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Notes on the occurrence of selected sozologically and phytogeographically important plants in high-mountain area of the Svydovets and Chornogora (Ukrainian Carpathians)

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Abstract: Findings of threatened, rare, endemic, relict and phytogeographically important species of high-mountain plants, obtained during a research of the surroundings of glacial lakes Velykyy Apshynets, Brespo and Brebeneskul in the Ukrainian Carpathians in 2021, are presented. The species occurrence data contribute to the knowledge of the precise geographical distribution or chronological representation of sozologically important species *Allium schoenoprasum*, *Carex capillaris*, *C. limosa*, *C. pauciflora*, *Heracleum carpaticum*, *Juncus castaneus*, *J. triglumis*, *Salix phylicifolia*, *Scheuchzeria palustris* and *Swertia punctata* in Svydovets and Chornogora Mts. The importance of collecting new chorological data but also updating the previous ones is emphasized by a need to create the plant Red List for the Ukrainian Carpathians based on the newest IUCN criteria that were not yet taken into account.

Keywords: high-mountain flora, threatened species, endemics, relicts, glacial lakes.

Introduction

Botanical research in the Ukrainian Carpathians has a long tradition dating back to the late 18th century (Tasenkevych 2003). During the floristic, vegetation and ecological research more than 2020 species and subspecies of higher plants were found, representing almost half of the Ukrainian flora (Malynovskyy et al. 2002). They include 70 Carpathian endemics and subendemics (Novikoff & Hurdu 2015), 425 taxa of threatened plants (Kricsfalusy & Budnikov 2007) and 148 species listed in the Red Data Book (Malynovskyy et al. 2002). A high phytodiversity was found especially in Chornogora, Svydovets, Chyvchyn and Marmarosh mountain ranges where the most intensive botanical research took place.

In a number of published studies from the Ukrainian Carpathians there was a large amount of presented chorological data, but in many of them, the occurrences were noted very generally, without specific localities, often only at the level of floristic districts defined by Chopyk (Chopyk 1969, 1976). This impedes real spatial distribution overview of the individual species and the chronological context of their representation in the area. However, this information is essential e.g. for the assessment of populations' status for the Red Lists creation in accordance with currently valid IUCN principles as defined in versions 3.1 and 4.0 (IUCN 2012a, 2012b). They are equally important for the assessment of the rate of vegetation changes caused by an increasing high-mountain environment use for recreation in the last decades (Felbaba-Klushyna et al. 2023) as well as due to the change of climatic conditions (Kobiv 2018). The aim of our contribution is, therefore, to add precise location data of sozologically more interesting high-mountain plants and a chronological update of the already published data.

Material and Methods

Supplemented chorological information for the selected plant species and chronological update of their previous findings are based on the floristic research in the surroundings of glacial lakes Velykyy Apshynets, Brespo and Brebeneskul in the Svydovets and Chornogora Mts. realized in 2021. Of all the species recorded we present findings of the high-mountain plants classified as threatened in the Ukrainian Carpathians (Kricsfalusy & Budnikov 2007), or considered in this area rare, endemic, relict, or occurring at the boundary of their range (Malynovskyy et al. 2002; Chopyk & Fedoronchuk 2015).

Every locality with the species occurrence is characterized by mountain range name, a more detailed locality description, geographical coordinates and finding date. It is followed by an overview of further Ukrainian Carpathians areas or localities where the respective species was mentioned in recent literature. The overview, however, cannot be considered complete since it does not include herbaria information. The nomenclature of the plants is unified according to the Plants of the World Online database (POWO 2023).

Results and Discussion

***Allium schoenoprasum* L.**

Locality: Svydovets Mts., a large population with dozens of fruiting individuals in a bog on western edge of lake Velykyy Apshynets, near a stream flowing into the lake from below Mt. Troyaska (1702 m), 1490 m a.s.l., 48.2806886° N, 24.1561214° E, 15.8.2021.

The area of this circumpolar arctic-Eurasian-alpine taxon extends in the Arctic and in the mountains of Eurasia. Prokudin (1999) reported its occurrence very generally as "*in the Carpathians*" and Domin & Podpěra (1928) slightly more precisely ("*in Chornogora*"), Cherepanyn (2017, "*Svydovets, Marmarosh massif, Chyvchyn*"). According to Chopyk (1976, 1977) and Chopyk & Fedoronchuk (2015) it grows sporadically in subalpine meadows in the floristic districts of Svydovets, Chornogora, Marmarosh Alps and Chyvchyn-Grynyavy. In addition to the mentioned areas, Malynovskyy et al. (2002) reports it also from the floristic districts of Volcanic ridge and Transcarpathian foothills.

Some localities in the Chornogora Mts. are specified by Cherepanyn (2017, Tsybulnyk, Gadzhyna, Kizi Ulohy, Pohorylets), Kobiv & Nesteruk (2001, several places with spring and bog vegetation with the presence of *Pedicularis oederi* in Mt. Brebeneskul massif and in the Kizi Ulohy glacial cirque). Domin (1929) found this garlic in the Svydovets massif on the Polonyna Gropa and near the Svydovetskyy stream, later Kobiv et al. (2009), doing a detailed floristic research of the mountain range, noted it in several places (e.g. Troyaska-Tataruka glacial cirque, Polonyna Apshynetska and Polonyna Krachuneska), but they did not mention it in the location where we found it. The occurrence near Lake Velykyy Apshynets was recently published by Voloshchuk et al. (2020). Our finding represents the site of occurrence specification.

***Carex capillaris* L.**

Locality: Svydovets Mts., two fruiting individuals on the gravelly water-washed edges of a small stream flowing into lake Velykyy Apshynets from the north-facing slope below the saddle between Mt. Gereshaska (1762 m) and Mt. Troyaska (1702 m), cca. 1510 m a.s.l., 48.2799747° N, 24.1573553° E, 15.8.2021.

It is a very rare circumpolar arctic-Eurasian-alpine species of the Ukrainian Carpathians, whose area is represented by the Arctic and the mountains of Eurasia. Without specifying the localities, it is reported on alpine meadows and stony slopes in the Chornogora Mts., the Chyvchyn-Grynyavy Mts. (Chopyk 1976; Chopyk 1977; Danylyk 1993a, 1993b; Chopyk & Fedoronchuk 2015) and in the Gorgany Mts. (Chopyk 1976), or only in the Carpathians (Prokudin 1999). In the Chyvchyn Mts., Chopyk (1976) recorded a more numerous occurrence on the southeastern slope of Mt. Chyvchyn. It is reported from the Svydovets Mts. (Kobiv et al. 2009) only in rocky places at the glacial cirque end with lake Malyy Apshynets below Mt. Gereshaska peak (1762 m).

***Carex limosa* L.**

Locality: Svydovets Mts., rarely on muddy edges of the wettest parts of the oligotrophic bog on the northeastern edge of lake Velykyy Apshynets, 1490 m a.s.l., 48.2809583° N, 24.1584336° E, 15.8.2021.

It belongs to endangered species (category EN) of the Ukrainian Carpathians (Kricsfalusy & Budnikov 2007). So far, it has been found in bogs in almost all mountainous floristic districts. Without specifying location, it is mentioned in the Gorgany Mts., the Chornogora Mts., the Chyvchyn-Grynyavy Mts. (Chopyk 1976, 1977; Danylyk 1993b; Chopyk & Fedoronchuk 2015), or as occurring in the Carpathians (Prokudin 1999). From the Prikarpatye district, it is reported in the localities of the Velykyy Dnister bog, Podortse and Kaluske (Chopyk 1977; Chopyk & Fedoronchuk 2015), in the Gorgany Mts. it grows on the Glukhanya bog near the village of Negrovets (Kovalchuk et al. 2006), in the Marmarosh Mts. on Mt. Gropa (Kobiv et al. 2017). According to Chopyk (1976), this sedge is common in the Chornogora Mts., and in the Kizi Ulohy glacial cirque it was found almost in the alpine zone at 1760 m a.s.l. (Kobiv 2011). A little lower at about 1700 m a.s.l., it was discovered by Slobodyan (1981) in the valley of the Pohorylets stream in Mt. Pop Ivan Chornogorskyy area. It was already found by Domin (1929) in the Svydovets Mts. near lake Apshynets, it is also known from the lake below Mt. Gereshaska (Domin 1929; Chopyk 1976) and from the Polonyna Krachuneska (Kobiv et al. 2009). Our finding in the bog near lake Velykyy Apshynets confirms the previous data of Kobiv et al. (2009) and Voloshchuk et al. (2020).

***Carex pauciflora* Lightf.**

Localities: Svydovets Mts., abundant on a large part of the oligotrophic bog at lake Velykyy Apshynets northeastern edge, 1490 m a.s.l., 15.8.2021.

– Chornogora Mts., numerous on the oligotrophic bog at lake Brespo edge located west-southwest of Mt. Breskul, 1730 m a.s.l., 48.1436328° N, 24.5155642° E, 19.8.2021.

The area of this circumpolar arctic-alpine sedge is located in the Arctic and in the mountains of the northern hemisphere. In Ukraine it grows only in the Carpathians and in Central Polissya region, it is classified as threatened species in the category of vulnerable – VU (Kricsfalusy & Budnikov 2007) and is also included in the national Red Data Book (Didukh 2009). In the Carpathian part of Ukraine, it occurs sporadically and in isolated populations (Cherepanyn 2017) in all floristic districts (Prokudin 1999). Only general spread in the Predkarpatye district is mentioned by Malynovskyy et al. (2002), in the Eastern Beskids by Chopyk (1976) and in Chornogora by Danylyk (1993b). Also, without description of specific localities, it is noted in mountain to alpine zone bogs in the Gorgany Mts. (Malynovskyy et al. 2002; Didukh 2009), in the Svydovets Mts. (Chopyk 1977; Malynovskyy et al. 2002; Didukh 2009; Chopyk & Fedoronchuk 2015), in the Chornogora Mts. (Chopyk 1976, 1977; Malynovskyy et al. 2002; Didukh 2009; Chopyk & Fedoronchuk 2015), in the Marmarosh massif (Chopyk 1976, 1977; Malynovskyy et al. 2002; Didukh 2009;

Chopyk & Fedoronchuk 2015; Cherepanyn 2017) and in the Chyvchyn Mts. (Chopyk 1977; Malynovskyy et al. 2002; Didukh 2009; Chopyk & Fedoronchuk 2015; Cherepanyn 2017).

In the floristic district of the Volcanic Carpathians in Chorne Bagno bog near the village of Ilnytsya, the occurrence is reported by Kovalchuk et al. (2006), Felbaba-Klushyna (2015, ut Bagno) and Onyshchenko & Andrienko (2015, ut Bagno). In the Gorgany Mts., Onyshchenko & Andrienko (2015) report the occurrence in the localities of Yayko, Lysak, Osmoloda, Bagno, the lake below Mt. Grofa; Kovalchuk et al. (2006), Felbaba-Klushyna (2015) and Onyshchenko & Andrienko (2015, ut Negrovets) in the Glukhanya bog near the village of Negrovets; Kovalchuk et al. (2006) and Onyshchenko & Andrienko (2015) in the Zamshatka bog (= Glukha mlaka) near the village of Synevyrska Polyana. In the Marmarosh Mts., it grows on Mt. Gropa and Mt. Berlebashka (Kobiv et al. 2017). Several exact localities are known from the Svydovets Mts., e.g. Dragobrat (Danylyk & Borsukevych 2010; Danylyk et al. 2014; Cherepanyn 2017), Stereshora (Domin 1929), Shandryaska (Cherepanyn 2017), Lake Gereshaska (Domin 1929; Chopyk 1976), Polonyna Krachuneska (Kobiv et al. 2009), Andromeda bog near the village of Chorna Tysa (Kovalchuk et al. 2006; Felbaba-Klushyna 2015, ut Chorne Bagno). The locality recorded by us near lake Velykyy Apshynets is also mentioned by Kobiv et al. (2009) and Voloshchuk et al. (2020). In the Chornogora Mts., it has been reported several times from the Tsybulnyk locality (Danylyk et al. 2014; Cherepanyn 2017; Voloshchuk & Antosyak 2019), but also from the territory of the Ramsar site "Ozirnij-Brebeneskul" (Voloshchuk & Mykitchak 2020), from the area of Mt. Pop Ivan Chornogorskyy (Slobodyan 1981) and from the Pohorylets locality (Cherepanyn 2017), where it rises up to the altitude of 1750 m (Kobiv 2011, Mt. Breskul). Sosnovska & Danylyk (2015) published a more comprehensive description of the phytocoenological and ecological conditions of this species in the Ukrainian Carpathians, with several occurrences from the Svydovets Mts. (below Zhandarmy, glacial cirque Gereshaskyy - here the most numerous, Dragobrat region), the Chornogora Mts. (glacial cirque of Zaroslyak, glacial cirque between Mt. Pozhyzhevska and Mt. Breskul, lake Maricheyka, glacial cirque between Mt. Goverla and Mt. Breskul, side ridge of Mt. Goverla, glacial cirque below Mt. Mala Goverla, Tsybulnyk region), the Gorgany Mts. (bog Negrovets).

***Heracleum carpaticum* Porcius**

Localities: Chornogora Mts., the Brebeneskul stream valley, southeast of Mt. Gutyn Tomnatyk (2016 m), three fruiting individuals on the edge of *Pinus mugo* stand and an overgrown subalpine meadow dominated by *Calamagrostis villosa*, cca. 1705 m a.s.l., 48.0913689° N, 24.5618833° E, 18.8.2021.

– Chornogora Mts., the Brebeneskul stream valley, two fruiting individuals on the southeastern edge of lake Brebeneskul, 1790 m a.s.l., 48.1018214° N, 24.5616339° E, 18.8.2021.

It is an endemic species of the Eastern and Southern Carpathians (Kliment et al. 2016). On the basis of herbarium specimens, apart from a small part of the Ukrainian

Carpathians, it is known only from three mountain ranges in northern Romania and is documented in literature from six other Romanian mountain ranges (Bartók et al. 2014). In the Ukrainian Carpathians, it is classified in the category of endangered species - EN (Kricsfalusy & Budnikov 2007). Without specifying localities, it is reported on rocky places of the subalpine to alpine zone of the Svydovets Mts. (Chopyk 1977; Malynovskyy et al. 2002; Chopyk & Fedoronchuk 2015), the Chornogora Mts. (Chopyk 1977; Malynovskyy et al. 2002; Antosyak et al. 2009; Chopyk & Fedoronchuk 2015; Novikoff & Hurdu 2015), the Chyvchyn-Grynyavy Mts. (Chopyk 1977; Malynovskyy et al. 2002; Chopyk & Fedoronchuk 2015; Novikoff & Hurdu 2015) and the Marmarosh Mts. (Chopyk 1976, 1977; Malynovskyy et al. 2002; Antosyak et al. 2009; Chopyk & Fedoronchuk 2015; Novikoff & Hurdu 2015), respectively only in the Carpathians (Prokudin 1999).

In the Chornogora Mts., it is very rare on Mt. Goverla and Mt. Pop Ivan (both Chopyk 1976), there is a larger population at Mt. Shpytsy site consisting of about 600-900 individuals (Kyyak 2002). In the Marmarosh massif, it is known from Mt. Petros (Kobiv et al. 2017) and Mt. Pop Ivan (Chopyk 1976).

***Juncus castaneus* Sm.**

Locality: Svydovets Mts., a few individuals on gravelly edges of a nameless stream flowing into lake Velykyy Apshynets down the north-facing slope below the saddle between Mt. Gereshaska (1762 m) and Mt. Troyaska (1702 m), cca. 1510 m a.s.l., 48.2799747° N, 24.1573553° E, 15.8.2021, [depon. in herbarium of Peter Turis].

It belongs to the group of circumpolar arctic-alpine species of the Ukrainian Carpathians flora, whose area extends in the Arctic and in the mountains of the northern hemisphere. It is noted only generally as growing in damp and wet places, bogs, or near springs from the subalpine to alpine zone of the Gorgany Mts. (Chopyk 1976; Malynovskyy et al. 2002), the Svydovets Mts. (Malynovskyy et al. 2002), the Chornogora Mts. (Chopyk 1976; Malynovskyy et al. 2002), Marmarosh Mts. (Chopyk 1976; Malynovskyy et al. 2002) and the Chyvchyn-Grynyavy Mts. (Chopyk 1976), or only of the Carpathians (Prokudin 1999). Chopyk (1977) and Chopyk & Fedoronchuk (2015) recorded more precise places of occurrence in the Gorgany Mts. on Mt. Syvulya, Matsapyak & Kolyadzhin (2020) in the Chyvchyn Mts. on Polonyna Budychevska. Several specified localities are known from the Svydovets Mts. (Blyznytsya in Domin & Podpěra 1928; Chopyk 1977; Chopyk & Fedoronchuk 2015; Polonyna Krachuneska in Kobiv et al. 2009; Mt. Stih, Yasnaya and Polonyna Dragobrat - all in Chopyk 1977; Chopyk & Fedoronchuk 2015). Most of the data comes from the Chornogora Mts., it is known from Mt. Petros (Domin & Podpěra 1928; Chopyk 1977; Chopyk & Fedoronchuk 2015), Mt. Goverla, Mt. Brebeneskul, Mt. Pop Ivan Chornogorskyy, near the Balzatul stream and in the localities Pohorylets and Kizi Ulohy (all data Chopyk 1977; Chopyk & Fedoronchuk 2015).

***Juncus triglumis* L.**

Locality: Svydovets Mts., a few individuals on gravelly edges of a nameless stream flowing into lake Velykyy Apshynets down the north-facing slope below the saddle between the Mt. Gereshaska (1762 m) and Mt. Troyaska (1702 m), cca. 1510 m a.s.l., 48.2799747° N, 24.1573553° E, 15.8.2021 [depon. in herbarium of Peter Turis].

Like the previous species, it also belongs to the group of circumpolar arctic-alpine plants with the area in the Arctic and the mountains of the northern hemisphere present in the Ukrainian Carpathians. It belongs to their threatened species and is classified as vulnerable – VU (Kricsfalusy & Budnikov 2007). It is reported only at the level of floristic districts, without specifying localities, in moist, wet to muddy habitats and mountain to alpine zone springs in the Svydovets Mts. (Chopyk 1976) and the Chornogora Mts. (Chopyk 1976; Malynovskyy et al. 2002), or as occurring in high polonynas (Domin & Podpěra 1928), or only generally in the Carpathians (Prokudin 1999).

Our finding complements the three previously published occurrences in the Svydovets Mts. in the localities between Polonyna Gropa and Mt. Blyznytsya (Domin 1929), Polonyna Krachuneska (Kobiv et al. 2009) and Polonyna Apshynetska (Kobiv et al. 2009; Voloshchuk et al. 2020). In the Chornogora Mts., it is found on the mountains Balzatul, Pop Ivan Chornogorskyy and in the localities of Kizi Ulohy and Pohorylets (Chopyk 1977; Chopyk & Fedoronchuk 2015). It is also noted in spring and peat communities with the presence of *Pedicularis oederi* in several places on Mt. Brebeneskul and in Kizi Ulohy glacial cirque (Kobiv & Nesteruk 2001). There is an interesting finding of the species in Chorne Bagno bog near the village of Ilnytsya in the Volcanic Carpathians (Kovalchuk et al. 2006).

Fig. 1 *Salix phylicifolia* L. (left) in Chornohora Mts., the Brebeneskul stream valley and *Scheuchzeria palustris* L. (right) in Svydovets Mts., near the lake Velykyy Apshinets (both photo P. Turis).

***Salix phylicifolia* L.**

Localities: Chornogora Mts., the Brebeneskul stream valley, abundant in several springs on the southeastern slope of Mt. Gutyn Tomnatyk (2016 m) (lowest record 48.0902453° N, 24.5646358° E) and in springs near the Brebeneskul stream (e.g. 48.0932983° N, 24.5617092° E) up to lake Brebeneskul, 18.8.2021, [depon. in herbarium of Peter Turis; rev. R. J. Vašut].

According to several authors, in the Ukrainian Carpathians this willow is known only in the Chornogora Mts. Its occurrence in the Svydovets Mts. is reported only by Kricsfalusy (1982) near lake Apshynets, and Domin (1929) near the upper lake Gereshaska. It grows on the banks of streams and in wet places, especially in the subalpine zone, and is considered rare to very rare. It is not mentioned in the overview of the high-mountain flora of the Ukrainian Carpathians (Chopyk 1976), but other authors (without specifying the localities) note its presence in this area (Chopyk 1977; Prokudin 1999; Chopyk & Fedoronchuk 2015; Malynovskyy et al. 2002 ut *Salix bicolor* Willd.). In the overview of willows of the Ukrainian Carpathians, Kricsfalusy (1982) reports its sporadic occurrence in the whole of the Chornogora Mts., but he mentions it only on the mountains Petros, Goverla, Breckul, Menchul, Turkul, Pop Ivan and near lake Brebeneskul.

***Scheuchzeria palustris* L.**

Locality: Svydovets Mts., very rare on muddy edges of the wettest parts of an oligotrophic bog on the northeastern edge of lake Velykyy Apshynets, 1490 m a.s.l., 48.2809583° N, 24.1584336° E, 15.8.2021.

This species of the Ukrainian Carpathians is classified as endangered - EN (Kricsfalusy & Budnikov 2007) and is included also in the Red Data Book of Ukraine (Didukh 2009). Chopyk (1976) does not mention this very rare plant of uplands and transitional mires in this area. According to other published data presenting only general information, it grows in the floristic districts of Beskids and Low Polonynas, Gorgany, Svydovets, Chornogora, Chyvchyn-Grynyavy and Marmarosh (Malynovskyy et al. 2002), or, in the Carpathians (Prokudin 1999; Didukh 2009). In the Gorgany Mts., it was recorded in the bogs Yayko (Andrienko 1975), Zamshatka (= Glukha mlaka) near the village of Synevyrska Polyana, Glukhanya near the village of Negrovets and Turova dacha near the village of Pereginske, in the Volcanic Carpathians at Chorne Bagno bog near the village of Ilnytsya (Kovalchuk et al. 2006). On the Svydovets Mts., it grows in Andromeda bog near the village of Chorna Tysa (Kovalchuk et al. 2006), near lake Gereshaska (Domin & Podpěra 1928; Domin 1929; Voloshchuk et al. 2020) and in several places in Dragobrat (Danylyk & Borsukevych 2010), where, according to Kobiv (2011), it reaches the maximum altitude of 1340 m a.s.l. Our finding near lake Velykyy Apshynets at the altitude of 1490 m shifts this previous maximum and confirms also the recently published occurrence at the locality (Voloshchuk et al. 2020).

***Swertia punctata* Baumg.**

Localities: Chornogora Mts., the Brebeneskul stream valley, dozens of flowering individuals at springs among *Pinus mugo*, southeast of Mt. Gutyn Tomnatyk (2016 m), about 1710 m a.s.l., 48.0932983° N, 24.5617092° E, 18.8.2021. – Chornogora Mts., the Brebeneskul stream valley, several flowering individuals at the springs near the Brebeneskul stream, about 1690 m a.s.l., 48.0971569° N, 24.5652014° E, 18.8.2021.

It belongs to critically endangered species, CR category of the Ukrainian Carpathians (Kricsfalusy & Budnikov 2007). It is a Carpathian sub-endemic (Malynovskyy et al. 2002) with an area slightly exceeding the Eastern, Southern and Apuseni Carpathians to Bulgaria and Kosovo (Kliment at al. 2016). Chopyk (1976) considers the species occurrence reports in the Ukrainian Carpathians erroneous and states that its closest occurrence is at Rodna Mts. in the north of Romania. There is also no mention of it in Prokudin (1999). However, Chopyk (1977) and Chopyk & Fedoronchuk (2015) document its presence in the wet meadows and bogs of the subalpine zone of the Svydovets Mts., and Chopyk (1977), Malynovskyy et al. (2002) and Chopyk & Fedoronchuk (2015) in the Chornogora Mts., the Marmarosh Mts. and the Chyvchyn-Grynyavy Mts. However, according to Slobodyan (1981), the occurrence of the species in the Ukrainian Carpathians is limited only to the eastern part of the Chornogora Mts. (with a total of 7 localities in the vicinity of Mt. Pop Ivan Chornogorskyy) and the Marmarosh Mts., which also form the northern border of the entire area. Even Kobiv (2011) mentions its occurrence in the Ukrainian Carpathians only in the Chornogora Mts., where it was found on Mt. Shpytsy (Makhanets 2002), in several springs with the presence of *Pedicularis oederi* on Mt. Brebeneskul massive (Kobiv & Nesteruk 2001) and in the Ramsar site "Ozirnij-Brebeneskul" (Voloshchuk & Mykitchak 2020). Also, revised collections stored in more than 20 herbarium collections come exclusively from the Chornogora Mts. from localities Kizi Ulohy, Pop Ivan Chornogorskyy, lake Brebeneskul, Polonyna Pohorylets and Polonyna Sheshulka (Shiyan 2013). In the Marmarosh massif, Makhanets (2002) specified the occurrence on Polonyna Neneska.

Summary

The study presents the occurrence of 10 threatened, rare, endemic, relict and phytogeographically important species of high-mountain plants found in 2021 during a short-term floristic research in the surroundings of glacial lakes Velykyy Apshynets, Brespo and Brebeneskul in Chornogora and Svydovets mountain ranges in the Ukrainian Carpathians.

The findings of *Carex capillaris* and *Juncus triglumis* represent the first published occurrence in the respective locality, the other findings are a current confirmation of already published data. The importance of collecting new but also updating previous data on the distribution of plant taxa is stressed by the need to create the Plant Red List based on the most recent IUCN criteria, since for the Ukrainian Carpathians only the older criteria were used so far.

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