/pbj60.html).

This plant was described and reported from W Bulgaria [Mt Rila (Samokov), Mt Vitoša, Pirin Mts (Suhodol)]. It was also recorded for Stara Planina Mts in Bulgaria (Szeląg 2006). Data for Macedonia (s.l.) (Hayek 1931) administratively refers to Pirin Macedonia in Bulgaria, not to North Macedonia. Taxon was traditionally treated as infraspecific within *H. sparsum* Friv. The main reason for its rising to specific rank was its putative hybridogenous origin, which was observed in newly discovered populations in Serbia. In terms of size, morphology, ecology and phenology, individuals of this species are intermediate compared to *H. sparsum* (*H.* sect. *Cernua* R. Uechtr.) and *H. knafii* (Čelak.) Zahn [*H.* sect. *Tridentata* (Fr.) Arv.-Touv.] which also occur in their sympatric zone in SE Serbia. According to Szeląg (2006) *H. vestiticeps* ("*H. sparsum* subsp *vestiticeps*") could be classified between *H. sparsum* and *H. racemosum* Waldst. & Kit. s.l., and morphologically is very similar to the Carpathian *H. fagarasense* (Nyár. & Zahn) Nyár. (*H. sparsum* subsp. *fagarasense* Nyár. & Zahn). For this reason, Szeląg (2006) excluded the last species from *H.* sect. *Cernua*. *Hieracium vestiticeps* has fewer and smaller leaves on the stem, longer acladium, different indumentum on the stem and involucre than *H. fagarasense*, etc. and probably has a different origin as well. Several other current Zahn's subspecies of *H. sparsum*, with stellate hairs on the leaves, can also be considered hybridogenous. For distribution of *H. vestiticeps* in Serbia, see page 50.

M. Niketić

Omalotheca roeseri subsp. ***pichleri*** (Murb.) Niketić, **comb. nov.** (Fig. 3).

[Barina, Somogyi, Pifkó & Rakaj, Phytotaxa 378(1): 70 (2018), "Murb. (Rohlena)", comb. inval.]

≡ *Gnaphalium pichleri* Murb., Acta Univ. Lund. 27(5): 106. 1891 [basionym] ≡ *Gnaphalium roeseri* subsp. *pichleri* (Murb.) Rohlena, Sitzungsber. Königl. Böhm. Ges. Wiss. Prag, Math.-Naturwiss. Cl. 1912(1): 60 (1913) ≡ *Omalotheca pichleri* (Murb.) Holub, Bot. J. Linn. Soc. 71: 271 (1976).

Recent molecular phylogenetic studies (Urtubey *et al.* 2016, Smissen *et al.* 2020) have shown that it is justified to separate the genus *Omalotheca* Cass. from *Gnaphalium* L., and this confirmed Holub's treatment in the *Flora Europaea* from a long time ago (Holub 1976). For the endemic Balkan mountain plant *O. roeseri* (Boiss. & Heldr.) Holub, even today there are conflicting understandings of its taxonomic position and delimitation of its populations. On the one hand, it is still considered to belongs to the genus *Gnaphalium*, where it is either separated into two

Fig. 3. – *Omalotheca roeseri* subsp. *pichleri* (Murb.) Niketić.

separate species (Greuter 2006+) or subspecies (Strid 1991, Dimopoulos *et al.* 2013). On the other hand, it is treated as a species of *Omalotheca*, whereby no separation of populations is adopted (Hassler 2004+, POWO 2022), unlike the older understanding in the *Flora Europaea* which recognizes two different species (Holub 1976). It should be borne in mind that the two main clusters of populations of the species are geographically isolated. The first group (*roeseri*) is situated in the south of Greece from the Peloponnese (Mt Taygetos, Mt Chelmos), Mt Vardousia and Mt Parnassus, from where *O. roeseri* (Boiss. & Heldr.) Holub was described. The second

group (*pichleri*) occurs in the SE Dinaric – Scardo-Pindic mountain range, from Pindus in northern Greece in the south, through Albania, North Macedonia, Kosovo, Metohija, Montenegro, northwest to SE Herzegovina (Bjelčić 1983, Strid 1991, Dimopoulos *et al.* 2013, Greuter 2006+, Barina *et al.* 2018). Otherwise, some earlier references to the south group (*roeseri*) for the flora of Albania in the *Checklist of vascular plants of Albania* were treated as doubtful (Barina *et al.* 2018). The morphological differences between them are given in Holub (1976) and Strid (1991). Bearing in mind the mentioned geographical isolation and subtle morphological differences between these groups, we accepted the treatment of Greek authors (Strid 1991, Dimopoulos *et al.* 2013), who considered them different subspecies. However, current results of phylogenetic analyzes require their transfer to the genus *Omalotheca*. It is noteworthy that the same combination also appear in Barina *et al.* (2018) but the authors omitted to validly establish a new combination (Art. 41.1) and also wrongly included Rohlena as the author of combination (which actually only applies within the genus *Gnaphalium*).

Specimens examined:

Metohija, Šar Planina Mts, Kobilica peak, Treskavac (Sedlo) pass, cirque, 2000-2400 m, MGRS 34T DM86, coll. M. Niketić, Š. Duraki, 19-Aug-2006, det. M. Niketić (BEO 100175).

Metohija, Prokletije Mts, Marijaš peak, 1800-2500 m, MGRS 34T DN21, coll. & det. M. Niketić, 28-Aug-1997 (BEO 100176) (Fig 3).

M. Niketić

Floristic notes

New and confirmed taxa for the flora of Serbia

MAGNOLIOPSIDA

APIACEAE (UMBELLIFERAE)

Pimpinella tragium Vill., Prosp. Hist. Pl. Dauphiné: 24 (1779) subsp. ***tragium***.

= *P. tragium* subsp. *lithophila* (Schischk.) Tutin, Feddes Repert. 79: 62 (1968).

Pimpinella tragium is a morphologically very variable and at the same time taxonomically complex species (Bogdanović & Ruščić 2011). In Serbia, the presence of *P. tragium* subsp. *polyclada* (Boiss. & Heldr.) Tutin was reported in the upper zone of Mt Ostrozub, in SE Serbia (Nikolić & Diklić 1986). Recently, one more subspecies, *P. tragium* subsp. *tragium*, was recorded as a new taxon for the flora of Serbia. This subspecies occurs in a relatively large population on Mt Rudina (Fig. 21), in the extreme

southeast of the country. In the new locality, the optimal habitats for this plant are limestone rocks and screes, as well as open steppe pastures formed on a shallow limestone substrate, at lower altitudes (Fig 4).

Fig. 4. – *Pimpinella tragium* Vill. subsp. *tragium* (SE Serbia, Bosilegrad) (photo G. Fodulović).

Another taxon, *P. tragium* subsp. *lithophila* (Schischk.) Tutin, which differs from the type subspecies by its dissected and ovate leaf segments, was also recorded in the Balkans. In fact, its morphological characteristics correspond to a large extent to the plant shown here as new for Serbia, which could also be designated as the last subspecies. However, here we adopt the conclusions of the taxonomic study by Yurtseva & Tikhomirov

(1998), which could not confirm morphological differences between *P. tragium* subsp. *lithophila* and typical *P. tragium*. The lack of sufficiently clear evidence for the separation of the two last-mentioned taxa is based on the great variability of the qualitative characteristics of the leaves, e.g. incision and shape of leaf lobes, which includes the existence of numerous transitional forms. In this way, we would support the inclusion of *P. tragium* subsp. *lithophila* under the name *P. tragium*, as suggested by the given authors. A similar concept is supported by some of the more recent floristic and nomenclatural sources (Dimopoulos *et al.* 2013, Bartolucci *et al.* 2018).

First record:

SE Serbia, Bosilegrad, village Izvor, limestone, MGRS 34T FN20, coll. V. Slavkovska, B. Zlatković, det. B. Zlatković, 10-July-2016 (sub *P. tragium* subsp. *lithophila*), rev. B. Zlatković 14-Feb-2023 (*3783* Herbarium of the Faculty of Pharmacy, University of Belgrade).

A new species for the flora of Serbia.

B. Zlatković, V. Slavkovska

ASTERACEAE (COMPOSITAE)

Calendula officinalis L., Sp. Pl.: 921 (1753).

The genus *Calendula* L. comprises 12 species distributed in the western Himalayas, Macaronesia, the Mediterranean region to the Sahara and the Iberian Peninsula (POWO 2022). *Calendula officinalis* L. is native to the western Mediterranean region, more specifically Spain, while it has been introduced to the rest of Europe as well as Asia, Africa, Australia, North and South America (POWO 2022). It is known as a medicinal plant and as a plant grown in gardens and parks. Gajić (1975) stated that this species grows wild in Serbia, but without naming the localities.

Two populations of this species were found during floristic surveys at Mt Tara (June 2022) (Fig. 5) and Mt Zlatibor (September 2022) (Fig. 26). The population at Mt Tara (Konjska Reka) counted up to 10 individuals. It was recorded on limestone, in the community *Agropyretum repentis* s.l., with the following accompanying taxa: *Agropyron repens* (L.) P. Beauv., *Rubus idaeus* L., *Arrhenatherum elatius* (L.) J. Presl & C. Presl, *Stellaria holostea* L., *Stellaria media* (L.) Cirillo, *Capsella bursa-pastoris* (L.) Medik., *Pastinaca sativa* subsp. *urens* (Req. ex Godr.) Čelak., *Vicia sepium* L., *Malva sylvestris* L., *Galeopsis speciosa* Mill. and *Achillea millefolium* L. The population at Mt Zlatibor (Dobroselica) comprised three individuals and was found on serpentine bedrock, in the community *Festucetum pratensis* s.l., with the following accompanying taxa: *Festuca pratensis*

Huds., *Agropyron repens* (L.) P. Beauv., *Agrostis capillaris* L., *Deschampsia cespitosa* (L.) P. Beauv. and *Cichorium intybus* L.

Fig. 5. – *Calendula officinalis* L. (W Serbia, Mt Tara, Konjska river gorge) (photo V. Djordjević).

The localities of this species in the Tara and Zlatibor Mountains are the first records of this allochthonous species as a wild species in Serbia. The population from Mt Tara was found at a distance of several hundred metres from the first inhabited houses and at an even greater distance from the first settlements. The population from Mt Zlatibor, on the other hand, was found at a shorter distance from the first inhabited houses, but far enough to assume that it was in the initial stage of naturalization. No negative environmental or human health impacts have been identified from the spread of this species in its habitats. However, as it is an annual or biennial species (Gajić 1975), research needs to be continued in order to determine the rate of naturalization and its invasive potential.

First records:

W Serbia, Mt Tara, Konjska river gorge, *Agropyretum repentis*, limestone, 1160 m, E 19.4162695°, N 43.8995442°, MGRS 34T CP76, coll. & det. E. Kabaš, P. Lazarević, V. Djordjević, 17-Jun-2022 (BEOU BBD_1323) (Fig 5).

W Serbia, Mt Zlatibor, Dobroselica village, Okolište – Glavica, *Festucetum pratensis*, serpentine, 1144 m, E 19.71033°, N43.635075°, MGRS 34T CP93, E. Kabaš, P. Lazarević, V. Djordjević, S. Vukojičić, 22-Sep-2022 (field. observ.).

First records of this allochthonous species in the initial phase of naturalization in Serbia.

V. Djordjević, E. Kabaš

Centaurea pugioniformis Nyár., Borbásia Nova 19: 5 (1943) (Figs 6, 7).

Centaurea pugioniformis Nyár. is Carpathian endemic species so far known only from Romania in the following regions: Cluj, Braşov, Crişana, Banat and Iaşi. It is very variable plant within whose populations several infraspecific taxa have been described by the author of the species (Nyárády in Prodan & Nyárády 1964). According to Dostál (1976) it belongs to *C.* sect. *Fimbriatae* (Hayek) Dostál and it was sometimes partially synonymized with C European-Balkan *C. macroptilon* Borbás (Dostál 1976, Greuter 2006+). Representatives of the mentioned section probably arose by hybridization between taxa of *C.* sect. *Jacea* (Juss.) DC. and *C.* sect. *Phrygia* Pers. [*C.* sect. *Lepteranthus* (Neck.) DC., nom. inval.]. However, *C. pugioniformis* shares many common morphological characters with *C. indurata* Janka (from *C.* sect. *Phrygia*) which is distributed in C Europe and the Balkan Peninsula, but it has not yet been reported for the flora of Serbia. In relation to *C. indurata* its phyllaries are less numerous and have shorter, wider and less curved appendages (Fig 6).

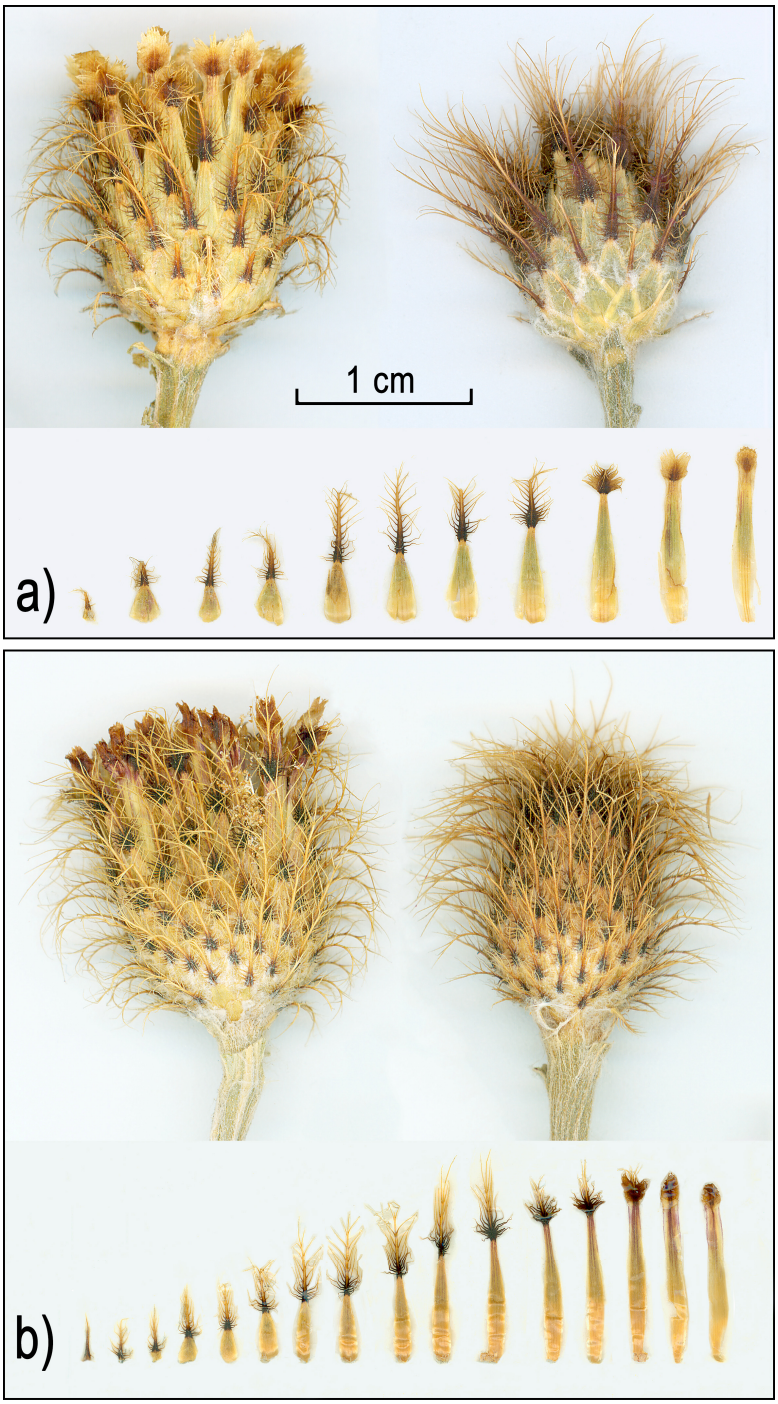

Fig. 6. – *Centaurea pugioniformis* Nyár. (Đerdap) (a) and *Centaurea indurata* Janka (Slovakia, Pukanec, BEO 26531) (b).

Fig. 7. – *Centaurea pugioniformis* Nyár. (NE Serbia, Đerdap gorge, BEO 100133).

In NE Serbia *C. pugioniformis* grows only in several localities in Đerdap gorge (Fig. 14) area and it was firstly and previously preliminary announced by Niketić (2010). It most often inhabits rocky places around the edges of thermophilic forests with *Quercus* spp. and *Carpinus orientalis*. The three newly recorded localities of *C. pugioniformis* in Đerdap gorge represent the southernmost distributional findings of the species and the first one in the Balkan Peninsula.

In Kazan locality (BEO 100058) *C. pugioniformis* was found in dry grasslands on limestone. Population size was estimated to c. 100 reproductive individuals, but probably the population is much larger. It was not possible to estimate the size of the subpopulations near Boljetin and Tekija because the data comes from the herbarium collections.

First records:

NE Serbia, Đerdap gorge, Kazan, limestone, 70-500 m, MGRS 34T FQ04, coll. & det. M. Niketić, 28-Aug-2009 (BEO 100058).

NE Serbia, Đerdap gorge, Boljetin, Greben, *Carpinus orientalis* forest, 100-300 m, MGRS 34T EQ83, coll. & det. N. Diklić, 31-Jul-1964 (sub *C. phrygia*), rev. M. Niketić, 25-Jul-2011 (s.n. BEO).

NE Serbia, Đerdap gorge, Tekija, Kovilovski stream, 80-250 m, MGRS 34T FQ14, coll. V. Nikolić, 07-Aug-1966, det. N. Diklić (sub *C. phrygia* subsp. *stenolepis*), rev. M. Niketić, 25-Jul-2011 (s.n. BEO) (Fig. 7).

A new species for the flora of Serbia and the Balkan Peninsula.

M. Niketić

Hieracium basicuneatum (Zahn) Prain, Index Kew., Suppl. 4: 109 (1913).
≡ *H. bifidum* [stat. indet.] *basicuneatum* Zahn in Schinz & Keller, Fl. Schweiz, ed. 2, 2: 286 (1905) [basionym] ≡ *H. bifidum* subsp. *basicuneatum* (Zahn) Zahn., Neue Denkschr. Allg. Schweiz. Ges. Gesammten Naturwiss. 40: 413 (1906) ≡ *H. bifidum* [subsp. *subcaesium*] var. *basicuneatum* (Zahn) Hayek, Repert. Spec. Nov. Regni Veg. Beih. 30(2): 911 (1931).

Although it formally belongs to the *H. bifidum* group, this species, like the next one (*H. cardiobasis* Prain), also resembles the *H. murorum* group due to the higher presence of black glandular hairs on the peduncle and capitula. That's why Zahn included it into separate subgroup ("Grex. *H. subcaesium*") within *H. bifidum* Kit. ex Hornem. According to Sell & West (1976) this taxon deserves the rank of species.

Fig. 8. – *Hieracium basicuneatum* (Zahn) Prain (Kosovo, Šar Planina Mts, BEO 100099).

Distribution range of the species includes the Alps, Tatra Mts, the Carpathians and the Balkan mountains, but so far it has only been recorded in the Balkans for the flora of Croatia, Montenegro and Greece (Greuter 2006+). These data are actually taken from Zahn (1921) who claims that

the taxon ranges from "Illirien! bis Griechenland!". This could mean that the author may have seen some specimens in material from Kosovo and Metohija, North Macedonia and Albania. While G. Gottschlich brings into doubt on the presence of the Greek flora (Dimopoulos *et al.* 2016), the presence of the species has been confirmed in Montenegro (Rohlena 1942), and more recently it has also been found in Montenegro in several places (coll. M. Niketić BEO). The only one sample from Serbia was collected at the edge of beech forest in subalpine zone on Šar Planina Mts. (Fig. 26).

First record:

Kosovo, Šar Planina Mts, Prevalac ridge, 1 km toward Brezovica village, beech forest near the road, silicate, 1500-1700 m, MGRS 34T DM97, coll. V. Stevanović, 27-Jun-1997, det. M. Niketić (BEO 100099) (Fig 8).

A new species for the flora of Serbia.

M. Niketić, V. Stevanović

Hieracium cardiobasis Prain, Index Kew., Suppl. 4: 110 (1913).

≡ *H. bifidum* subsp. *cardiobasis* Zahn, Neue Denkschr. Allg. Schweiz. Ges. Gesammten Naturwiss. 40: 412 (1906), nom. illeg. (nom. superfl. for *H. bifidum* subsp. *subcaesium* (Fr.) Zahn) ≡ *H. bifidum* [subsp. *subcaesium*] var. *cardiobasis* Hayek, Repert. Spec. Nov. Regni Veg. Beih. 30(2): 910 (1931).

= *H. bifidum* subsp. *mesobifidum* Gottschl., Kochia 14: 152 (2021).

The original name with the epithet *cardiobasis* was nomenclaturally superfluous when published (Art. 52.2) (Gottschlich 2021), although its author (Zahn 1906) probably just wanted to point out the *H. bifidum* subsp. *subcaesium* (Fr.) Zahn as a misapplied name in his previous publication (Zahn 1905), rather than a true synonym. The replacing name in specific rank (Prain 1913) is legitimate and has priority since 1913 (Art. 58.1). *Hieracium cardiobasis* Prain has a broadly Central European distribution and is in allopatry with the E Baltic *H. subcaesium* (Fr.) Lindeb. The treatment of these taxa at specific rank is consistent with the concept of Sell & West (1976). Since both taxa are assumed to have arisen from the crossing or introgression of *H. bifidum* Kit. ex Hornem. and *H. murorum* L. (Zahn 1921, Gottschlich 2021), there is no basis for considering them conspecific with the former. According to Hassler (2004+) *H.* ["*bifidum* subsp."] *cardiobasis* is possibly a synonym of *H. obscuricapitatum* Schuhw. ["*H. bifidum* subsp. *obscurisquamum* (Zahn) Greuter"] whereby the presence of the last taxon is also reported for the flora of Serbia (although it is unclear on the basis of which sources). However, despite the

Fig. 9. – *Hieracium cardiobasis* Prain (W Serbia, Mt Tara, BEO 100119).

similarity of the leaf shape, the taxa mentioned clearly differ in the hairiness of the leaves and inflorescence, etc. (Zahn 1921, Gottschlich 2021). Although Hassler (2004+) mentioned the presence of *H. cardiobasis* only the flora of Germany, according to Greuter (2006+), the taxon is also present in the Alpine-Carpathian countries, as well as in all Balkan countries, except Serbia, Bulgaria and Turkey. Niketić (2003) preliminary reported this species for the flora of Serbia without specifying localities.

The species was found on limestone terrains in the hilly and mountainous regions of western and south-western Serbia (Fig. 21). The number of mature individuals is more than 1000.

First records:

Metohija, Šar Planina Mts, Brod, Gradski Kamen, limestone, 1600-1700 m, MGRS 34T DM74, coll. M. Niketić, V. Stevanović, D. Lakušić, 30-Sep-1991, det. M. Niketić (BEO 100166).

Metohija, Šar Planina Mts, Brod, Gradski Kamen, limestone, 1450-1700 m, MGRS 34T DM74, coll. & det. M. Niketić, 30-Sep-1991 (s.n. BEO).

Metohija, Mts Prokletije, Sušica river gorge, limestone, 1400-1700 m, MGRS 34T DN31, coll. & det. M. Niketić, 22-Aug-1997 (BEO 100063).

Metohija, Mts Prokletije, Jablanica river gorge, limestone, 1000-1500 m, MGRS 34T DN43, coll. & det. M. Niketić, 27-Aug-1997 (BEO 100062).

Metohija, Mts Prokletije, Marijaš peak, limestone, 1800-2500 m, MGRS 34T DN21, coll. & det. M. Niketić, 28-Aug-1997 (BEO 100061).

W Serbia, Mt Mokra Gora, Beli Rzav river gorge, limestone, S exp., 550-900 m, MGRS 34T CP75, coll. & det. M. Niketić, 09-Oct-1997 (BEO 100064).

W Serbia, Mt Tara, Banjska Stena, above Drina river, limestone, 300-700 m, MGRS 34T CP76, coll. S. Jovanović, G. Tomović, M. Niketić, 02-Jun-1998, det. M. Niketić (BEO 100119) (Fig 9).

A new species for the flora of Serbia.

M. Niketić

Hieracium knafii (Čelak.) Zahn in Schinz & Keller, Fl. Schweiz, ed. 2, 2: 342 (1905)

≡ *H. sylvaticum* var. *knafii* Čelak., Prodr. Fl. Böhmen: 203 (1871) [basionym] ≡ *H. laevigatum* subsp. *knafii* (Čelak.) Zahn in Engl., Pflanzenr. 4(280), 77: 859 (1921) ≡ *H. laevigatum* [subsp. *gothicum*] var. *knafii* (Čelak.) Hayek, Repert. Spec. Nov. Regni Veg. Beih. 30(2): 963 (1931).

– "*A. camkorijense*" sensu Niketić & Zlatković in Greuter & Raus, Willdenowia 28: 166 [non Zahn, Magyar Bot. Lapok 10: 172 (1911)].

It belongs to very complex group of *H. laevigatum* Willd. [*H.* sect. *Tridentata* (Fr.) Arv.-Touv.] and is characterized by leaves that are more grouped at the base of the stem. It inhabits Central Europe and the Balkans. For the area of the Balkan Peninsula, it was known for the flora of Bosnia and Herzegovina and Bulgaria. At the first time it was erroneously recorded as "*H. camkorijense* Zahn" for SE Serbia (Mt Besna Kobila) (Greuter & Raus 1998) and then preliminary announced in the abstract (Niketić 2003). Although Niketić (2003) did not mention specific localities in the abstract, nor did mention that the report for *H. camkorijense* (Greuter & Raus 1998) was erroneous, Greuter (2006+) states that it was allegedly corrected in the abstract.

This species was found in several places in the regions of eastern and southeastern Serbia (Fig. 21), in montane zone and in silicate substrate. It is

often found in secondary eroded places next to dug-up forest roads as well as in stony places in beech and oak forests. Over 10000 mature individuals have been observed so far.

Fig. 10. – *Hieracium knafii* (Čelak.) Zahn (S Serbia, Mt Rujan, BEO 100133).

Previous erroneous record:

SE Serbia, Mt Besna Kobila, pastures, silicate, 1300-1900 m, MGRS 34T EN90, FN00, coll. B. Zlatković, Jul-1996, det. M. Niketić (BEO 100082) (Niketić & Zlatković in Greuter & Raus 1998: 172, sub *H. camkorijense*).

New records:

E Serbia, Mts Stara Planina, Babin Zub peak, edge of the beech forest near the mountain lodge, pastures, silicate, MGRS 34T FP30, coll. & det. M. Niketić, 28-Aug-2022 (BEO 100140).

SE Serbia, Bosilegrad, Topli Dol village, silicate, 1100-1500 m, MGRS 34T FN11, coll. & det. M. Niketić, 09-Oct-2010 (BEO 100070).

SE Serbia, Mt Dukat Planina, between Bistar and Jarešnik, silicate, 900-1400 m, MGRS 34T FM19, coll. & det. M. Niketić, 10-Oct-2010 (BEO 100067, 100069).

SE Serbia, Mt Dukat Planina, Jarešnik village, between Leštarska Mahala and Nazarička river, *Quercus petraea* forest, silicate, MGRS 34T FM19, coll. M. Niketić, G. Tomović, G. Petkovski, 24-Jul-2022, det. M. Niketić (BEO 100159).

SE Serbia, Mt Lisinska Planina, Valozi, 1400-1750 m, MGRS 34T FN01, coll. & det. M. Niketić, 21-Aug-2020 (BEO 100161).

SE Serbia, Vlasina plateau, between Kostroševci and Palja, 1 km from Kostroševci, silicate, 800-1000 m, MGRS 34T FN13, coll. & det. M. Niketić, 14-Sep-2006 (BEO 100071).

SE Serbia, Vlasina plateau, Mali Vrh peak, silicate, 1600-1678 m, MGRS 34T FN13, coll. & det. M. Niketić, 29-Aug-1991 (BEO 100072).

SE Serbia, Vlasina plateau, Klisura village, silicate, 800-1000 m, MGRS 34T FN13, coll. & det. M. Niketić, 31-Aug-1991 (BEO 100077).

SE Serbia, Vlasina plateau, Vrtop peak, silicate, 1300-1721 m, MGRS 34T FN13, coll. & det. M. Niketić, 29-Aug-1991 (BEO 100076).

SE Serbia, Vlasina plateau, Palja village, silicate, 1000-1300 m, MGRS 34T FN11, coll. M. Niketić, V. Vladimirov, 07-Jul-2014, det. M. Niketić (BEO 100079) (Fig 10).

Confirmed species for the flora of Serbia.

M. Niketić

Hieracium pseudotranssilvanicum (Zahn) Zahn, Bul. Grăd. Bot. Univ. Cluj 8: 73 (1929).

≡ *Hieracium atratiforme* subsp. *pseudotranssilvanicum* Zahn in Engl., Pflanzenr. 4(280), 79: 1053 (1922) [basionym].

This species is of hybrid origin with the putative parental species *H. sparsum* Friv. (*H.* sect. *Cernua* R. Uechtr.) and *H. transsilvanicum* Schur

Fig. 11. – *Hieracium pseudotranssilvanicum* (Zahn) Zahn (E Serbia, Stara Planina Mts, BEO 100095).

ex Fr. (*H.* sect. *Transsilvanica* (Zahn) Schljakov). Until now, it was known as a local endemite from SW Carpathians (Mt Retezat and Mt Godeanu), and after Nyárády (1965), it was almost never mentioned in botanical publications. In E Serbia (Fig. 14) it also grows in the subalpine (spruce) zone on silicate substrate, on moist rocks next to mountain streams. Record from Serbia was initially announced by Niketić (2003). Collected plant from Serbia morphologically matches the specimen described as *H. pseudotranssilvanicum* f. *basipellitum* Nyár. from Mt Retezat (BM 001046631) [https://plants.jstor.org/stable/viewer/10.5555/ al.ap.specimen. bm001046631]. *Hieracium atratiforme* Simonk. is a closely related species of the same origin and similar distribution. In addition to the main part of the species range in the SW Carpathians, a disjunct population has also been reported from southwestern Serbia (Metohija, Prokletije Mts).

First record:

E Serbia, Mts Stara Planina, Krvave Bare, silicate, 1500-1800 m, MGRS 34T FN49, coll. & det. M. Niketić, 03-Aug-1993 (BEO 100095) (Fig 11).

A new species for the flora of Serbia and the Balkan Peninsula.

M. Niketić

Hieracium vestiticeps (Zahn) Niketić[1]
[non *H. vesticeps* Brenner, Meddel. Soc. Fauna Fl. Fenn. 31: 150 (1906)]
≡ *H. sparsiflorum* subsp. *vestiticeps* Zahn, Magyar Bot. Lapok 10: 170 (1911) [basionym] ≡ *H. sparsum* subsp. *vestiticeps* (Zahn) Zahn in Engl., Pflanzenr. 4(280), 79: 1027 (1922) ≡ *H. sparsum* [subsp. *hololeion*] var. *vestiticeps* (Zahn) Hayek, Repert. Spec. Nov. Regni Veg. Beih. 30(2): 876 (1931).

This probably apomictic and neglected plant was previously known only from western Bulgaria as infraspecific taxon of *H. sparsum* Friv. (Greuter 2006+, Szeląg 2015). The newly discovered populations in Serbia are located in silicate mountains of SE Serbia (Fig. 26), where there is also a zone of sympatry of putative parental species, *H. sparsum* Friv. (*H.* sect. *Cernua* R. Uechtr.) and *H. knafii* (Čelak.) Zahn [*H.* sect. *Tridentata* (Fr.) Arv.-Touv.]. It was observed that some specimens can be up to 45 (60) cm tall [vs. 20–35 cm in Zahn (1938)] and that height is shorter than that of *H. knafii* and taller than that of *H. sparsum*. Capitula are not nodding in bud (as in *H. sparsum*) but only slightly deflexed, it also blooms after *H. knafii* and

[1] Nomenclatural part see on page 33.

Fig. 12. – *Hieracium vestiticeps* (Zahn) Niketić (E Serbia, Mt Dukat Planina, BEO 100154) (photo M. Niketić).

before *H. sparsum*, and there is a whole series of intermediate characters between both parental species. While *H. knafii* often inhabits forest habitats, and *H. sparsum* grows on open rocky places, *H. vestiticeps* (Zahn) Niketić mainly occurs in eroded places and crushed screes. About 1000 mature individuals was observed in the altitude range from 1000 to 1700 m a.s.l.

New records:

SE Serbia, Vlasina plateau, Vlasina Rid, 1500 m, silicate, beech forest, MGRS 34T FN03, coll. & det. M. Niketić, 21-Jul-1990 (BEO 100075).

SE Serbia, Mt Besna Kobila, above the mine, 1500-1700 m, silicate, rocks, MGRS 34T FN00, coll. & det. M. Niketić, 23-Jul-1990 (BEO 100074).

SE Serbia, Bosilegrad, Žeravino, Golem Čukar, 1370 m, silicate, 22.349505° E, 42.329318° N, MGRS 34T FM09, observ. M. Niketić, 22-Jul-2022, det. M. Niketić

SE Serbia, Mt Dukat Planina, Karamanica, Borovnjeski Kamik, 1650 m, silicate, 22.3423905° E, 42.3783006° N, MGRS 34T FM09, coll. M. Niketić, G. Tomović, G. Petkovski, 23-Jul-2022, det. M. Niketić (BEO 100154) (Fig. 12).

SE Serbia, Mt Dukat Planina, Karamanica, Srednja Rtina, 1700 m, silicate, 22.314941° E, 42.369170° N, MGRS 34T FM09, coll. M. Niketić, G. Tomović, G. Petkovski, 23-Jul-2022, det. M. Niketić (BEO 100151).

SE Serbia, Mt Dukat Planina, Jarešnik, Leštarska Mahala – Nazarička river, 1000 m, silicate, forest of sessile oak, 22.404988° E, 42.393186° N, MGRS 34T FM19, coll. M. Niketić, G. Tomović, G. Petkovski, 24-Jul-2022, det. M. Niketić (BEO 100153).

SE Serbia, Bosilegrad, Goleš, Goleški Čukar, above Goleška river, 1250 m, silicate, rock crevices and rocky places, in the zone of beech and pine trees that have gone wild, 22.336369° E, 42.334982° N, MGRS 34T FM08, coll. M. Niketić, G. Tomović, G. Petkovski, 25-Jul-2022, det. M. Niketić (BEO 100152).

A new species for the flora of Serbia.

M. Niketić

Onopordum illyricum subsp. ***carduncul***us (Boiss.) Arènes, Notul. Syst. (Paris) 10: 226 (1942).
≡ *O. carduncul*us Boiss., Fl. Orient. 3: 561 (1875) [basionym].

Onopordum illyricum is Mediterranean-submediterranean species native to southern Europe (Portugal, Spain, France, Malta, Italy, Slovenia,

Croatia, Bosnia and Herzegovina, Montenegro, Albania, Serbia (incl. Kosovo), Romania (casually introduced), North Macedonia, Bulgaria, Greece and Turkey-in-Europe) and western Asia (Cyprus, Iran, Iraq, Jordan, Lebanon, Syria and Turkey) (Greuter 2006+). It is widely naturalised in south-eastern Australia and most common in the sub-coastal regions of eastern New South Wales, while also present in Victoria and in some southern parts of South Australia. Illyrian thistle is considered to be a noxious weed in the USA (especially California where efforts to eradicate it from the state's flora have been implemented) (Keil 1993+). This very robust thistle inhabits grasslands, abandoned farmland, edges of fields, roadsides, as well as oak woodlands from 200 m to 500 m altitude (Keil 1993+).

According to *Flora Europaea* (Amaral Franco 1976) within the species, there are two widely accepted subspecies – *O. illyricum* subsp. *illyricum* in W (sub)Mediterranean ("from E. Italy westwards") and *O. illyricum* subsp. *cardunculus* (Boiss.) Arènes in "E. Mediterranean region" and "S. Bulgaria". At the same time, it remained unclear which subspecies are present in the Balkans (except in Bulgaria). It should be noted that neither before nor after this publication were there any serious studies of chorological and morphological differentiation of these subspecies. Hayek (1929) reported *O. illyricum* for almost all regions of the Balkan Peninsula (except Albania), but did not present any infraspecific taxa. Also, without specifying the subspecies, it was presented for the floras of North Macedonia (Bornmüller 1925, Greuter 2006+), Albania (Barina *et al.* 2018), Montenegro (Rohlena 1942) and Serbia (Gajić 1975 – where it was included in the *Flora of SR Serbia*, without any exact locality and with the note "according to Hayek, present in Serbia"). The type subspecies was reported for the flora of Croatia (Nikolić 2005+), Bosnia and Hercegovina (Bjelčić 1983) and Albania (Vangjeli *et al.* 2000), but it was disputed by Barina *et al.* (2018). East Mediterranean subspecies (*cardunculus*) was only mentioned for Bulgaria (Amaral Franco 1976, Stoyanov *et al.* 2021), Greece (Dimopoulos *et al.* 2013), Albania (Greuter 2006+)[2] and, without exact localities, for Croatia (Nikolić 2005+). It was also reported for the flora of Sicily (Greuter 2006+). In relation to the type subspecies, according to Amaral Franco (1976) and our observations, this taxon has larger capitula (corolla 30–35 mm vs. 25–30 mm) with relatively wider involucral bracts and shorter apical spines of bracts (up to 2 mm vs. up to 5 mm). Also, only the outer bracts (not middle) are recurved or patent.

Our preliminary analysis of available herbarium and photo material has so far not confirmed the occurrence of the type subspecies on the Balkan

[2] On the base of misapplied "*O. illyricum* subsp. *horridum*" in Vangjeli *et al.* (2000).

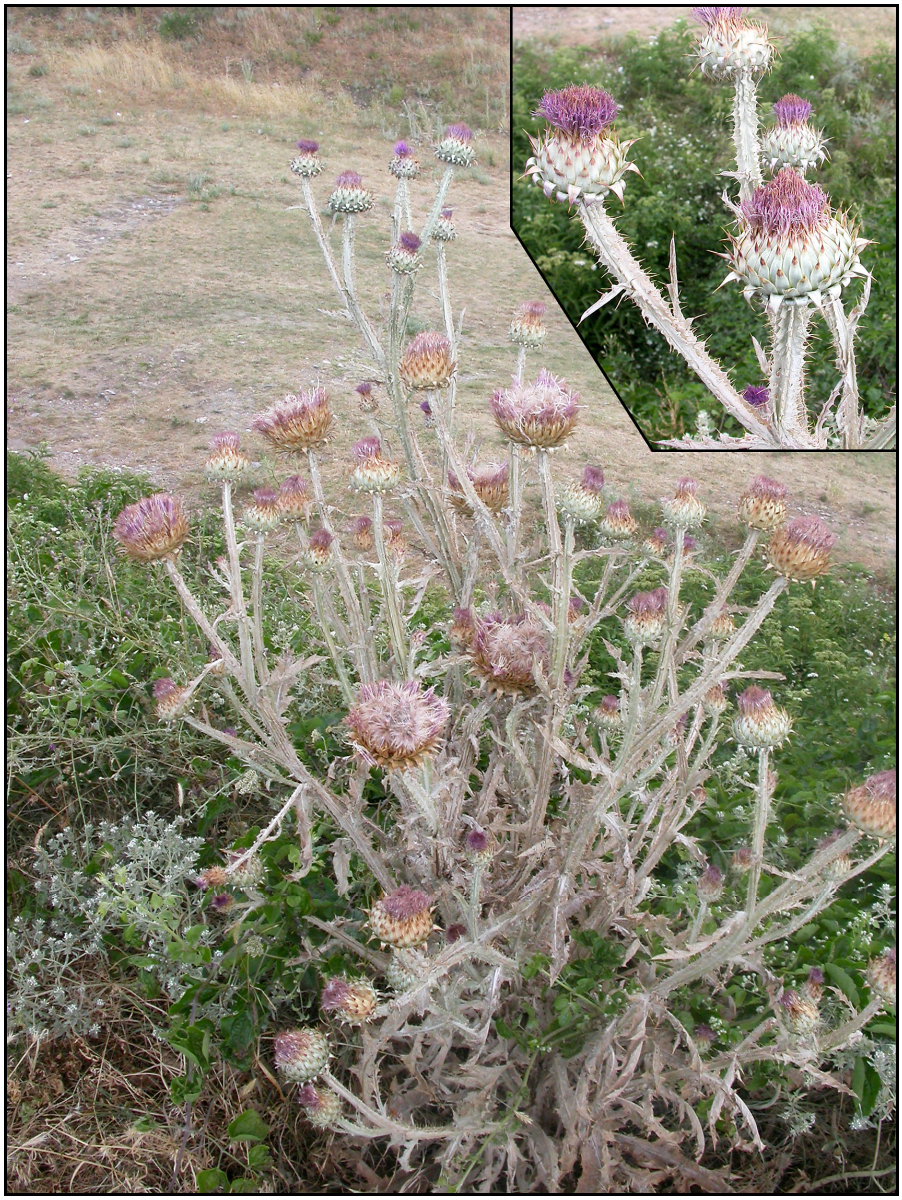

Fig. 13. – *Onopordum illyricum* subsp. *carduncul*us (Boiss.) Arènes (Metohija, Prizren, BEO 100006).

Peninsula. However, *O. illyricum* subsp. *carduncul*us was seen on locations in Greece, Croatia, North Macedonia, Montenegro, Hercegovina and Serbia (probably the first reports for the last four countries). In Metohija region (Kosovo and Metohija province), in the city of Prizren (Kaljaja hill) this plant was found in ruderal habitats within the walls of old fortress, at the

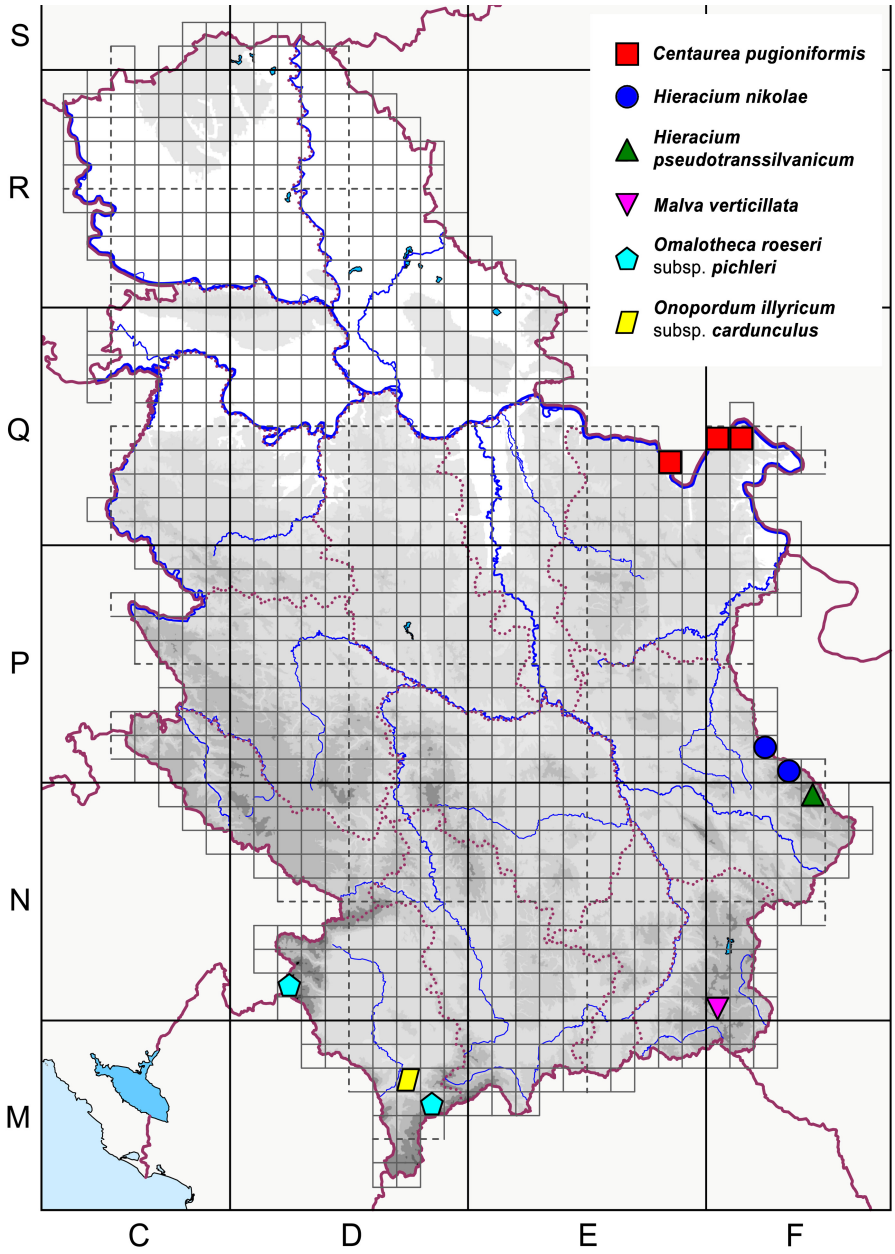

Fig. 14. – Distribution of some new taxa for the vascular flora of Serbia.

elevation of c. 520 m and population size was estimated to c. 30 reproductive individuals (Figs 13, 14). Consequently, it can be concluded that the previous record for *O. illyricum* by Mustafa *et al.* (2015) from the area of Metohija (Mt Paštrik) also corresponds to this subspecies.

First record:

Metohija, Prizren, Kaljaja hill, ruderal habitats next to the walls, limestone, 520 m, MGRS 34T DM77, coll. M. Niketić, G. Tomović, Š. Duraki, det. M. Niketić, 19-Jul-2007 (BEO 100006) (Fig 13).

New and replaced subspecies for the flora of Serbia.

M. Niketić, G. Tomović, Š. Duraki

BRASSICACEAE (CRUCIFERAE)

Erysimum korabense Kümmerle & Jáv., Bot. Közlem. 19: 20 (1921).

This W Balkan endemic plant was described from Mt Korab on the border line between Albania and North Macedonia (Kümmerle & Jávorka 1921) and it is closely related to *E. pulchellum* (Willd.) Boiss. but has smaller leaves (the upper ones wider in the upper part), smaller flowers, longer style, stigma style is clearly wider, and siliqua is densely grey pubescent. This species was not included in the *Flora of SR Serbia* (Nikolić 1972) but it was erroneously reported from south Serbia (Kosovo province) by Polatschek (2013). However, all cited localities are actually situated in North Macedonia, including Aleksandrov Vis and Rudoka peaks on Šar Planina Mts, near the Serbian border. This point was also represented on the map in the *Atlas Florae Europaeae* (Jalas & Suominen 1994: Fig. 2228) and it was the main source (for indicating the presence of the species in Serbia) in the on-line databases *Euro+Med* (Marhold 2011+) and probably *World Plants* (Hassler 2004+).

Within the General collection of the Herbarium of the Natural History Museum in Belgrade (BEO), we found two herbarium sheets from Šar Planina Mts (Vraca and Rudoka peaks) (Fig. 26) that confirm the findings of Polatschek (2013). Having in mind that both records are of quite old origin (collected by I. Rudski in the year of 1939), it was not possible to estimate subpopulations size and threatened factors for this species in Šar Planina Mts.

First records:

Metohija, Šar Planina Mts, Vraca, limestone, 2000-2582 m, MGRS 34T DM73, coll. I. Rudski, Jul-1939, det. M. Niketić (BEO 6567).

Metohija, Šar Planina Mts, Rudoka, Džinibeg, limestone, 1900-2300 m, MGRS 34T DM84, coll. I. Rudski, 15-Jul-1939, det. M. Niketić (BEO 6562) (Fig 15).
A new species for the flora of Serbia.

Fig. 15. – *Erysimum korabense* Kümmerle & Jáv. (Metohija, Šar Planina Mts, BEO 100056).

M. Niketić, G. Tomović

FABACEAE (LEGUMINOSAE)

Cytisus striatus (Hill) Rothm., Feddes Repert. Spec. Nov. Regni Veg. 53: 149 (1944).

≡ *Genista striata* Hill in Veg. Syst., ed. 13: 63 (1768) [basionym] ≡ *Spartium striatum* (Hill) Samp., Herb. Port.: 145 (1913) ≡ *Sarothamnus striatus* (Hill) Samp., Anais Fac. Ci. Univ. Porto 19: 87 (1934).

Native distribution of this shrub is restricted to the western Mediterranean (Portugal, Spain and north Morocco) and Macaronesia (Madeira), while it is introduced in Argentina, Belgium, Cape Verde, Chile, France (including Corsica) and the USA (California and Oregon) (POWO 2022). In the Balkan Peninsula it is locally established in northeastern Greece (Dimopoulos *et al.* 2013).

Cytisus striatus (Hill) Rothm. is very similar to *C. scoparius* (L.) Link in their size and vegetative morphology, as well morphology of flowers and phenology. The main differential characteristics are: (1) the number and shape of the ridges and grooves of the stems (5 flattened ridges in *C. sco-*

parius, 7–10 rounded ridges in *C. striatus*), (2) the aroma of the flowers (pleasant in *C. scoparius*, unpleasant in *C. striatus*), (3) the size and colour of the ripe fruits (black and more than 5 cm long in *C. scoparius*; albo-pubescent and less than 4 cm in *C. striatus*) and (4) the number of seeds per fruit (20 or more in *C. scoparius*, up to 8 in *C. striatus*) (Puntieri & Chiapella 2019).

Fig. 16. – *Cytisus striatus* (Hill) Rothm. – habitat in NE Serbia, Đerdap gorge and legume (BEO 100178) (photo E. Kabaš).

According to Caramelo *et al.* (2022), *C. striatus* (Portuguese broom) can potentially use atmospheric nitrogen in order to fertilise the soil in which it grows. Together with other *Cytisus* species (such as *C. multiflorus* (L'Her.) Sweet – Spanish White Broom and *C. scoparius* – Scotch broom), it can colonize rocky slopes, fallows and uncultivated (agricultural) lands and roadsides and therefore can be used to take over mainly open sites such as logging roads, landings, skid trails, and harvesting areas.

It is interesting to note that *C. scoparius* was mentioned in the floristic list of Đerdap gorge by Petrić *et al.* (2010) but having in mind that both *Cytisus* species are shrubs and are very similar to each other, it is possible that this record actually refers to *C. striatus*. In Đerdap gorge *C. striatus* is distributed from Golubinje village (22.220061° E, 44.529715° N) to 3 km in front of the hydroelectric dam "Đerdap 1" (22.489341° E, 44.691376° N). Scattered or dense subpopulations of this species are mostly distributed

along the state rod 34 within the Đerdap gorge (in a total length of 35.5 km) (Fig. 21), and such an arrangement is probably a consequence of the planned planting of this species during the period of construction of the "Đerdap 1" hydropower plant, in order to prevent erosion and stabilize the nearby limestone soil due to hydrotechnical works.

Regardless of its positive effects in preventing soil erosion, *C. striatus* is recognized as one of the invasive plants in the USA California and Oregon). Given its ability to rapid grow, it is capable to spread very fast and can cause serious ecological problems in environments where it is not native (Caramelo *et al.* 2022). Therefore, special attention must be paid to the population size in the "Đerdap" national park, so that this species does not threaten the populations of some endangered, rare or relict plants in this protected area.

The presence of this species in Serbia was noticed almost 30 years ago, and later its gradual spread was observed on several occasions.

First record:

NE Serbia, Đerdap gorge, V. Stevanović, S. Jovanović, D. Lakušić, S. Pavić, 30-Sep-1994 (field observ.).

NE Serbia, Đerdap gorge, V. Stevanović, D. Lakušić, M. Niketić, 10-May-1996 (field observ.).

NE Serbia, Đerdap gorge, between Golo Brdo and Tekija, near the road, 80-280 m, 22.370569° E, 44.668665° N, MGRS 34T FQ04, FQ14, coll. & det. M. Niketić, 20-Jun-2022 (BEO 100178) (Fig 16).

A new allochthonous species for the flora of Serbia.

G. Tomović, M. Niketić, D. Lakušić, V. Stevanović

LAMIACEAE (LABIATAE)

Teucrium* ×*rohlenae K. Malý, in K. Malý & Beck, Fl. Bosn. & Hercegov. 4 (Sympet. 1): 29 (1951) [*T. capitatum* ("*polium*") L. × *T. montanum* L.].

This natural hybrid between *T. capitatum* L. and *T. montanum* L. was firstly observed by Rohlena (1922) in the vicinity of Kotor in SW Montenegro. The author provided a description of this nothotaxon, as well as diagnostic characters relative to the putative parental species, mentioning only the hybrid formula "*Teucrium montanum* × *Polium*" without a formal name. The validation of the name (*T.* ×*rohlenae* K. Malý) was properly done by Malý (1950) based on Rohlena's original description. It should be borne in mind that in the last century representatives of *T.* sect. *Polium*

subsect. *Polium* (Mill.) M. E. Cohen was treated in the broadest sense, and the types of *T. polium* L. and *T. capitatum* L. were considered conspecific, whereas *T. capitatum* was treated as a synonym or subspecies of *T. polium*. According to Navarro (2010), within this section, the type *T. polium* and *T. capitatum* are considered separate species, which is also confirmed in Salmaki *et al.* (2016), as well as in all relevant check lists (POWO 2022), whereby the type *T. polium* is exclusively limited to the area of SW Europe and NW Africa, where the greatest diversity of the genus is recorded. On the other hand, *T. capitatum* ("*T. polium*" sensu auct. balc.) is more widely distributed in the Mediterranean area, western Asia and part of central Asia (POWO 2022). Proven absence of the species *T. polium* on the Balkan Peninsula also excludes the existence of its sympatric zones with *T. montanum* in that area. Accordingly, it can be concluded that in the Balkans only hybrids between *T. capitatum* and *T. montanum* (= *T.* ×*rohlenae*) could be found, despite the original hybrid formula – *T. montanum* × *T. polium* (Rohlena 1922, Malý 1950). However, the change of the hybrid formula does not affect the application of the name *T.* ×*rohlenae* (Art. H.10.2 Note 2.) (Turland *et al.* 2018). Even more, a true hybrid between *T. montanum* and *T. polium* (*T.* ×*castrense* Verg.) has been described earlier from Western Europe in SE France (Verguin 1908) and in the case of the old classification (which treated *T. capitatum* and *T. polium* conspecific) this name would have priority over *T.* ×*rohlenae* as in Maurer (1966).

The presence of *T.* ×*rohlenae* was also indirectly confirmed for Italy (Maurer 1966 as *T.* ×*castrense*) and Moldova (Melnikov 2014 as *T.* ×*bogoutdinove* Melnikov) where also *T. capitatum* replaces *T. polium*. Recently, this hybrid has been recorded for two localities in Dalmatia (Croatia) (Zbiljić *et al.* 2021). Although the authors apply *T.* ×*rohlenae* as the name of the hybrid, since they explicitly treated *T. capitatum* as a subspecies [*T. polium* subsp. *capitatum* (L.) Arcang.], in that context its correct usage through a hypothetic new status and combination (*T.* ×*castrense* nothosubsp. *rohlenae*) was omitted (Art. H.5.2.) (Turland *et al.* 2018). Due to the emergence of numerous sympatric zones between *T. capitatum* ["*T. polium*"] and *T. montanum*, the authors believe that it is likely that the distribution of the hybrid is much wider.

In the flora of Serbia, *T.* ×*rohlenae* was first observed in E Serbia (Jelašnica gorge) in 1985 and preliminary presented in Niketić (1986). Since the herbarium material is lost, the only evidence of this record is the photographic material. It was observed in two localities (Prozorac and Rudine), and during 2022 it was found again in the last locality. A relatively small number of hybrids (< 1%) was observed in syntopic populations of *T. capitatum* and *T. montanum*.

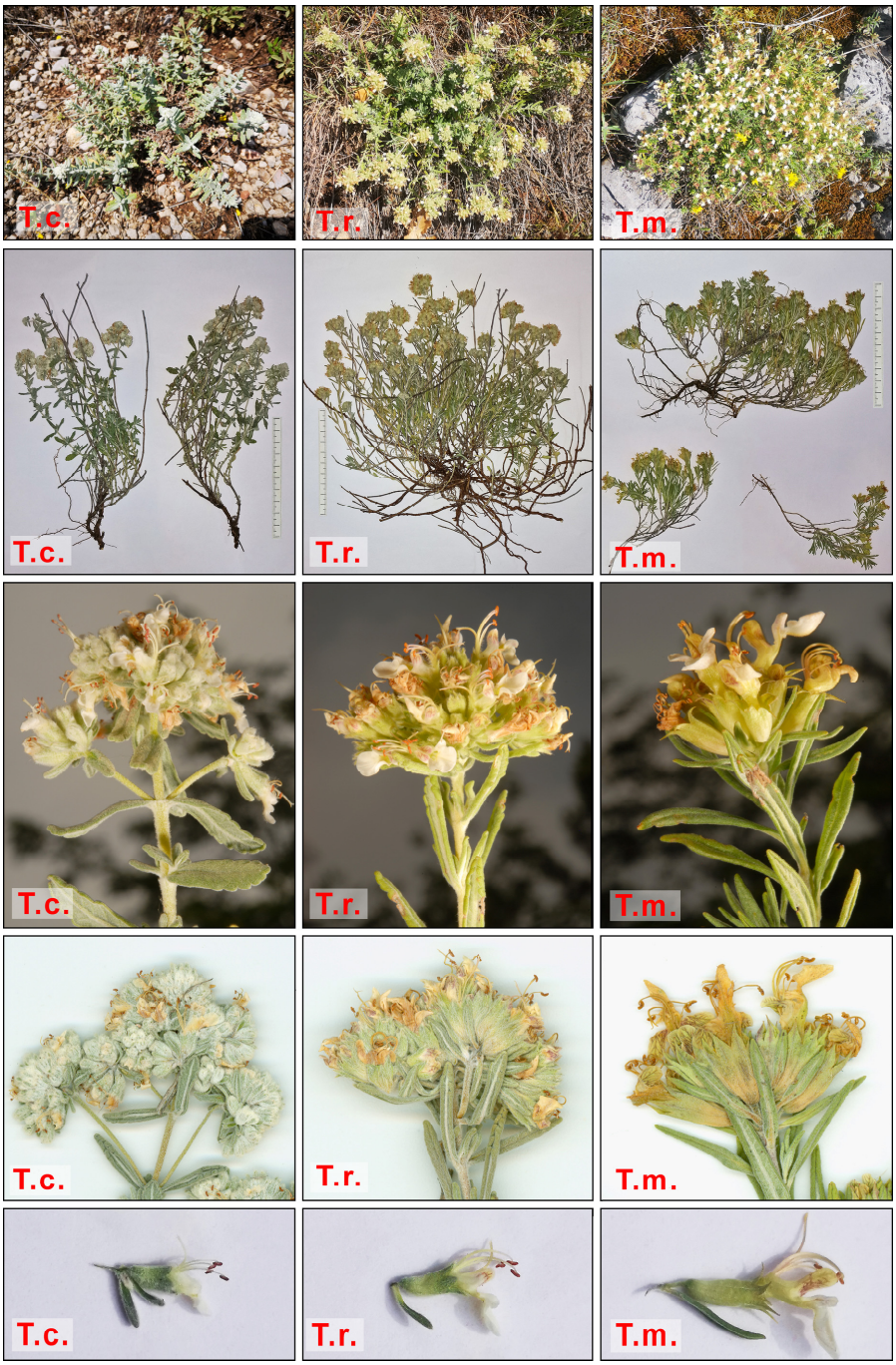

Fig. 17. – Hybridizing taxa of the genus *Teucrium* from the Jelašnica gorge: *T. capitatum* L. (T.c.), *T. montanum* (T.m.) and *T.* ×*rohlenae* K. Malý (T.r.) (photo M. Niketić).

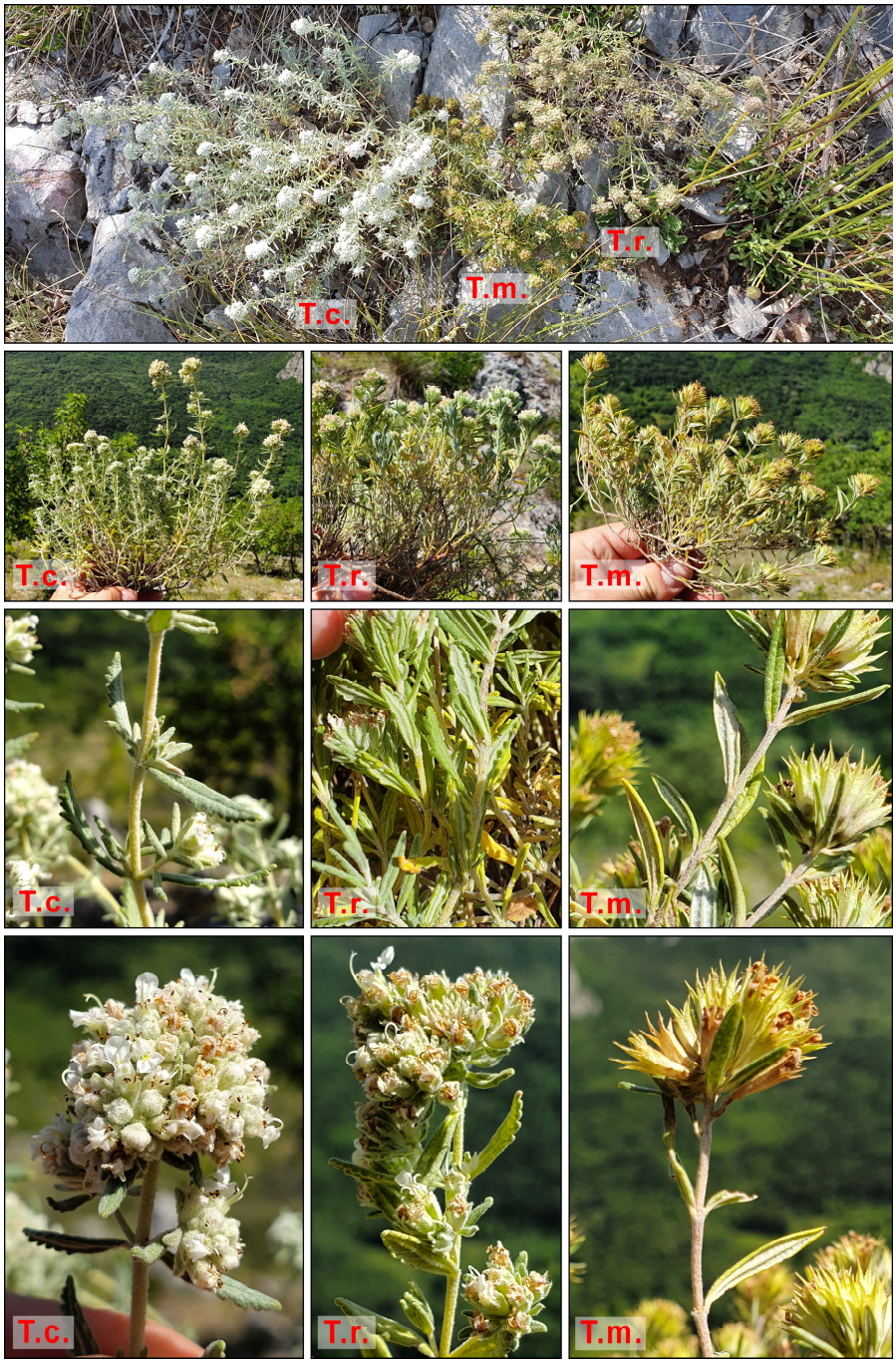

Fig. 18. – Hybridizing taxa of the genus *Teucrium* from the Sićevo gorge: *T. capitatum* L. (T.c.), *T. montanum* (T.m.) and *T.* ×*rohlenae* K. Malý (T.r.) (photo M. Zbiljić).

In 1985 most hybrid individuals were attacked by phytophagous larvae of lacebugs – *Copium teucrii* (Host, 1788) (Tingidae). Collected specimens are deposited in the entomological collection of the Natural History Museum in Belgrade (Heteroptera – 5216). Larvae form galls in inflorescences, in which the flower buds and all other parts of the flower are enlarged, and corolla parts are fused on the sides and thickened. The flowers do not open, but the larvae form an aperture at the top. Several larvae live inside the gala (Péricart 1990). Otherwise, these larvae were not observed on the parental species in Jelašnica gorge although in other localities in Serbia it was found on *T. montanum* (Protić 2011).

The hybridogenous taxon *T.* ×*rohlenae* was recently recorded in eastern Serbia in Sićevo Gorge and Svrljiške Mountains. In Sićevo Gorge during the summer of 2019, the hybrid was found on the southern slopes near the village of Sićevo, where the parent species (*T. montanum* and *T. capitatum*) were numerous. Exactly ten individuals were counted (> 5%, including the parental individuals).

Three years later, during the survey of habitats in the Svrljiške Mountains (near the Donja Glama village), another locality was found where hybrid *T.* ×*rohlenae* occurs. The number of hybrids was not very high and was similar to that at the previous sites. In Svrljiške Mountains, the parental *T. capitatum* grows from 400 to 700 m above sea level, while *T. montanum* grows in the zone from 500 to 1200 m above sea level. Several hybrids have been found in the contact zone where these two species grow syntopically.

First records:

E Serbia, Niš, Jelašnica gorge, Prozorac, rocky grounds, limestone, 400 m, MGRS 34T EN89, coll. & det. M. Niketić, Jun-1985 (photo material, BEO).

E Serbia, Niš, Jelašnica gorge, between Strana and Rudine, rocky grounds, limestone, 400-500 m, MGRS 34T EN89, coll. & det. M. Niketić, 25-Jun-2022 (BEO 100181); 250-450 m, 14-Jun-2022 (BEO 100184) (Fig. 17).

E Serbia, Niš, Sićevo gorge, Sićevo, rocky grounds, limestone, 430 m, MGRS 34T EN89, coll. & det. M. Zbiljić, 01-July-2019 (BEOU 69150) (Fig. 18).

E Serbia, Bela Palanka, Mt. Svrljiške Planine, Donja Glama, rocky grounds (*Stipetum capillatae*), limestone, 701 m, MGRS 34T FN09, coll. & det. M. Zbiljić, 09-July-2022 (BEOU 70905).

According to Rohlena (1922), this nothotaxon is somewhat more similar to *T. capitatum* ["*polium*"], and this was confirmed by recent morphological analyzes (Zbiljić *et al.* 2021), which, despite the fact that

they are ± intermediate, showed a clear grouping with *T. capitatum* ["*polium*"] based on the analyzed morphological characters. In terms of phenology, both the hybrid and the parental species bloom during June in the lower regions, starting with *T. montanum* which on average begins flowering 10 days to two weeks before *T. capitatum*. In that period, flowering individuals of *T.* ×*rohlenae* can also be found.

A new hybrid for the flora of Serbia (Fig. 21).

M. Niketić, M. Zbiljić, B. Zlatković

MALVACEAE

Malva verticillata L., Sp. Pl.: 689 (1753).

= *M. verticillata* var. *crispa* L., Sp. Pl. (ed. 2): 970 (1763) ≡ *M. crispa* (L.) L., Syst. Nat., ed. 10: 1147 (1759).

Malva verticillata is a new representative of the Malvaceae family in the flora of Serbia. The presence of this species was recorded in the southeastern part of the country, in the Bosilegrad region (Fig. 14), where it was probably cultivated as a decorative species, and it is assumed that it was once also grown as a salad crop. The species originates from the eastern parts of Asia (China), while as a naturalized or even invasive species, it is recorded on the Indian subcontinent, E Africa, Europe and North America (Tang *et al.* 2007). In most European countries it is listed as a casual or naturalized species. In neighbouring Bulgaria, it appears as a weed species on arable land (Markova 1979).

On the territory of Serbia *M. verticillata* is an allochthonous plant whose population is stabilized in ruderal, moderately nitrified habitats in smaller settlements. In Serbia, this species is represented by the infraspecific taxon *M. verticillata* var. *crispa* L. which is an annual plant with a leaf margin strongly wrinkled, and blades on the distal part of the stem with lobes bluntly triangular compared to the type variety (var. *verticillata*). Pedicels are uniformly short or absent, while schizocarp is ca. 8 mm in diameter, slightly larger than in typical variety. It blooms from Jun to September occurring in the vegetation of *Arction lappae* and *Onopordion acanthii* alliances. *Malva verticillata* should be considered to have the status of a naturalized, non-invasive plant species in Serbia. At the moment, the species does not pose a significant threat to the native ecosystems and habitats in the areas where it has been recorded.

First record:

SE Serbia, Bosilegrad, Donja Ljubata village, hamlet Selo, to the right bank of the Ljubatska river, ruderal habitat between the road and ruined houses, c. 980 m, 22.342933° E, 42.499046° N, MGRS 34T FN00, coll.

& det. B. Zlatković, G. Anačkov, B. Božin, M. Niketić, G. Tomović, 17-Aug-2006 (s.n. BUNS) (Fig. 19).

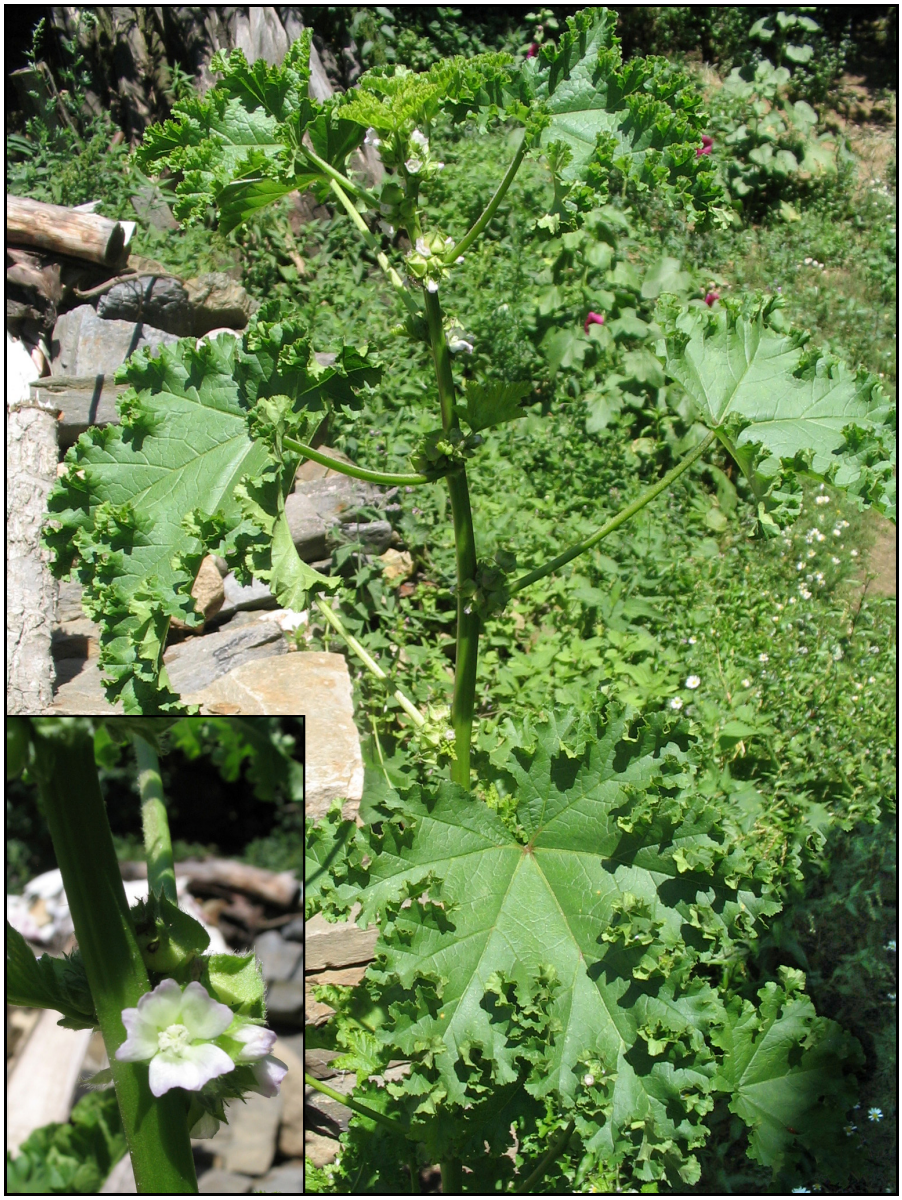

Fig. 19. – *Malva verticillata* L. (SE Serbia, Bosilegrad, Donja Ljubata) (photo B. Zlatković).

A new allochthonous species for the flora of Serbia.

B. Zlatković, G. Anačkov, G. Tomović, M. Niketić

ROSACEAE

Alchemilla venosula Buser, Bull. Herb. Boissier, sér. 2, 1: 466 (1901).

≡ *H. glaberrima* var. *venosula* (Buser) Asch. & Graebn., Syn. Mitteleur. Fl. 6(1): 396 (1902).

= *A. gracillima* Rothm., Repert. Spec. Nov. Regni Veg. Beih. 100: 87 (1938) ≡ *A. vulgaris* var. *gracillima* (Rothm.) Stoj., Stef. & Kitan., Fl. Bulg., ed. 4, 1: 548 (1966) ≡ *A. fissa* [stat. indet.] *gracillima* (Rothm.) Á. Löve & D. Löve, Preslia 46 (2): 131 (1974).

– "*Alchemilla venulosa*" auct.

– *A. riloensis* Ronniger ex Walters, Fl. Eur. 2: 63 (1968), nom. inval.

– "*A. fissa*" sensu auct. balc. [non Günther & Schummel, Exsicc. (Cent. Siles.) 9: n.° 2 (1819) = *A. pyrenaica* Dufour, Ann. Gén. Sci. Phys. 8: 228 (1821) = *A. glaberrima* (F. W. Schmidt) Opiz in Berchtold & Opiz, Oekon.-Techn. Fl. Böhm. 2(1): 16 (1838)].

– "*A. incisa*" sensu auct. balc. [non Buser in Magnier, Scrin. Fl. Select. 11: 255 (1892)].

– "*A. vulgaris* var. *montana*" sensu auct. balc. [non F. W. Schmidt, Fl. Boëm. 3: 88 (1794) ≡ *A. vulgaris* subsp. *montana* (F. W. Schmidt) Gams in Hegi, Ill. Fl. Mitt.-Eur. 4: 966 (1923) ≡ *A. alpestris* var. *montana* (F. W. Schmidt) Schinz & R. Keller, Fl. Schweiz, ed. 2, 2: 119 (1905) ≡ *A. alpestris* subsp. *montana* (F. W. Schmidt) Palitz, Acta Geobot. Hung. 1: 113 (1936) = *A. connivens* Buser, Bull. Herb. Boissier 2: 107 (1894)], p.p.

– "*A. vulgaris* var. *alpestris*" sensu auct. balc. [non F. W. Schmidt, Fl. Boëm. 3: 88 (1794) ≡ *A. alpestris* (F. W. Schmidt) Opiz, Seznam: 13 (1852) ≡ *A. vulgaris* subsp. *alpestris* (F. W. Schmidt) Murb., Bot. Not. 1895: 266 (1895) = *A. glabra* Neygenf., Ench. Bot.: 67 (1821)], p.p.

This Alpine-Balkan species was traditionally included in *Alchemilla* sect. *Calycinae* Buser, together with *A. gracillima* Rothm., *A. fissa* Günther & Schummel, *A. firma* Buser, *A. incisa* Buser, etc. (Walters & Pawlowski 1968). In that time, it was known from Italian Alps, and *A. gracillima* from Slovenia and the Balkan Peninsula. Later on, its taxonomic affiliation was treated very differently by Fröhner (and others). In 1990 he transferred *A. venosula* Buser and some other species (but not *A. gracillima*) in a separate section, *A.* sect. *Coryaceae* Fröhner, together with *A. glabra* Neygenf. and many similar species mostly described by Buser (*A. firma*, *A. incisa*, *A. othmarii* Buser, *A. connivens* Buser, *A. coriacea* Buser, etc.) (Fröhner 1990). Later on, *A. gracillima* was included in *A. venosula* and partially synonymized (Kurtto *et al.* 2007) which is widely accepted by current online lists (POWO 2022, Kurtto 2009+, Hassler 2004+). According to Fröhner *et al.* (2012) *A. venosula* was returned to *A.* sect. *Calycinae* but it was later included in sect. *Alchemilla* together with *A. glabra* (Gestri *et al.* 2021). In contrary, Chkalov (2020) does not recognize Fröhner's *A.* sect.

Coryaceae and all mentioned species (except *A. glabra* and *A. connivens*) includes in *A.* sect. *Calycinae* with the centre of diversity in the Caucasus. They have relatively longer epicalyx segment compared to hypancium and sepals.

The inspection of the herbarium material showed that of all the mentioned species, in addition to the morphologically indisputable *A. glabra*, in Serbia there are still *A. connivens* and *A. venosula* (Fig. 20). *Alchemilla connivens* was recorded under the current name in Janić (1989) for Ljuboten peak on Šar Planina Mts and for the Vlasina plateau in SE Serbia (Ranđelović *et al.* 2010). In other cases, due to complicated synonymy and great similarity of species, without herbarium vouchers it is difficult to assess which taxa are actually in question. In the *Prodromus florae peninsulae balcanicae* (Hayek 1926) and in the earlier edition of the *Flora of Serbia* (Gajić 1972), without a specific locality, *A. vulgaris* var. (subsp.) *montana* F. W. Schmidt was mentioned for the flora of Serbia. Under the same name, an *Alchemilla* species is also mentioned for Stara Planina Mts in eastern Serbia (Mišić *et al.* 1978). In Pavlović (1955) *A. alpestris* var. *montana* (F. W. Schmidt) Schinz & R. Keller was recorded for Mt Kopaonik in C Serbia. In some other publications (Jovanović 1955, Janković 1967, Rajevski 1990) *A. alpestris* (F. W. Schmidt) Opiz was recorded in phytocoenological relevés for Mt Suva Planina, Šar Planina Mts (Bistra) and Prokletije Mts (Krš Čvrlje). All the mentioned data can refer to any of the mentioned three species (*A. glabra*, *A. connivens*

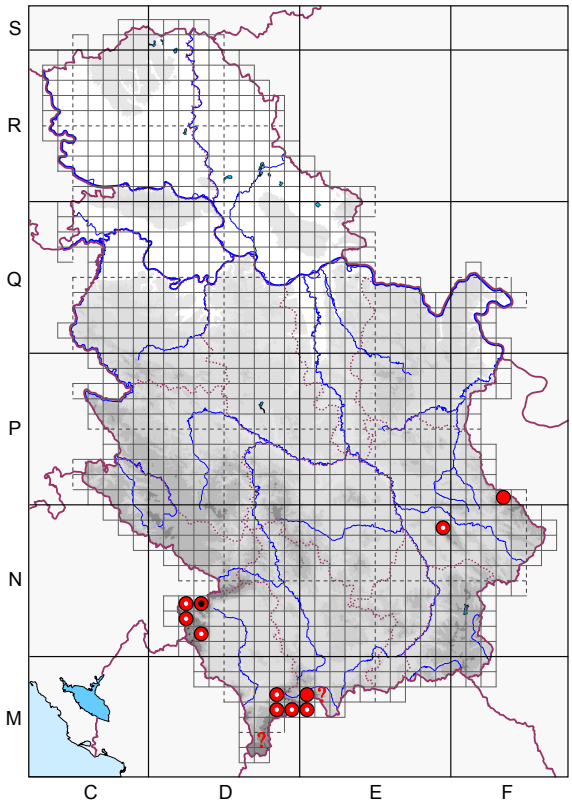

Fig. 20. – Distribution of *Alchemilla venosula* Buser in Serbia: red circle – literature and herbarium records; red-black circle – literature record; red-white circle – new (herbarium) records; question marks – literature records for *A. fissa* Günther & Schummel.

and *A. venosula*) and for now, the only presence of *A. connivens* on the Vlasina plateau (Ranđelović *et al.* 2010) was confirmed by herbarium specimens (BEO). The same species was also collected from Mt Zlatar in SW Serbia (BEO). Although *A. connivens* belongs to a different section (probably *A.* sect. *Alchemilla*), with relatively shorter epicalyx segments, it differs less from *A. venosula* in terms of leaf shape. According to our observations, it was necessary to correct some comparative morphological features for both species (such as relatively length of teeth) (Tab. 1). We also noticed that the apical tooth of the blade lobe is significantly shorter then the others in *A. venosula*, which represents a diagnostically new and most significant feature compared to *A. connivens* (Fig. 23).

Table 1. – Most significant diagnostic characters for delimiting *Alchemilla venosula* Buser and *A. connivens* Buser (modified from Fröhner 1990 and Fröhner *et al.* 2012).

Characters	***A. venosula***	***A. connivens***
Blade (colour)	blue–green	pure green – dark gray–green
Blade (scope)	300–360 (–400)°	270–380 (–440)°
Blade lobe (shape)	arcuate, semicircular to hyperbolic	triangular to arcuate trapezoid
Apical blade lobe (teeth number)	9–18 (–19)	13–23
Largest lobe tooth / central blade nerve	2–3 %	1.5–2.3 %
Largest lobe tooth / apical tooth	2–3 (–4)	1–2
Blade - upper surface (hairiness)	glabrous or sparsely hairy near margin	sparsely hairy near margin or everywhere (rarely dense)
Blade - lower surface (hairiness)	along the nerves which are usually glabrous in the lower part	everywhere along the nerves
Petiole (width)	0.5–1 (–1.5) mm	1–2 mm
Petiole (hairiness)	sparsely hairy to glabrous	sparsely to densely hairy
Stem (hairiness)	sparsely hairy to glabrous	sparsely to densely hairy
Stem (hairiness region)	0–50 % (1–3 (–4) internodes)	30–60 (80) % (2–5 internodes)
Pedicel (length)	1–3 mm	1–2 mm
Hypancium (shape)	globose to short campanulate	short to long campanulate
Calyx teeth / hypancium (length)	0.8–1.3	0.67–1
Epicalyx segments / hypancium (length)	(0.9–) 1–1.2 (–1.7)	0.5–1
Epicalyx segments / sepals (length)	0.8–1.1 (–1.3)	0.7–1 (–1.2)
Sepals (length / width)	1–2	1–1.5

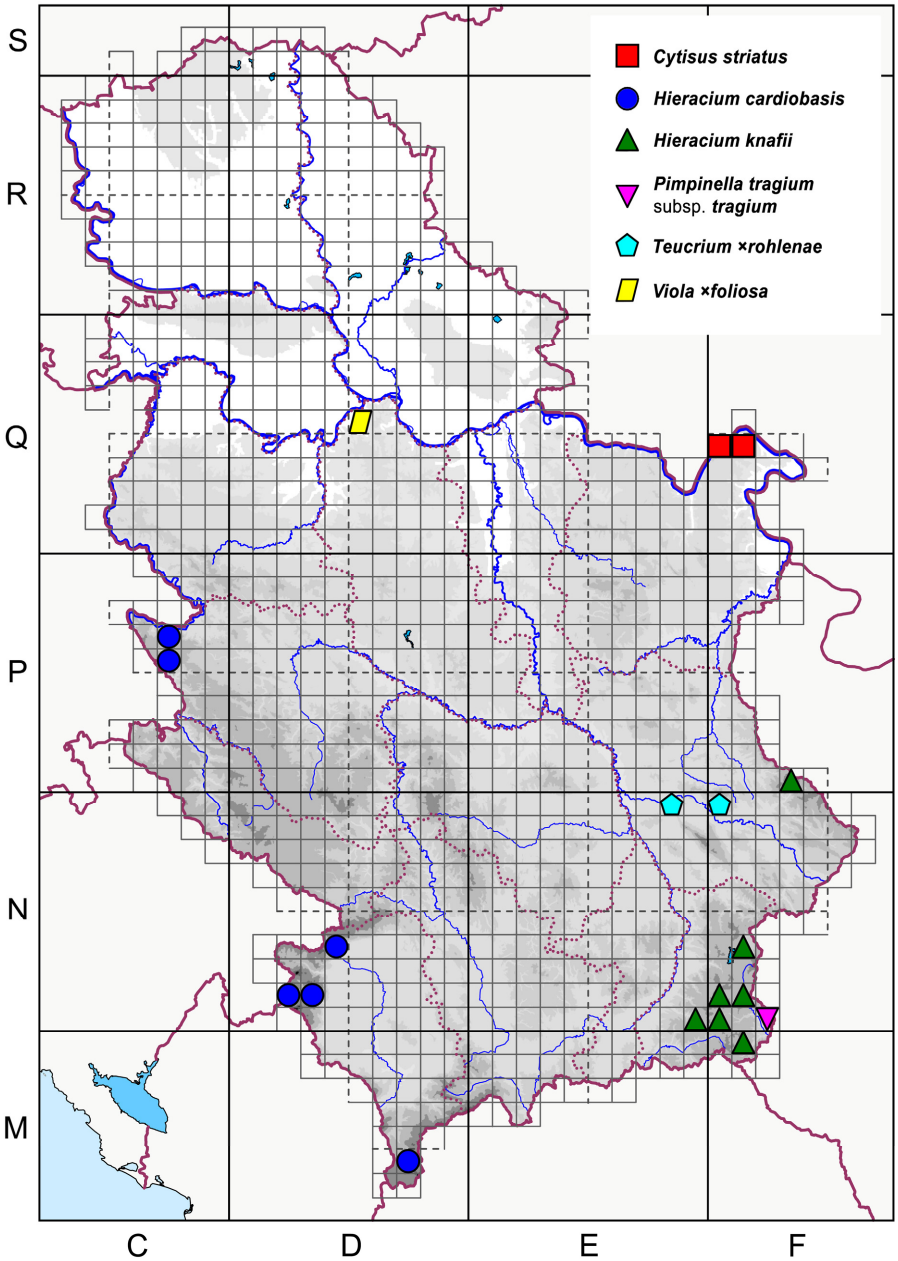

Fig. 21. – Distribution of some new taxa for the vascular flora of Serbia.

In Serbia, *A. venosula* inhabits tall-herb vegetation and rock crevices, that are far from mountain streams, in subalpine and alpine zone. It was recorded on a carbonate and silicate substrate. So far, no serious threats to its habitats have been observed. According to Kurtto *et al.* (2007) and

Kurtto (2009+) it is distributed in Italy, Austria, Slovenia, Bosnia and Herzegovina, Montenegro, Albania, Serbia, North Macedonia and Bulgaria. Also, based on the drawing of "*A. fissa*" in the flora of NE Anatolia (Hayirlioglu-Ayaz & Inceer 2009), one could rather conclude that it is actually *A. venosula* or some other species.

Herbarium samples records:

Kosovo, Mts Šar Planina, "S of Brezovica, NE of Bistra at Shara (mountain resort) [Yugoslavia, Serbia (Kosmet)], 1-1.5 km SW of Shara, along the stream of Shara, alt. 1750 m, very rich vegetation of tall herbs", MGRS 34T, coll. & det. P. Frost-Olsen, 08-Jul-1979 (sub *A. gracillima*), rev. M. Niketić (*PFO 2238* H 1690451; *PFO 2238* P 0415433; *PFO 2238* L 4192868; *PFO 2238* BR 0000027418109V).

Kosovo, Mts Šar Planina, S of Prevalac-pass (E of Prizren), wet subalpine grassland, alt. 1850 m, MGRS 34T DM96, coll. & det. P. Frost-Olsen, 12-Jul-1976 (sub *A. gracillima*), rev. M. Niketić (*PFO 487* BM 014117684).

E Serbia, Mts Stara Planina, Babin Zub peak, screes, limestone, 1300-1757 m, MGRS 34T FP30, coll. M. Niketić, G. Tomović, 23-Jun-2019, det. M. Niketić (BEO 100106).

E Serbia, Mts Stara Planina, Midžor peak, Dugo Bilo, in pratis, limestone, 1800 m, MGRS 34T FP30, coll. V. Lindtner, 23-Jun-1958, det. N. Diklić (sub *A. alpestris* var. *montana*), rev. M. Niketić, 06-Feb-2022 (BEO 46930).

E Serbia, Mt Suva Planina, Trem peak, limestone, 1400-1800 m, MGRS 34T EN98, coll. & det. M. Niketić, 03-Jul-2013 (BEO 100185) (Fig. 22).

E Serbia, Mts Mt Suva Planina, Trem peak, rocks, limestone, MGRS 34T EN98, coll. V. Nikolić, N. Diklić, M. Bogdanović, 18-Jun-1973, det. N. Diklić (sub *A. alpestris* var. *montana*), rev. M. Niketić, 06-Feb-2022 (BEO 46939).

Metohija, Mts Prokletije, Hajla peak, between Škrelj and Dramodol, limestone, 1500-2120 m, MGRS 34T DN23, coll. & det. M. Niketić, 03-Sep-1997 (BEO 100189).

Metohija, Mts Prokletije, Koprivnik peak, Veternik, 1700-2461 m, MGRS 34T DN31, coll. & det. M. Niketić, 29-Aug-1997 (BEO 100191).

Metohija, Mts Prokletije, Nedžinat peak, Nedžinatsko lake, limestone, 1300 m, MGRS 34T DN22, coll. & det. M. Niketić, 02-Sep-1997 (BEO 100188) (Fig. 22).

Fig. 22. – *Alchemilla venosula* Buser (Metohija, Mts Prokletije, Nedžinatsko lake, BEO 100103) (photo M. Niketić, Mt Suva Planina).

Metohija, Mts Šar Planina, above Kobilica peak, high mountain pastures and rocky grounds, 2400 m, MGRS 34T DM86, coll. V. Nikolić, N. Diklić, S. Mladenović, 19-Jul-1977, det. N. Diklić (sub *A. alpestris* var. *montana*), rev. M. Niketić, 06-Feb-2022 (BEO 46932).

Fig. 23. – *Alchemilla venosula* Buser (a) and *A. connivens* Buser (b) from Serbia – lower leaves.

Metohija, Mts Šar Planina, between Prevalac and Jažinačko lake, silicate, 1500-2400 m, MGRS 34T DM96, coll. M. Niketić, V. Stevanović, D. Lakušić, 29-Sep-1991, det. M. Niketić (BEO 100187).

Kosovo, Mts Šar Planina, Livadica, 1700-2400 m, MGRS 34T EM07, coll. & det. M. Niketić, 08-Aug-1987 (BEO 100186).

Kosovo, Mts Šar Planina, Ošljak, Čerenački peak, limestone, 1500-2040 m, MGRS 34T DM87, coll. V. Nikolić, N. Diklić, 19-Jul-1975, det. N. Diklić (sub *A. alpestris* var. *montana*), rev. M. Niketić, 06-Feb-2022 (BEO 46933).

Kosovo, Mts Šar Planina, between Stojkova Kuća and Jezerska Čuka, high mountain pastures and rocky grounds, 1200-2600 m, MGRS 34T EM06, coll. V. Nikolić, N. Diklić, S. Mladenović, 20-Jul-1977, det. N. Diklić (sub *A. alpestris* var. *montana*), rev. M. Niketić, 06-Feb-2022 (BEO 46931).

Kosovo, Mts Šar Planina, between Stojkova Kuća and Jezerska Čuka, high mountain pastures and rocky grounds, 1600-2400 m, MGRS 34T EM06, coll. V. Nikolić, N. Diklić, S. Mladenović, 23-Jul-1980, det. M. Niketić (BEO 100190).

Kosovo, Mts Šar Planina, between Stojkova Kuća and Piribeg, rocky grounds, MGRS 34T EM06, EM07, coll. V. Nikolić, N. Diklić, M. Bogdanović, 22-Jul-1974, det. N. Diklić (sub *A. alpestris* var. *montana*), rev. M. Niketić, 06-Feb-2022 (BEO 46935).

Kosovo, Mts Šar Planina, Suva Reka, toward Jažinačko lake, mix forest, 1400-1900 m, MGRS 34T DM96, EM06, EM07, coll. V. Nikolić, N. Diklić, S. Mladenović, 20-Jul-1978, det. N. Diklić (sub *A. alpestris* var. *montana*), rev. M. Niketić, 06-Feb-2022 (BEO 46934).

Confirmed species for the flora of Serbia and for the first time located for the Serbia proper.

M. Niketić, G. Petkovski

SAPINDACEAE (ACERACEAE)
Acer saccharinum L., Sp. Pl.: 1055 (1753).

The native range of this deciduous tree is North America (from southeast Canada to north-central and eastern part of the USA). It is introduced in South America (Ecuador) and Asia (Korea and Uzbekistan). In Europe it has status of naturalised plant in Great Britain, France, Poland and Austria, introduced in Ireland, Germany and Croatia, while it is treated as casual alien in Belgium and Chech Republic (POWO, Raab-Straube 2018+). In the Flora of SR Serbia, it is considered as a very often cultivated (ornamental) species in tree rows, parks and suburban forest cultures (Jovanović 1973). Until now, there were no data on the presence of the species in natural or anthropogenically disturbed habitats in Serbia.

During field research in the surrounding of Belgrade in the year 2020, this allochthonous tree was found in two localities – Ada Huja and Ovčanska Ada (Fig. 26). Both subpopulations inhabits hygrophilous forest vegetation near the river banks of Sava and Danube rivers respectively, and grows within the *Salici-Populetum* community. Only seedlings and immature individuals have been observed in the locality of Ada Huja and Ovčarska Ada. Older reproductive individuals were seen at the Veliko Ratno Ostrvo river island, with a trunk diameter of 30–40 cm.

First records:

Šumadija, Beograd, Veliko Ratno Ostrvo, *Salicetum albae*, 20.44515° E, 44.83138° N, MGRS 34T DQ56, coll. & det. S. Jovanović, D. Lakušić, 11-Oct-2006 (field obsev.).

Šumadija, Beograd, Ada Huja, 70 m, 20.539086° E, 44.825523° N, MGRS 34T DQ66, coll. & det. M. Niketić, 23-Apr-2020 (BEO 100203).

Šumadija, Beograd, Krnjača, Ovčanska Ada, 75 m, MGRS 34T DQ66, coll. & det. M. Niketić, 27-Apr-2020 (BEO 100204).

A new allochthonous species for the flora of Serbia.

M. Niketić, G. Tomović, D. Lakušić

SCROPHULARIACEAE

Buddleja davidii Franchet, Nouv. Arch. Mus. Hist. Nat., sér. 2, 10: 65 (1888).

This decorative perennial semi-deciduous, multi-stemmed shrub is native to C and SW China in several provinces where it can be found in mountain slopes at elevation up to 3500 m. It is introduced in Europe in the late 1800s, and non-native distribution extends from Spain in the west to Bulgaria in the east and from the Mediterranean in the south to Norway in the north. Outside of Europe it is also present in Africa (south Africa,

Fig. 24. – *Buddleja davidii* Franchet (NE Serbia, Đerdap gorge, BEO 100177).

Zambia and Zimbabwe) and also introduced in few Asian countries (South Korea and Japan), North, Central and South America as well as Australasia and New Zealand (Tallent-Halsell & Watt 2009 and literature therein).

In its introduced range *B. davidii* inhabits anthropologically disturbed habitats, such as urban waste grounds, clear-cut forests, abandoned cultivated fields, transport corridors as well as quarries (Tallent-Halsell & Watt 2009 and literature therein).

In Đerdap gorge near the village of Tekija (Fig. 26), stable population of this new allochthonous plant was found near the Danube river in flooded forest vegetation, together with *Salix fragilis* L. Individuals with white flowers were also observed. Otherwise, this habitat is quite isolated from settlements and zoo-anthropogenic influences. There are also our field observations of this alien from the vicinity of Niš (near Mramor village) and the vicinity of Novi Sad (Petrovaradin fortress), but these are casual findings, in urban or ruderal environment, probably escaped from cultivation and up to now stable populations have not been established in those localities.

First record:

NE Serbia, Đerdap gorge, Tekija, the northern slopes of Kustur hill, on the bank of Veliki Potok stream, silicate, 150 m, 22.412934° E, 44.667655° N, MGRS 34T FQ14, FQ14, coll. & det. M. Niketić, 18-Sep-2018 (BEO 100177) (Fig 24).

A new allochthonous species for the flora of Serbia.

M. Niketić

VIOLACEAE

Viola* ×*foliosa Čelak., Arch. Naturwiss. Landesdurchf. Böhmen 2: 477 (1875).
[*V. hirta* L. × *V. suavis* M. Bieb.]
= *Viola* ×*kerneri* Wiesb., Oesterr. Bot. Z. 30: 189 (1880).
= *Viola* ×*pragensis* Wiesb., Oesterr. Bot. Z. 34: 184 (1884).
= *Viola* ×*balmesii* Sennen, Butl. Inst. Catalana Hist. Nat. 32: 112 (1932).

So far, this natural hybrid between *V. hirta* L. × *V. suavis* M. Bieb. has been reported from C and SW Europe (Austria, Czech, Slovakia, Germany, Spain) (Hassler 2004+, POWO 2022). It is a perennial plant which grows primarily in the temperate biome.

Within the collection of Josif Pančić (*Herbarium Pancicianum*) of the Herbarium of the Institute of Botany and Botanical Garden "Jevremovac", University of Belgrade (BEOU), we found one herbarium sheet from the

surrounding of Belgrade (Topčider hill) that confirm the presence of this natural *Viola* hybrid in Serbia. However, this specimen is of very old origin (collected by J. Pančić in the year of 1878), the estimation of subpopulation size and threatened factors for this taxon could not be possible. Considering

Fig. 25. – *Viola ×foliosa* Čelak (Šumadija, Beograd, BEOU 3238).

that both parental species grow in the same habitat in several places Serbia (for the distribution of *Viola* species in Serbia see Tomović *et al.* 2014), it is quite possible that *Viola ×foliosa* Čelak. is much more common than a single herbarium specimen shows.

First record:

Šumadija, Beograd, Topčider hill, MGRS 34T DQ55, coll. & det. J. Pančić, Apr-1878 (sub *V. hirta*), rev. M. Niketić 21-Sep-2013 (sub *V. ×kerneri*) (BEOU, *Herb Panc* 3238) (Fig 25).

A new hybrid for the flora of Serbia.

M. Niketić, G. Tomović

Erroneously reported taxa for the flora of Serbia

MAGNOLIOPSIDA

APIACEAE (UMBELLIFERAE)
Heracleum sphondylium L., Sp. Pl.: 249 (1753) subsp. ***sphondylium***.
ABSENT FROM SERBIA.

Taxonomic treatment of a complex group *H. sphondylium* was presented in several chemosystematics studies (Ušjak *et al.* 2018, 2020, 2022) where independent analyzes of essential oil constituents and furanocoumarins from different organs yielded very similar patterns of taxa separation. They showed that some taxa cannot be considered conspecific with *H. sphondylium* L. as is the case in the traditional interpretation (Brummitt 1968), which is still more or less generally accepted today (Hassler 2004+, Hand 2011+). Of the taxa from Southeast Europe, the following can be treated as separate species: *H. sibiricum* L., *H. ternatum* Velen., *H. pyrenaicum* Lam. (incl. *H. orsinii* Guss.) and *H. verticillatum* Pančić. The results also showed a considerable similarity between *H. sphondylium* s.s. and *H. montanum* Schleich. ex Gaudin, which is why they can be considered conspecific, with the latter taxon having subspecific rank as in the traditional classification (*H. sphondylium* subsp. *elegans* (Crantz) Schübl. & G. Martens).

Distribution of *H. sphondylium* in the narrow sense (i.e. subspecies) is under-known and probably exaggerated, due to the fact that many authors saw it in the context of the whole group. In our opinion it is native in W Europe, extending to Scandinavia, C Europe and the Mediterranean region (Ušjak *et al.* 2018). Our intensive field research, as well as the analysis of available herbarium and photo material, has shown that it is absent from the largest part of the Balkan Peninsula (including Serbia) where it has been

replaced by *H. sibiricum*. It seems that both species meet at the borders of Croatia and Slovenia, where they form a relatively narrow zone of introgression. It is also preliminarily established that the subspecies extends eastward to the Czech Republic, Poland and eastern Scandinavia, so its presence in many parts of eastern Europe may be questionable.

M. Niketić, Lj. Ušjak, G. Tomović, S. Petrović

ASTERACEAE (COMPOSITAE)

Carlina vulgaris subsp. ***spinosa*** (Velen.) Vandas, Reliq. Formán.: 320 (1909).

≡ *C. longifolia* var. *spinosa* Velen., Sitzungsber. Königl. Böhm. Ges. Wiss., Math.-Naturwiss. Cl. 1888: 54 (1888) [basionym].

ABSENT FROM SERBIA.

The only record for Serbia for this Mediterranean subspecies comes from Meusel & Kästner (1994): "Scardus, ad vias prope vicum Vaica, 3.7.1890, Dörfler (WU)". The mentioned location actually corresponds to the surroundings of the village of Vejce in North Macedonia, which is located on the Macedonian side of the Šar Planina Mts ("Scardus"). According to Greuter (2006+) the taxonomic status of the subspecies is doubtful.

M. Niketić

Centaurea montana L., Sp. Pl.: 911 (1753).

≡ *Cyanus montanus* (L.) Hill, Hort. Kew.: 64 (1768).

ABSENT FROM SERBIA.

This species was reported for the first time by Pančić (1867, 1874) for mountain and hilly areas in Serbia, and was later mentioned in a dozen other publications, as well as in *Flora of SR Serbia* (Gajić 1975). It is distributed in W and C Europe, and also introduced in Scandinavia and Baltic countries (Greuter 2006+). According to Hayek (1929) it was mentioned for the flora of Croatia, Bosnia and hercegovina, Serbia and Bulgaria. However, our multi-year field research and examination of herbarium material did not confirm the presence of this species in Serbia. It is most likely that all literature data for this species actually correspond to *C. triumfettii* subsp. *axillaris* (Willd.) Stef. & T. Georgiev.

M. Niketić

Leucanthemum chloroticum Kern. & Murb. ex Murb., Acta Univ. Lund. 27(5): 109 (1892).

≡ *Chrysanthemum chloroticum* (Kern. & Murb.) Horvatić, Acta Bot. Inst. Bot. Univ. Zagreb 3: 102 (1928) ≡ *L. graminifolium* subsp. *chloroticum*

(Kern. & Murb.) Hayek, Repert. Spec. Nov. Regni Veg. Beih. 30(2): 647 (1931) ≡ *L. atratum* subsp. *chloroticum* (Kern. & Murb.) Horvatić, Acta Bot. Inst. Bot. Univ. Zagreb. 10: 73 (1935).

ABSENT FROM SERBIA.

Previous record of "*Chrysanthemum chloroticum*" (Malý 1934) from Mt Tara in W Serbia, according to Niketić *et al.* (2020), actually corresponds to *L. illyricum* (Horvatić) Vogt & Greuter. *L. chloroticum* inhabits amphiadriatic dry steppic submediterranean pastures *Scorzone-retalia villosae* Kovačević 1959 (*Scorzonero villosae-Chrysopogonetalia grylli* Horvatić & Horvat 1957) in Croatia, Bosnia and Hercegovina and Montenegro (Horvatić 1963). This type of vegetation is not present in Serbia.

M. Niketić

Leucanthemum visianii (Gjurašin) Vogt & Greuter, Willdenowia 33: 42 (2003).

≡ *Chrysanthemum visianii* Gjurašin in Glasn. Hrvatsk. Prir. Društva 32: 84 (1920) [basionym] ≡ *C. leucanthemum* var. *laciniatum* Vis., Fl. Dalmat. 2: 86 (1847) [preocc.] ≡ *L. vulgare* subsp. *laciniatum* (Vis.) Briq. & Cavill. in Burnat, Fl. Alpes Marit. 6: 91 (1916).

= *Chrysanthemum croaticum* Horvatić, Acta Bot. Inst. Bot. Univ. Zagreb. 3: 89 (1928) ≡ *L. atratum* subsp. *croaticum* (Horvatić) Horvatić, Acta Bot. Inst. Bot. Univ. Zagreb. 10: 71 (1935) ≡ *L. croaticum* (Horvatić) Horvatić, Acta Bot. Croat. 22: 209 (1963).

ABSENT FROM SERBIA.

Previous record of "*Chrysanthemum croaticum*" (Vukićević 1965) from Prokletije Mts in Metohija (SW Serbia), according to Niketić *et al.* (2020), actually corresponds to *L. illyricum* (Horvatić) Vogt & Greuter. *L. visianii* inhabits amphiadriatic dry steppic submediterranean pastures *Scorzone-retalia villosae* Kovačević 1959 (*Scorzonero villosae-Chrysopogonetalia grylli* Horvatić & Horvat 1957) in Croatia, Bosnia and Hercegovina and Montenegro (Horvatić 1963, as *L. croaticum*). This type of vegetation is not present in Serbia.

M. Niketić

Onopordum illyricum L. Sp. Pl.: 827 (1753) subsp. ***illyricum***.

ABSENT FROM SERBIA.

Although the type subspecies was not cited explicitly for the flora of Serbia (Hayek 1929, Gajić 1975, Mustafa 2015) it should be pointed out

that all previous records actually refer to *Onopordum illyricum* subsp. *cardunculus* (Boiss.) Arènes (see on page 52).

M. Niketić

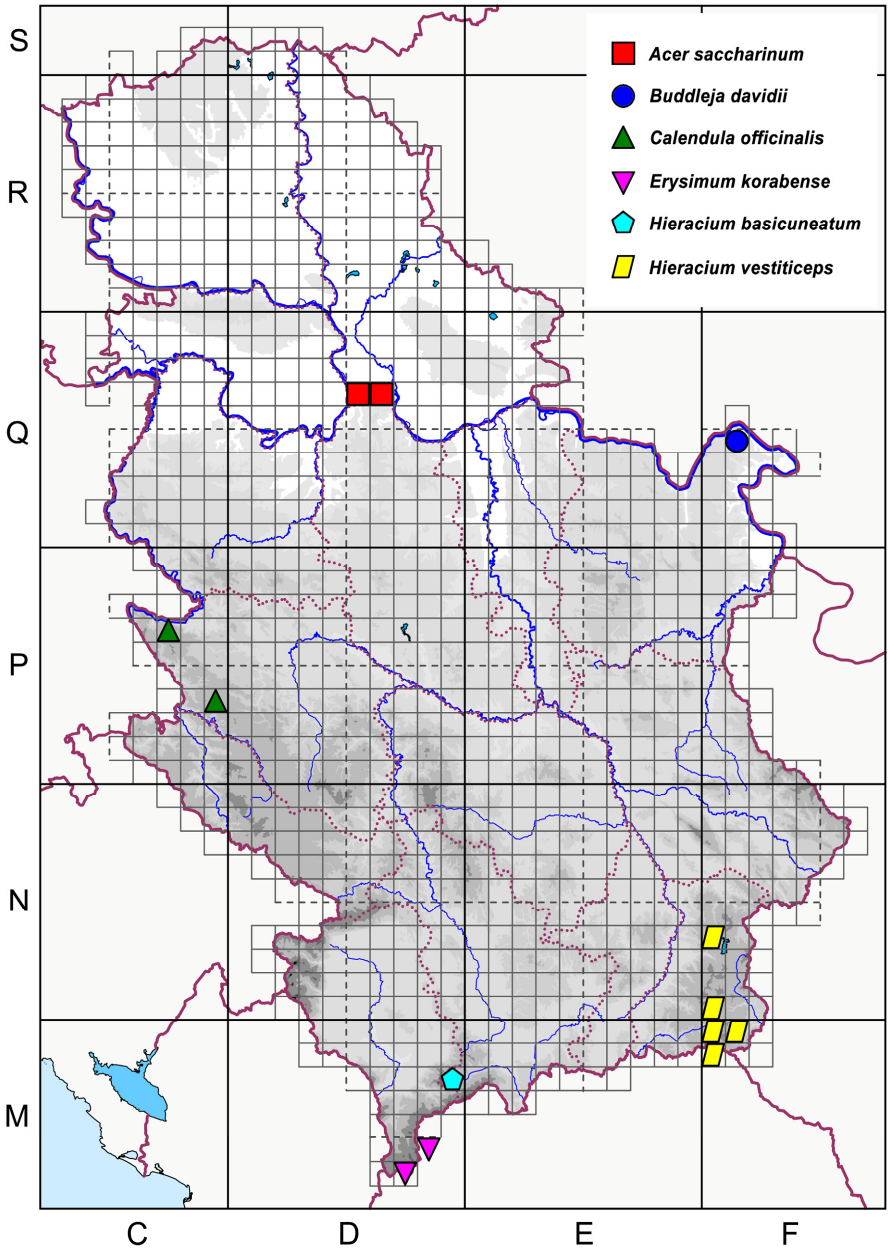

Fig. 26. – Distribution of some new taxa for the vascular flora of Serbia.

BORAGINACEAE

Cynoglossum creticum Mill., Gard. Dict. ed. 8.: n. 3 (1768).
= *C. pictum* Aiton in Hort. Kew. 1: 179 (1789).
ABSENT FROM SERBIA.

This species was reported for the first time for Serbia by Pančić (1874, as *C. pictum*), and was later mentioned in other publications, as well as in *Flora of SR Serbia* (Cincović & Kojić 1974) and according to the mentioned authors, there are no specific data for Serbia. All that data probably correspond to *C. montanum* L.

M. Niketić

Onosma aucheriana DC., Prodr. 10: 60 (1846).
ABSENT FROM SERBIA.

It was already mentioned as an erroneously reported taxon for the flora of Serbia in (Valdés & Raab-Straube 2011+). It as endemic species for Greece and Aegean islands and his occurrence in Anatolia is questionable (Hassler 2004+) and probably refer to *O. montana* Sm. (POWO 2022). All data for the Serbian flora correspond to *O. heterophylla* Griseb.

M. Niketić

Onosma cinerea Schreb., Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 3: 474 (1767).
= *O. taurica* Pall. ex Willd., Neue Schriften Ges. Naturf. Freunde Berlin 2: 122 (1799).
ABSENT FROM SERBIA.

It was reported for the first time for Serbia by Pančić (1874, as *O. taurica*) for the vicinity of Mokra Gora in W Serbia. It is distributed in Bulgaria, Romania, European Turkey, Crimea, Anatolia, Syria, N Caucasus and Transcaucasia (POWO 2022). According to Dimopoulos (2013) data for Greek flora refer to *O. erecta* Sm. Pančić's record from W Serbia actually correspond to *O. stellulata* Waldst. & Kit.

M. Niketić

Onosma echioides (L.) L., Sp. Pl. ed. 2.: 196 (1762) subsp. ***echioides***.
ABSENT FROM SERBIA.

It was reported for the first time for Serbia by Pančić (1874, as *O. echioides*) for Mt Rtanj in E Serbia. However, according to Hassler (2004+) and Valdés & Raab-Straube (2011+) it is restricted to Apenninian Peninsula. Pančić's record from E Serbia actually correspond to *O. heterophylla* Griseb.

M. Niketić

Onosma echioides subsp. ***dalmatica*** (Scheele) Peruzzi & N. G. Passal., Bot. J. Linn. Soc. 157: 772 (2008).
= *O. javorkae* Simonk., Magyar Bot. Lapok 5: 385 (1906) ≡ *O. aucheriana* subsp. *javorkae* (Simonk.) Hayek, Repert. Spec. Nov. Regni Veg. Beih. 30(2): 86 (1928).
ABSENT FROM SERBIA.

According to Hassler (2004+) this subspecies is restricted to the N Adriatic coast (Croatia, Bosnia & Hercegovina, Slovenia and Albania) and its occurrence in NE Italy is questionable. In the *Flora of SR Serbia* it was reported for W Serbia (Ovčarsko-Kablarska gorge). Most misapplied records for Serbia correspond to *O. heterophylla* Griseb., but some may also refer to *O. stellulata* Waldst. & Kit. (Čolić 1953) or *O. pseudoarenaria* subsp. *fallax* (Borbás) Rauschert ().

M. Niketić

BRASSICACEAE (CRUCIFERAE)
Erysimum rhaeticum (Schleich. ex Hornem.) DC., Syst. 2: 503 (1821).
≡ *Cheiranthus rhaeticus* Schleich. ex Hornem., Hort. Bot. Hafn.: 613 (1815) [basionym].
= *Cheiranthus helveticus* Jacq., Hort. Vindob. 3: 9 (1776) ≡ *E. helveticum* (Jacq.) DC., Lamarck & Candolle, Fl. Franç., ed. 3, 4: 658 (1805).
ABSENT FROM SERBIA.

It was already mentioned as an erroneously reported taxon for the flora of Serbia in (Marhold 2011+). Under the name *E. helveticum* (Jacq.) DC. it was reported for the first time for Serbia by Pančić (1874) for E Serbia and Šumadija and it was also cited in the *Flora of SR Serbia* (Nikolić 1972). Since the species is limited to the Alps, Pančić's data actually correspond to *E. comatum* Pančić in E Serbia and *E. linariifolium* Tausch in Šumadija. According to Marhold (2011+), Polatschek (2013) and POWO (2022) *E. helveticum* is actually a synonym for *E. cheiri* (L.) Crantz.

M. Niketić

Erysimum sylvestre (Crantz) Scop., Fl. Carniol., ed. 2, 2: 28 (1771) subsp. ***sylvestre***.
≡ *Cheiranthus sylvestris* Crantz, Stirp. Austr. Fasc., ed. 1, 1: 48 (1762) [basionym].
ABSENT FROM SERBIA.

This subspecies was reported for Serbia in the *Flora of SR Serbia* (Nikolić 1972). In *Euro+Med* (Marhold 2011+) was also shown to be present in Spain and Montenegro and its occurrence in Greece and Albania

was disputed. However, Rohlena's (1942) records for this species (*E. sylvestre* subsp. *cheiranthus* Schinz & Thell. and *E. sylvestre* subsp. *linariifolium* (Tausch) Hayek) actually refer to *E. odoratum* Ehrh. and *E. linariifolium* Tausch, so its presence in Montenegro is unlikely. This assumption is also confirmed by Polatschek (2013) who claims that the species is distributed only in E Alps and Dinarides up to Croatia. Records from Serbia also correspond to *E. odoratum* and *E. linariifolium*.

M. Niketić

Hesperis matronalis L., Sp. Pl.: 663 (1753) subsp. ***matronalis***.

ABSENT FROM SERBIA.

According to the *Flora of SR Serbia* (Nikolić 1972) and *Flora Europaea* (Ball 1993) the type subspecies of *H. matronalis* has lower leaves covered with mainly unbranched hairs and it is distributed in W Europe and goes to the east to Italy (not to Serbia). In *Atlas Florae Europaeae* (Jalas & Suominen 1994) only species-rank distribution was mapped, without infraspecific taxa and according to Hassler (2004+), Marhold (2011+) and POWO (2022) it is native and widespred in most of Europe (including Serbia) and W Asia. However, in samples from Serbia we have observed only individuals with numerous branched hairs on lower leaves. Therefore, we believe that the distribution of the type species should be thoroughly re-examined.

M. Niketić

CARYOPHYLLACEAE

Dianthus stribrnyi Velen., Sitzungsber. Königl. Böhm. Ges. Wiss., Math.-Naturwiss. Cl. 1892: 15.

ABSENT FROM SERBIA.

The only data for Serbia originated from the vicinity of Bosilegrad in SE Serbia (Gajić 1970, Diklić & Stevanović 2012). They are based on herbarium specimens in BEO which, after revision, were found to actually belong to the C Balkan endemic species *D. stenopetalus* Griseb.

Specimen examined:

Dianthus stenopetalus – JI Srbija, Bosilegrad, Mt Dukat Planina, way to Crnook peak, 1300-1500 m, meadow, MGRS 34T FN10, coll. L. Rajevski 15-Jul-1948, det. L. Rajevski (sub *D. stribrnyi*), rev. M. Niketić 22-Feb-2021 (BEO 4517).

Dianthus stenopetalus – JI Srbija, Bosilegrad, Mt Buceljevska Planina, 1200-1500 m, mountain meadow, MGRS 34T FN10, coll. L. Rajevski

15-Jul-1948, det. L. Rajevski (sub *D. stribrnyi*), rev. M. Niketić 22-Feb-2021 (BEO 4518).

M. Niketić

FABACEAE (LEGUMINOSAE)

Chamaecytisus tommasinii (Vis.) Rothm., Feddes Repert. Spec. Nov. Regni Veg. 53: 144 (1944).

≡ *Cytisus tommasinii* Vis., Fl. Dalmat. 3: 265 (1851) [basionym].

ABSENT FROM SERBIA.

Inspection of the original samples of *C. tommasinii* (PAD) from SW Montenegro and the recent material from *locus classicus* and surrounding areas has shown a clear morphological pattern: calyx fine patent-hairy (not mixed with appressed or erecto-patent hairs), stem and leaves appressed hairy, becoming black in herbaria, leaflets ± obovate, etc. Examined specimens from C. Bosnia, N. Montenegro, Serbia (incl. Kosovo and Metohija) do not mach that morphology, although they are identified as *C. tommasinii* or grow on historically known places for this species. In most cases, they actually correspond to *C. albus* Hacq. subsp. *pallidus* (Schrad.) Niketić. The isotype of *C. tommasinii* var. *keraunius* K. Malý (1920) (BEOU) from C Bosnia also correspond to *C. albus* sensu lato. *C. tommasinii* is certainly recorded for submediterranean part of S Adriatic coast and hinterland in Montenegro and Herzegovina, SW part of North Macedonia and probably in N Albania and W Greece. And also, according to the ecology of the species we can suppose that all records for Serbia are doubtful.

M. Niketić

LAMIACEAE (LABIATAE)

Stachys leucoglossa Griseb., Spic. Fl. Rumel. 2: 140 (1844) subsp. ***leucoglossa***.

ABSENT FROM SERBIA.

This species with whitish flowers from the *Stachys recta* group was described from the peninsula of Khalkidhiki in NE Greece (Grisebach 1844). According to Greek authors (Dimopoulos 2013), in Greece the species seems to be restricted to the northeastern part of Greek Macedonia and the island of Samothrace. Velenovský (1891) was the first to report it throughout Bulgaria. It should be noted that the author did not mention the widespread *S. atherocalyx* K. Koch, which also has white flowers, indicating a possible misapplication of the name. Although both species are

now considered widespread in the flora of Bulgaria (Koeva 1989, Asjov *et al.* 2012), we did not find a single valid specimen of *S. leucoglossa* Griseb. in the Sofia Herbarium (SOM), and they were all misidentified. We assume that this (sub)Mediterranean species is actually restricted in Bulgaria to the southern Rhodopes Mts towards the border with Greece. Future research will determine the actual size of the species' range. According to Matevski (2021), there is no evidence for the occurrence of *S. leucoglossa* in the flora of North Macedonia and previous reports actually refer to the local endemic *S. babunensis* Micevski.

Considering that the range of this thermophilic species is probably much smaller than was thought until recently, its occurrence in Serbia is almost impossible. Especially, considering that the only information about its presence comes from Hayek (1929), who only refers in general to its occurrence in the flora of Serbia, without giving a specific locality. This report was later included in the *Flora of SR Serbia* (Diklić 1974). Hayek's data for Serbia and Macedonia (probably for the part of Greek Macedonia, not the present-day North Macedonia) were probably the source for POWO (1922), indicating the presence of this species on the territory of former Yugoslavia.

M. Niketić, M. Ranimirović, S. Đurović, G. Tomović

ROSACEAE

Alchemilla fissa Günther & Schummel., Exsicc. (Cent. Siles.) 9: n.° 2 (1819).

= *A. pyrenaica* Dufour, Ann. Gén. Sci. Phys. 8: 228 (1821).

= *A. glaberrima* (F. W. Schmidt) Opiz in Berchtold & Opiz, Oekon.-Techn. Fl. Böhm. 2(1): 16 (1838).

ABSENT FROM SERBIA.

According to Kurtto *et al.* (2007) and Kurtto (2009+) this species is widespread in European mountain massifs (Pyrenees, Alps, Tatra, Carpathians, Balkan mountains) and Anatolia. The last occurrence in NE Turkey (Hayirlioglu-Ayaz & Inceer 2009) might be doubtful, because it's drawing is more like *A. venosula* or some other species. Although *A. fissa* Günther & Schummel. was mentioned several times for the flora of Serbia, a review of the herbarium material indicated that these data actually refer to *A. venosula* Buser (see on page 66). The species was recorded for Šar Planina Mts (Bornmüller 1926, as *A. glaberrima*, Janić 1984, as *A. pyrenaica*), as well as for Stara Planina Mts, Mt Suva Planina and Prokletije Mts (Niketić 2000, as *A. pyrenaica*).

M. Niketić

Alchemilla incisa Buser in C. Magnier, Scrin. Fl. Select. 11: 255 (1892).
ABSENT FROM SERBIA.

Previous data on the presence of this species in former Yugoslavia refer to the Montenegrin part of Prokletije Mts massif (Martinčić 1990, Grbaja and Karanfili). According to Fröhner (1990) this material needs further study, while Kurtto *et al.* (2007), based on the records of Martinčić (1990), confirmed the presence of the species but for the entire territory of "Serbia and Montenegro", which existed as a state at that time. Finally, Kurtto (2009+) misinterprets this record, listing the species for both Serbia and Montenegro.

M. Niketić

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

Р Е З И М Е

МАРЈАН НИКЕТИЋ, ГОРДАНА ТОМОВИЋ, ГОРАН АНАЧКОВ, ВЛАДАН ЂОРЂЕВИЋ, САЊА ЂУРОВИЋ, ШЕМИЈА ДУРАКИ, ЕВА КАБАШ, ДМИТАР ЛАКУШИЋ, ГОРАНА ПЕТКОВСКИ, СИЛВАНА ПЕТРОВИЋ, МИЛАНА РАНИМИРОВИЋ, ВИОЛЕТА СЛАВКОВСКА, ЉУБОШ УШЈАК, МИЛОШ ЗБИЉИЋ, БОЈАН ЗЛАТКОВИЋ, ВЛАДИМИР СТЕВАНОВИЋ

У раду је предложено пет нових номенклатурних комбинација, а поред тога, представљено је 17 таксона (врста, подврста и хибрида) васкуларне флоре који су нови за флору Србије (од тога 12 аутохтоних и пет алохтоних биљак). Потврђени су стари или непоуздани наводи за две аутохтоне биљке у флори Србије. У последњем делу рада дате су информације о деветнаест таксона чије је присуство у Србији или у њеним територијалним јединицама оповргнуто.