

Noteworthy floristic records from Jablanica Mt., Republic of Macedonia

Aco Teofilovski

Public Enterprise Makedonski šumi, Pero Nakov bb, 1000 Skopje, Republic of Macedonia
e-mail: acoteofilovski@hotmail.com

Abstract

The first record of *Crepis reuteriana* for the flora of Macedonia and new records of 21 rare and obscurely known vascular plants from Mt. Jablanica (SW Macedonia) are presented: *Alkanna scardica*, *Bromopsis inermis*, *Carex ferruginea*, *Cephalaria ambrosioides*, *Corallorhiza trifida*, *Crepis conyzifolia*, *Cymbalaria muralis*, *Eleocharis quinqueflora*, *Epilobium roseum* subsp. *roseum*, *Epilobium palustre*, *Euphorbia lathyris*, *Hesperis matronalis*, *Inula bifrons*, *Medicago carstiensis*, *Peucedanum arenarium* subsp. *neumayeri*, *Rhinanthus mediterraneus*, *Scandix macrorhyncha*, *Seseli libanotis*, *Sesleria tenerrima*, *Veronica prostrata* and *Vicia pisiformis*.

Key words: *Crepis reuteriana*, flora, Macedonia, vascular plants

Introduction

Republic of Macedonia is a well known floristically reach region. Mt Jablanica is one of its most important areas with high plant diversity, which owns to its geographical position, heterogeneous geo-morphological composition, etc. This mountain is located in the SW part of Macedonia and adjacent part of E Albania, belonging to Adriatic watershed and Scardo-Pindic mountain chain. Macedonian part of this mountain was explored by many botanists, among whom the most abundant data presented: Černjavski (1943), Micevski (1985, 1993, 1995, 1998, 2001, 2005), Matevski (2010) etc.

Owing to my professional field work on mountain Jablanica in 2016 and 2017, I had an opportunity to visit numerous localities throughout its largest part and to collect an abundant herbarium of vascular plants belonging to various taxonomical groups. In this work a selected list of taxa is treated. Some unpublished data referring to some of the listed plants, based on author's collections from other localities in Macedonia, are also included.

Material and methods

The collected specimens were herbarised using standard methodology and stored in the herbarium of

the author ("A.T." in the text). The following literature was used for identification: Flora of the Republic of Macedonia (Micevski 1985, 1993, 1995, 1998, 2001, 2005, Matevski 2010), Flora Europaea (Tutin et al. 1964, 1968, 1972, 1976, 1980), Prodrum Flora peninsulae Balcanicae I-III (Hayek 1924-1927, 1928-1931, 1932-1933).

Results and discussion

Alkanna scardica Griseb.

Mt Jablanica – 0,8 km SW of Vevčanska Lokva, stony places, on conglomerate, 2060 m, 41°14'14.11"N, 20°31'36.40"E, 12.7.2017, leg. A. Teofilovski (herb. A.T.).

This Balkan endemic in addition to Macedonia is distributed also on Mt Prokletije (E Montenegro, N Albania, E Kosovo), Kosovo part of Mt Šar Planina and one locality in the vicinity of Kuks in N Albania (Rechinger 1965, Duraki et al. 2010). On the territory of Macedonia this species was previously known from Mt Dešat (Matevski 2010) and the wider area of Mt Šar Planina: Kobilica (*locus classicus*) (Grisebach 1844, Bornmüller 1928), between Elak and Lešnica (Matevski 2010), Raduša (Stevanović and Stevanović 1985) and Koža (Rechinger 1965). The reports from: Šiševo (Skopje), Alšar and between Zborsko and Alšar (Degen and Döerfler 1897), according to the Bornmüller's

(1928) revision of the herbarium collections, relate to *A. noneiformis* Griseb. Interestingly, the collection of Degen from the later locality was quoted by Rechinger (1965) as *A. scardica*, but even so, the presence of *A. scardica* on this locality is still questionable. Likewise, the collection from Prilep (Trojaci), reported by Stojanoff (1928) as *A. scardica*, was revised by Matevski (2010) also as *A. noneiformis*. Having in mind these revisions, Mt Dešat is considered the previously known southernmost point of the species range, and therefore, the discovery of *A. scardica* on Mt Jablanica is of a phytogeographic importance, shifting the border of its distribution range for ca. 40 km toward south.

***Bromopsis inermis* (Leyss.) Holub**

Struga (foothill of Mt Jablanica) - Kališta village, Elen Kamen, near the road to Livadišta, 740 m, 41° 8'21.25"N, 20°38'43.60"E, 12.6.2017, leg. A. Teofilovski (herb. A.T.); Skopje - Gazi Baba, near the railway, 42° 0'1.33"N, 21°28'38.49"E, 4.6.2014, leg. A. Teofilovski (herb. A.T.).

This species is known only from two reports. The first one is a rather general, referring to a large area comprising territories of several neighboring municipalities: Bitola, Prilep, Kruševo, and Demir Hisar (Todorovski 1969, sub *Bromus inermis* Leyss.), without data for any specific localities, while the second one is from the central part of Skopje (Teofilovski 2011).

***Carex ferruginea* Scop.**

Mt Jablanica – near Belička River, wet place, 1830 m, 41°13'48.80"N, 20°31'44.61"E, 12.7.2017, leg. A. Teofilovski (herb. A.T.); Mt Jablanica – 1,6 km W-NW from Gorna Belica village, wet place, 1630 m, 41° 13'33.07"N, 20°32'17.78"E, 14.6.2017, 12.7.2017, leg. A. Teofilovski (herb. A.T.); Mt Šar Planina – Lešnica, damp grassy place, 1460 m, 42°1'35.13"N, 20° 47'12.94"E, 20.6.2012 leg. A. Teofilovski (herb. A.T.).

This species is only recently mentioned for the first time in the flora of Macedonia, for high mountain regions of Mt Korab (Milanović et al. 2011), based on a personal communication with V. Stevanović. There is only another one report which refers just to Macedonia in general (Matevski 2013). Therefore, the new records from Mts Jablanica and Šar Planina, are the first ones in Macedonia which are based on specific herbarium collections. *Carex ferruginea* is a glacial relict species (Matevski 2013), distributed in the Alps, S Carpathians, and mountains of S Europe.

***Cephalaria ambrosioides* (Sibth. & Sm.) Roem. & Schult. (Fig. 1)**

Mt Jablanica – Belička River, 2,7 km SW from Oktisi village, 1130 m, 41°12'42.20"N, 20°35'14.56"E, 17.7.2017, leg. A. Teofilovski (herb. A.T.); Struga (foothill of Mt Jablanica) – Elen Kamen, near the road to Livadišta, 710 m, 41°08'9.51"N, 20°38'43.74"E, 31.5.2017, leg. A. Teofilovski (herb. A.T.).

The distribution of this species in Macedonia is restricted to its southern parts. Following are the previous reports: Demir Kapija, Bitola (Krkliño) (Vandas 1909), Alšar, Valandovo (Gradec) (Soška 1939), Ohrid (Grecescu 1899, sub *C. macropylla* Griseb.), Mt Galičica (Černjavski 1943, Weber 1951). On both newly discovered sites this robust perennial thrives abundantly, on open and bushy stony places, on carbonate geological substrate.

***Corallorhiza trifida* Châtel.**

Mt Jablanica – 1,6 km S-SE from Gorna Belica village, beech forest, carbonate substrate, 1570 m, 7.6.2017, leg. A. Teofilovski (herb. A.T.); Mt Jablanica – 4,1 km W from Boroec village, beech forest, 1750 m, 5.7.2017, leg. A. Teofilovski (herb. A.T.).

A typical forest species with a scattered occurrence in Macedonia. Following are the previous reports: Mt Suva Gora (Ćam) (Em 1974, Teofilovski 2011), Mt Skopska Crna Gora, Mt Šar Planina (Ljubotenska Reka), Gorna Radika, Mt Jakupica (Juručica), Mt Kožuf (Asan Češma), Mariovo (Gradešnica) (see Matevski and Kostadinovski 1999).

***Crepis conyzifolia* (Gouan) A. Kern. (Fig. 2)**

Mt Jablanica – 0,8 km SW of Vevčanska Lokva, stony places and subalpine meadows, on conglomerate, 1980 -2100 m, 12.7.2017, leg. A. Teofilovski (herb. A.T.).

This is a S European - Anatolian species, previously reported only from few localities on Mt Osogovo (Ajdučka Češma, Carev Vrv, Ruen, Sasa) (Micevski 1978a) and one on Mt Šar Planina (Plat) (Teofilovski 2014). On the new locality in subalpine belt of Mt Jablanica, it occurs frequently, on a relatively large area of 5 ha, on stony places and subalpine meadows. Interestingly, although widely considered as a calcifuge species (Sell 1976), on the discovered locality on Mt Jablanica it grows on conglomerate with a carbonate component, and on the locality Plat on Mt Šar Planina on limestone (Teofilovski 2014).

***Crepis reuteriana* Boiss. (Fig. 3)**

Mt Jablanica – NE from border pass Čafasan, 1030-1190 m, oak forest and roadside, carbonate substrate, 41°5'37.10"N, 20°36'15.38"E, 20.6.2017 leg. A. Teofilovski (herb. A.T.).

This is a new species in the flora of Macedonia. On the discovered site, several tenths of individuals were observed, growing on bushy and stony places near a forest road and in an oak forest, on carbonate geological substrate.

Crepis reuteriana is a Balkan - Anatolian endemic, distributed from W Albania, Corfu Island and W Greece, to N and W Anatolia, E Syria and N Israel (Lamond 1975, Sell 1980, Kamari 1991, Barina 2017, etc.). Its northernmost locality lies in European part of Turkey (Lamond 1975), but it is still not found on the territory of Bulgaria (Assyov et al. 2012). The southernmost point of its distribution range in Balkan Peninsula is Monanstriraki in W Greece (Anagnostopoulos 1997).

According to the distribution maps given by Anagnostopoulos (1997) and Barina (2017), the closest known localities to the newly recorded one on Mt Jablanica, are Elbasan in C Albania and Vrontero in NW Greece, c. 45 km west and 50 km southeast, respectively.

Description: Perennial; stems 30-75 cm, branching from near the base. Leaves pubescent or hispidulous; basal 4-18 x 1-3 cm, oblanceolate, lyrate-runcinate-pinnatifid or coarsely dentate, acute to obtuse; lower cauline like the basal or all bract-like. Involucre 10-13 x 4-7 mm; bracts linear-lanceolate, acute, mostly with a white margin, glabrous or sparsely pubescent, pubescent on inner face, the outer $\frac{1}{4}$ - $\frac{1}{3}$ as long as the inner. Achenes 4-5 x c. 0-5 mm, fusiform, attenuate at apex, slightly constricted above base, c. 15-ribbed. (Sell 1980)

This species belong to *Crepis* Sect. *Phaeacasium* (Cass.) Dumort., encompassing two additional species in Europe (Sell 1980), among which in Macedonia occurs only *C. pulhra* L., which is common species over the most of Macedonian mountains and valleys. Though similar in outline to *C. reuteriana*, it can be easily distinguished by its annual habitat, more leafy stem, etc.

***Cymbalaria muralis* P. Gaertn., B. Mey. & Scherb.**

Struga – foothill of Mt Jablanica, Kališta village, St. Bogorodica, carbonate rocks, 735 m, 31.5.2017, leg. A. Teofilovski (herb. A.T.); Struga - N periphery, near Crn Drim River, quay walls just over the river, 23.8.2016, observ. A. Teofilovski (photog.); Ohrid – near St. Kaneo, walls, 8.2005, observ. A. Teofilovski.

On the first locality only few specimens were observed, growing in the crevices of carbonate rocks, just near the gate of monastery St. Bogorodica, while on the two other localities this species occurs as a pioneer species between the stone blocks of the walls. So far it was known from three other localities: Ohrid (Sveti Naum), Skopje (quay of the Vardar River) and Veles (Izvor) (see Matevski and Kostadinovski 1999).

***Eleocharis quinqueflora* (Hartmann) O. Schwarz**

Mt Jablanica – below Labuniška Lokva, marshy place near a mountain stream, 1890 m, 4.7.2017, leg. A. Teofilovski (herb. A.T.).

A rare species in the flora of Macedonia, previously known only from the following two rather old reports, lacking any recent confirmation: Dojran (Furka) (Jurišić 1923) and Mt Rudoka (Rudski 1938). It is also reported from Greek part of Mt Nidže (Dobro Pole), close to Macedonian borderline (Velenovský 1922). Its distribution range comprises much of Europe, Asia, N America, and NW Africa.

Epilobium roseum* Schreb. subsp. *roseum

Mt Jablanica – 3,0 km W-SW from Radolišta village, wet place near a fountain in a beech forest, 1440 m, 10.8.2017, leg. A. Teofilovski (herb. A.T.).

This subspecies was only recently recorded for the first time in Macedonia, at the foothills of Mt Suva Gora (Gorna Lešnica) (Teofilovski 2011). In the treatment of *E. roseum* in the "The Flora of the Republic of Macedonia", only the presence of the subsp. *subsessilis* (Boiss.) Raven was confirmed (several localities in W Macedonia), but some of the reports of *E. roseum* s.l., may relate to subsp. *roseum* [Tetovo, Bitola, Veles (Prevalec), Strumica (Gabrovo, Kolešino)] (see Micevski 2001).

The distinction between subsp. *roseum* and *subsessilis* is based on the petioles length, 4-15 mm vs. 1-3 mm, respectively (Micevski 2001). The specimens in the collection from the vicinity of Radolišta village have petioles 4-12(15) mm, clearly matching to subsp. *roseum*.

***Epilobium palustre* L.**

Mt Jablanica – 3,1 km NW from Lakavica village, marshy place, 1440 m, 20.6.2018 leg. A. Teofilovski (herb. A.T.).

This species was known from several localities in mountain areas of NW, W and C Macedonia: Mt Šar Planina, Mt Korab, Mt Bistra, Gorna Radika, Mavrovska

Reka, Mavrovsko Pole, Mt Jakupica (see Micevski 2001). There is also a report from Greek side of Mt Nidže (Dobro Pole), close to the Macedonian border (Bornmüller 1927).

***Euphorbia lathyris* L. (Fig. 4)**

Struga – foothills of Mt Jablanica, Livadišta, near the road to Radožda village, 12.6.2017, leg. A. Teofilovski (herb. A.T.).

This is a rare adventive species in Macedonia, which probably originates from C and SE Asia. It was previously reported only from Probištip (Lesново) (Micevski 1998) and, as a cultivated plant, also from Gabrovo village (Strumica) (Stojanov 1921). According to Micevski (1998), this species no longer exists on the later locality.

On the newly discovered site, which is in an unsettled area, close to resort “Livadišta”, 7-8 fruiting individuals were recorded, growing between the fence of a vegetable garden and the road Livadišta – Radožda. The origin of this species on this locality is unknown. It could be in a connection with the high frequency of tourists in this area or with its possible cultivation in the nearby gardens, though according to some local residents, this species was never cultivated in the wider vicinity of this site.

***Hesperis matronalis* L.**

Mt Jablanica – NW and SE from Višni village, shrubby places, 1180-1320 m, 6.6.2017, leg. A. Teofilovski (herb. A.T.).

On the discovered site this species occurs very scattered, growing on shrubby places near beech forests and forest roads. It is a Europaeen and SE Asian species, separated to seven subspecies, two of which, subsp. *matronalis* and subsp. *cladotricha* (Borbás) Hayek, occurring natively in Balkan Peninsula (Marhold 2011). The collection from Mt Jablanica is not appropriate for discussing the subspecific affiliation of the discovered population.

H. matronalis was previously known from several reports, mostly of them referring to the species in *sensu lato* sense: Belasica [Borisovo (sub var. *runcinata* M. K.), Visoka Čuka] (Stojanov 1921), Prilep (Trojaci) (Stojanoff 1928), Gorna Radika (Adžina Reka), Debar (Bituše, Banjište) and Kavadarci (Majdan) (Micevski 1993).

***Inula bifrons* L.**

Mt Jablanica – 1,4 km S-SE from Gorna Belica vilage, near a forest road, carbonate substrate, 1450 m,

41°12'44.41"N, 20°33'48.06"E, 16.8.2017, leg. A. Teofilovski (herb. A.T.).

During the fieldwork in the area, only two exemplars of this noticeable species were recorded, growing near an abandoned forest road, in the belt of beech forests. This is a rare species in Macedonian flora, previously reported only from: Kavadarci (Rožden, Majdan) (Micevski 1983) and Kičevo (Izvor) (Rizovski 1984), with a general distribution in much of S Europe.

***Medicago carstiensis* Wulfen**

Mt Jablanica – near the road to Lakavica village, 1210 m, 13.7.2016, leg. A. Teofilovski (herb. A.T.); Mt Jablanica – near the forest road NW-W from Čafasan pass, 1030 m, 20.6.2017, leg. A. Teofilovski (herb. A.T.); Mt Jablanica – 0,35 km S from Višni village, near forest roads, 1220 m, 4.8.2017, leg. A. Teofilovski (herb. A.T.); Mt Jablanica – 1.3 km S of village of Modrič, near forest road, 1150 m, 30.6.2016, leg. A. Teofilovski (herb. A.T.); Mt Šar Planina – 1,1 km NE from Rogačevo village, open place, 930-1000 m, 22.7.2015, observ. A. Teofilovski; Mt Šar Planina – 0,9 km S from Selce Keč village, 1030 m, near forest road, 24.09.2015, leg. A. Teofilovski (herb. A.T.).

This species is distributed from NW Italy and Austria to SE Bulgaria, but it is still not found in Greece. In the flora of Macedonia it was reported for the first time from the vicinity of Debar (Banjište) (Micevski 1978), while recently it was registered also on Mt Šar Planina (Dobrošte, Otunje, Brezno) (Teofilovski 2011). Although Mt Jablanica lies on the south border line of its distribution range, this species is rather frequent and abundant on this mountain, occupying large areas alongside forest roads, between (900) 1000 and 1500 m, while on Mt Šar Planina it is significantly less frequent.

***Peucedanum arenarium* subsp. *neumayeri* (Vis.) Stoj. & Stef. (Fig. 5)**

Mt Jablanica – 2,8 km S-SW from Višni village, 41° 10'43.80"N, 20°34'14.45"E, 1750 m, 11.8.2017, leg. A. Teofilovski (herb. A.T.).

The discovered population is rather abundant, growing on a steep area of ca. 2000 m², on stony and rocky places, on carbonate geological substrate. The previous records for this taxa are mostly from the massif Kožuf - Nidže in S parts of Macedonia: Demir Kapija (Došnica), Kavadarci (Majden), Gevgelija (Negorci, Sermenin, Konjska Reka, Dlabok Dol), Mt Nidže (between Skočivir and Reder, Kajmakčalan) (Matevski

2005), with one northwestern outpost on Mt Suva Gora (Kunovo) (Teofilovski 2011). *Peucedanum arenarium* has a distribution range in SE Europe and Anatolia, while in Macedonia it is represented only by subsp. *neumayeri* (Matevski 2005), which occurs in the Balkan Peninsula and SW Anatolia.

***Rhinanthus mediterraneus* (Sterneck) Adamović** (Fig. 6)

Mt Jablanica – 2,2 km S from Gorna Belica village, 1735 m, 7.6.2017, leg. A. Teofilovski (herb. A.T.); Mt Jablanica – NW from Gorna Belica village, 1750 m, 15.6.2017; leg. A. Teofilovski (herb. A.T.); Mt Jablanica – 4,3 km E from Borovec village, 1780 m, 5.7.2017, leg. A. Teofilovski (herb. A.T.).

This is a Mediterranean orophyte species, discovered for the first time only recently on the territory of Macedonia, in the subalpine belt of Mt Galičica (Tepeno) (Teofilovski 2011). On Mt Jablanica numerous abundant subpopulations were observed in the vicinity of Gorna Belica, Višni, Labuništa, and Boroec villages, in the elevation belt between 1650-2000 m. It grows on stony places, mountain meadows, and pastures, on carbonate and conglomerate geological substrate.

***Scandix macrorhyncha* C. A. Mey.**

[Syn.: *S. pecten-veneris* L. subsp. *macrorhyncha* (C. A. Mey.) Rouy & E. G. Camus]

Mt Jablanica - Čuma, S slopes, rocky place, carbonate substrate, 1700 m, 8.6.2017, leg. A. Teofilovski (herb. A.T.); Struga – foothill of Mt Jablanica, Kališta village, near the church St. Atanasija, stony places, carbonate substrate, 700 m, 30.5.2017, leg. A. Teofilovski (herb. A.T.).

This is a S European species, previously known only from few other localities in the western third of the country: Mt Suva Gora, Mavrovo (Mavrovski Anovi, Koža), Mt Galičica, Prilep (Krasta), (see Micevski 2005, sub *S. pecten-veneris* subsp. *macrorhyncha*).

***Seseli libanotis* (L.) W. D. J. Koch** (Fig. 7)

Mt Jablanica – W-SW from Višni village, 1750 m, 11.8.2017, leg. A. Teofilovski (herb. A.T.); Mt Jablanica – near Belička River, 1580–1700 m, 3.7.2017, 12.7.2017, leg. A. Teofilovski (herb. A.T.); Mt Jablanica – 0,7 km SW from Labuniški Bačila, 1850–1880 m, 6.7.2017, leg. A. Teofilovski (herb. A.T.).

In all the recorded localities on Mt Jablanica this species grows on stony places and mountains mead-

ows, on carbonate geological substrate and only rarely also on conglomerate (near Belička River). It is a Eurasian species, previously known only from few mountain regions in W and NW Macedonia: Gorna Radika (Strezimir, Adžina Reka), Mt Stogovo (Gari) (Micevski 2005) and Mt Šar Planina (near Popova Šapka) (Teofilovski 2016).

***Sesleria tenerrima* (Fritsch) Hayek**

Mt Jablanica – 0,7 km W-SW from Labuniški Bačila, 1850 m, carbonate rocks, 41°16'4.22"N, 20°32'11.00"E, 21.6.2017, leg. A. Teofilovski (herb. A.T.); Mt Jablanica - Čuma, carbonate rocks, 1880–2000 m, 16.7.2017, observ. A. Teofilovski.



Figure 1. *Cephalaria ambrosioides* (Belička River) (photo A. Teofilovski)



Figure 2. *Crepis conyzifolia* (photo A. Teofilovski)



Figure 3. *Crepis reuteriana*, a - whole plant, b - flowering capitulas, c - fruiting capitula (photo A. Teofilovski)

This is S Balkan endemic, previously reported, though in some cases with question mark, from the following localities in western half of Macedonia: Mt Šar Planina (Turčin, ?Džinibeg, Selce), ?Mt Jakupica, Mt Golešnica (Patiška Reka), Mt Galičica, Mt Nidže (Bela Reka) (see Teofilovski 2011).

***Veronica prostrata* L.**

Mt Jablanica – Čuma, shrubby stony places, carbonate substrate, 1700 m, 41°13'34.28"N, 20°32'6.54"E, 14.6.2017, leg A. Teofilovski (herb. A.T.).

This species seems to be obscurely known in the flora of Macedonia, with only small number of reports: Mt Belasica (Gabrovo) (Stojanov 1921) and several localities in Skopje valley: Mt Žeden (Raduša, Dvorce) (Matvejeva 1965), Mt Osoj (Gorna Matka), and Vodno (Gorno Nerezi) (Krpač 2000). The report from Mt Žeden was not confirmed by Krpač (2000), in his monographic study of the genus *Veronica* in Skopje valley, and therefore should be considered as questionable.

***Vicia pisiformis* L.**

Mt Jablanica – near the road to Gorna Belica village, shrubby place, 1150–1190 m, 31.5.2017, leg. A. Teofilovski (herb. A.T.).

This is the most robust represent of the genus *Vicia* L. in the flora of Macedonia, previously known from three other mountain areas: Mt Baba (Ostrec, Velušina), Mt Šar Planina (Belovište) and Mt Suva Gora (Miletino) (see Teofilovski et al. 2012).

Conclusions

A list of 22 plants (20 species and two subspecies) from Mt Jablanica is presented, all of them being new for the flora of this mountain.

Crepis reuteriana is recorded for the first time in the flora of Macedonia.

Eleocharis quinqueflora is confirmed for the first time in the flora of Macedonia after about eight decades.

Carex ferruginea is confirmed for the first time for the territory of Macedonia based on specific herbarium collections.

The second locality on the territory of Macedonia is discovered for one subspecies and one species: *Epilobium roseum* subsp. *roseum* and *Rhinanthus mediteraneus*.

For the following five species a third locality on the territory of Macedonia is recorded: *Bromopsis inermis*, *Crepis conyzifolia*, *Eleocharis quinqueflora*, *Euphorbia lathyris*, *Inula bifrons* and *Medicago carstiensis*.

The forth locality is recorded for the following five species: *Alkanna scardica*, *Cymbalaria muralis*, *Scandix macrorhyncha*, *Seseli libanotis* and *Vicia pisiformis*.

One or more finding sites are added for the following rare plants in the flora of Macedonia: *Cephalaria ambrosioides*, *Corallorhiza trifida*, *Epilobium palustre*, *Hesperis matronalis*, *Peucedanum arenarium* subsp. *neumayeri*, *Sesleria tenerrima* and *Veronica prostrata*.

New southernmost point of the species range is established for *Alkanna scardica*.



Figure 4. *Euphorbia lathyris* (photo A. Teofilovski)



Figure 5. *Peucedanum arenarium* subsp. *neumayeri* (photo. A. Teofilovski)

Acknowledgements

The author is grateful to Vlado Matevski and an anonymous reviewer for their useful suggestions that improved the earlier draft of the manuscript.



Figure 6. *Rhinanthus mediterraneus* (photo A. Teofilovski)



Figure 7. *Seseli libanotis* (photo. A. Teofilovski)

References

- Anagnostopoulos A., 1997. Karyotype variation in *Crepis fraasii* and *C. reuteriana* (Asteraceae) in Greece. *Boccone*, 5: 721-726.
- Assyov B., Petrova A., Dimitrov D., Vassilev R., 2012. Conspectus of the bulgarian vascular flora. Bulgarian biodiversity foundation. Sofia.

- Barina, Z., 2017. Distribution atlas of vascular plants in Albania. Hungarian Natural History Museum. Budapest.
- Bornmüller, J., 1927. Bearbeitung der von H. Burgeff und Th. Herzog in den Kriegsjahren 1916-1918 in Mazedonien gesammelten Pflanzen. Allg. Bot. Z. Syst. 33: 25-38.
- Bornmüller, J., 1928. Beiträge zur flora Macedoniens. Engl. Bot. Jahrb. 3, 61: 1-136.
- Černjavski, P., 1943. Beitrag zur Kenntnis der Flora der Umgebung des Ochridasees. Ohridski zbornik, 35(2): 11-18.
- Degen A., Dörfler I., 1897. Beitrag zur Flora Albaniens und Mazedoniens. DAWW, 64: 702-748.
- Duraki Š., Tomović G., Niketić, M., 2010. Endemic flora of the high-mountain ridge of Kobilica at Šar Planina Mt. Abstracts. 10th Symposium on the Flora of Southeastern Serbia and Neighbouring regions, Vlasina 17 to 20 June 2010, 51.
- Em H., 1974. Tannenwald in Mazedonien, *Fago-Abietetum meridionale* ass. n. God. Zbor. Zem. Šum. Fak., Skopje, 26: 41-58. (In Macedonian)
- Grecescu, D., 1899. Plantes de la Macédonie appartenant au vilayet Monastir. Bucarest.
- Grisebach, A., 1844. Spicilegium florae Rumelicae et Bithynicae. Braunsvigiae.
- Hayek A., 1924-1927. Prodromus Florae peninsulae Balcanicae, 1. – Repert. Spec. Nov. Regni Veg. 30 (1): 1-1193.
- Hayek, A., 1928-1931. Prodromus Florae peninsulae Balcanicae, 2. – Repert. Spec. Nov. Regni Veg. 30 (2): 1-1152.
- Hayek, A., 1932-1933. Prodromus Florae peninsulae Balcanicae, 3. – Repert. Spec. Nov. Regni Veg. 30 (3): 1-472.
- Jurišić, Ž., 1923. Prilog flori južne Srbije. Spomenik Srpske Kraljevske Akademije LX, Prvi razred 10: 3-45.
- Kamari, G., 1991. *Crepis* L. In: Strid A, Tan K (eds.). Mountain flora of Greece, Vol. 2. University Press, Edinburgh. 576–595.
- Krpač, V., 2000. Taxonomy and chorology of the genus *Veronica* L. (Scrophulariaceae) in the Skopje Valley. Unpublished Master Thesis. Ss. Cyril and Methodius University in Skopje.
- Lamond, J.M., 1975. *Crepis* L. In: Davis, P.H. (ed.). Flora of Turkey and the East Aegean Islands. Vol. 5, Edinburgh Univ. Press, Edinburgh, 814-841.
- Marhold K., 2011. Brassicaceae. In: Euro+Med Plantbase - the information resource for Euro-Mediterranean plant diversity (accessed 30.10.2017).
- Matevski, V., 2005. *Peucedanum* L. In: Micevski K. (ed.). The Flora of the Republic of Macedonia I (6). pp. 1627-1635, Macedonian Academy of Sciences and Arts, Skopje. (In Macedonian)
- Matevski, V., 2010. The Flora of the Republic of Macedonia II (1). Macedonian Academy of Sciences and Arts, Skopje, 1-187. (In Macedonian)
- Matevski, V., 2013. Diversity and origin of the flora of the Republic of Macedonia Macedonian Academy of Sciences, Poseben otpečatok. 64 pp. (In Macedonian)
- Matevski, V., Kostadinovski, M., 1999. Contribution of the flora of Republic of Macedonia. III. God. zb., Biol. -Proir.-mat. fak. Univ. "Sv. Kiril i Metodij" Skopje, 52: 102-108. (In Macedonian)
- Matvejeva, J., 1965. Supplement to knowledge of flora of Žeden Mountain. – Acta Mus. Maced. Sc. Natur., Skopje, 10(2): 27-65. (In Macedonian)
- Micevski, K., 1978. Seltene und unbekannte Arten in der Flora Makedoniens. Ann. - Biol., Faculté de Biologie de Université "Kiril et Metodij" - Skopje, 31: 149-163. (In Macedonian)
- Micevski, K., 1978a: Typologische Untersuchungen der Wiesen- und Weiden-vegetation der Gebiete Maleš und Pijanec. Maleš i Pijanec 1, Macedonian Academy of Sciences and Arts, Skopje, p. 9-47. (In Macedonian)
- Micevski, K., 1983. Beitrag zur Kenntnis der Flora von Makedonien. VII. Ann. Fac. Biol. Univ., Skopje. 36: 127-134. (In Macedonian)
- Micevski, K., 1985. The Flora of SR Macedonia, I (1). Macedonian Academy of Sciences and Arts, Skopje, 1-152. (In Macedonian)
- Micevski, K., 1993. The Flora of the Republic of Macedonia I (2). Macedonian Academy of Sciences and Arts, Skopje, 153-391. (In Macedonian)
- Micevski, K., 1995. The Flora of the Republic of Macedonia I (3). Macedonian Academy of Sciences and Arts, Skopje, 398-778. (In Macedonian)
- Micevski, K., 1998. The Flora of the Republic of Macedonia I (4). Macedonian Academy of Sciences and Arts, 781-1113. (In Macedonian)
- Micevski, K., 2001. The Flora of the Republic of Macedonia I (5). Macedonian Academy of Sciences and Arts, Skopje, 1121-1430. (In Macedonian)
- Micevski, K., 2005. The Flora of the Republic of Macedonia I (6). Macedonian Academy of Sciences and Arts, Skopje 1433-1715. (In Macedonian)
- Milanović Đ., Brujić J., Stupar V. 2011. Reports 64-72. New floristic records in the Balkans: 15 Phytol. Balcan. 17(1): 141-144.

- Rechinger, K.H., 1965. Zur Kenntnis der europäischen Arten der Gattung *Alkanna*. Ann. Naturhist. Mus. Wien, 68: 191-220.
- Rizovski, R., 1984. Neue Fundorte einiger in Mazedonien seltener Pflanzen. Patrimoine Culturel, L'Institut Republicaine Pour la Protection du Patrimoine Culturel, Skopje, 9: 159-168. (In Macedonian)
- Rudski, I., 1938. Les associations de la plantes dans les hautes montagnes de la Serbie de la meridionale, Revue Forestière, Zagreb, 12: 311-623. (In Serbian)
- Sell P.D., 1976. *Crepis L.* In: Tutin T. G. et al. (eds.). Flora Europaea 4. The University Press, Cambridge.
- Soška, T., 1939. Beitrag zur Schluchtenfloren von Südserbien, II. – Bull. Soc. Scientif., Skoplje, 20(7): 35-58.
- Stevanović, V., Stevanović, B., 1985. *Asplenio cuneifolii-Ramondaetum nathaliae* – new chasmophytic community on serpentine rocks in Macedonia. Bull. Mus. Hist. Nat., Belgrade, 40: 75-87.
- Stojanov, N., 1921. Floristische Materialien von dem Belassica-Gebirge, Jahrbuch der Universität in Sofia, 15-16: 1-133. (in Bulgarian)
- Stojanoff, N., 1928. Thracische und Mazedonische Herbarmaterialien des Verstorbenen Prof. Dr. Theodor Nikoloff. Zeitschr. Bulg. Acad. Wissensch., 18: 49-209.
- Teofilovski, A., 2011. Contributions to the flora of the Republic of Macedonia, Priv. ed., Skopje, p.142. (In Macedonian)
- Teofilovski, A., 2014. Reports 213-239. In: Vladimirov V., Matevski V., Dane F., Kit Tan (eds.). New floristic records in the Balkans: 25. Phytol. Balcan., 20(2-3): 295-301.
- Teofilovski, A., 2016. Reports 85-96. In: Vladimirov V., Matevski V., Dane F., Kit Tan (eds.). New floristic records in the Balkans: 29. Phytol. Balcan. 22(1): 109-112.
- Teofilovski, A., Mandzukovski D., Simoski B., Acevski J., 2012. Chorology and habitats of some plants in the flora of Macedonia. Forest Review. Skopje, 43: 24-32.
- Todorovski, A., 1969. Eatable and (incl.) vitaminic flora of the area of the district of Bitola, Prilep, Kruševo, and Demir Hisar. Prilozi, Association for science and art. Bitola, 11: 1-26. (In Macedonian)
- Tutin T.G., Heywood, V.H., Burges, N.A., Valentine, D.H., Walters, S.M., Webb, D.A. (eds.) 1964. Flora Europaea 1. The University Press, Cambridge. 461 pp +maps
- Tutin T.G., Heywood, V.H., Burges, N.A., Moore, D.M., Valentine, D.H., Walters, S.M., Webb, D.A. (eds.) 1968. Flora Europaea 1. The University Press, Cambridge. 455 pp
- Tutin T.G., Heywood, V.H., Burges, N.A., Moore, D.M., Valentine, D.H., Walters, S.M., Webb, D.A. (eds.) 1968. Flora Europaea 2. The University Press, Cambridge. 455 pp
- Tutin T.G., Heywood, V.H., Burges, N.A., Moore, D.M., Valentine, D.H., Walters, S.M., Webb, D.A. (eds.) 1972. Flora Europaea 3. The University Press, Cambridge. 370 pp
- Tutin T.G., Heywood, V.H., Burges, N.A., Moore, D.M., Valentine, D.H., Walters, S.M., Webb, D.A. (eds.) 1976. Flora Europaea 4. The University Press, Cambridge-London-New York-Melbourne. 505 pp
- Tutin T.G., Heywood, V.H., Burges, N.A., Moore, D.M., Valentine, D.H., Walters, S.M., Webb, D.A. (eds.) 1976. Flora Europaea 5. The University Press, Cambridge-London-New York-Melbourne. 452 pp
- Vandas, C., 1909. Reliquiae Formánekianae. Brunae.
- Velenovský, J., 1922. Reliquiae Mrkvičkanae. Fr. Řivnáč, Praha.
- Weber, F., 1951. Une excursion botanique dans la montagne de Galičica en Macedonie Jugoslave. Zbornik Klubu prirodovedeckeho v Brne, 29.

Значајни флористички податоци од планината Јабланица, Република Македонија

Ацо Теофиловски

Во оваа публикација авторот презентира листа од следните 22 виши растенија собрани на планината Јабланица (ЈЗ Македонија): *Alkanna scardica*, *Bromopsis inermis*, *Carex ferruginea*, *Cephalaria ambrosioides*, *Corallorhiza trifida*, *Crepis conyzifolia*, *Crepis reuteriana*, *Cymbalaria muralis*, *Eleocharis quinqueflora*, *Epilobium roseum* subsp. *roseum*, *Epilobium palustre*, *Euphorbia lathyris*, *Hesperis matronalis*, *Inula bifrons*, *Medicago carstiensis*, *Peucedanum arenarium* subsp. *neumayeri*, *Rhinanthus mediterraneus*, *Scandix macrorhyncha*, *Seseli libanotis*, *Sesleria tenerrima*, *Veronica prostrata* и *Vicia pisiformis*, кои се ретки или се со ограничено распространување во Македонија, додека видот *Crepis reuteriana* е нов вид во флората на земјата.

Клучни зборови: виши растенија, Македонија, флора, *Crepis reuteriana*.