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On the occurrence of *Orchis pallens* L. in the Ukrainian Carpathians

Keywords

Orchidaceae; *Orchis pallens*; distribution; Carpathians; Ukraine; protection.

Summary

Kovalchuk, A. (2016): On the occurrence of *Orchis pallens* L. in the Ukrainian Carpathians.- J. Eur. Orch. 48 (1): 29-36.

The occurrence of *Orchis pallens* L. in the Ukrainian Carpathians is reported, and the available information about its growth localities is summarized. The species is currently known from two populations in Rakhiv district (Zakarpattia region (Transcarpathia)) located at the distance of approximately 8 km. The reported populations are located at the north-eastern limit of the species distribution.

Zusammenfassung

Kovalchuk, A. (2016): Über das Vorkommen von *Orchis pallens* L. in den Ukrainischen Karpathen.- J. Eur. Orch. 48 (1): 29-36.

Es wird über ein neu entdecktes Vorkommen des Blassen Knabenkrauts (*Orchis pallens* L.) in den Ukrainischen Karpaten berichtet. Die vorhandene Information über dessen Fundorte im Untersuchungsgebiet wird zusammengefasst. Die Art ist aktuell von zwei Populationen aus dem Kreis Rakhiv (Bezirk Transkarpathien), die ungefähr 8 km voneinander entfernt sind, bekannt. Die genannten Vorkommen befinden sich an der nord-östlichen Arealgrenze der Art.

Резюме

Kovalchuk, A. (2016): Про зростання зозулинця блідого (*Orchis pallens* L.) в Українських Карпатах.- J. Eur. Orch. 48 (1): 29-36.

Повідомляється про зростання зозулинця блідого (*Orchis pallens* L.) в Українських Карпатах. Проаналізовано публікації про місцезнаходження

виду на цій території. Він відомий з двох популяцій, відстань між якими становить біля 8 км, на території Рахівського району Закарпатської області. Ці місцезростання знаходяться на північно-східній межі поширення виду.

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1. Introduction

The pale-flowered orchid (*Orchis pallens* L.; subg. *Masculae*, sect. *Provinciales*) is one of the few yellow-flowering species within the genus *Orchis* (BUTTLER 1986: 120-123). This peculiar feature makes it easily recognisable, at least during the flowering time. It differs from the other yellow-flowering members of the sect. *Provinciales* (*O. provincialis*, *O. pauciflora*, and *O. laeta*) by the absence of any markings on its flower lip, whereas the lip of the latter species is red-dotted (BUTTLER 1986: 244). In Central Europe, *O. pallens* is sometimes confused with yellow-flowering form of *Dactylorhiza sambucina*, however, the two species can be readily distinguished by a number of morphological features (KERSCHBAUMSTEINER 1994: 10-11). In *O. pallens*, leaves are arranged in basal rosette, bracts are only as long as ovary, and spur is curved upwards. In *D. sambucina*, leaves are distributed along the stem, at least the lowest bracts exceed the flowers, and spur is curved downwards.

The distribution area of *O. pallens* extends from the northern part of Iberian peninsula across Southern and Central Europe to Crimea, Turkey, Caucasus and Talysh (AVERYANOV 2006: 95; BAUMANN & KÜNKELE 1982: 324; BUTTLER 1986: 120; WORLD CHECKLIST OF SELECTED PLANT FAMILIES 2010). It reaches the northern limit of its distribution in Germany and Poland. The species is also known from Czech Republic, Slovak Republic, Austria, Hungary and Romania, but it is uncommon and occurs sporadically almost everywhere in Central Europe. Due to the decline of its natural populations, *O. pallens* is protected by law in many European countries (AVERYANOV 2008: 401-402; ELIÁŠ et al. 2015; GRULICH 2012; KIRÁLY 2007; LUDWIG & SCHNITTLER, 1996; MOSER et al. 2002; PROTOPOPOVA 2009: 205; ZAJĄC & FIODOR 2014: 783-786).

O. pallens occurs within a broad altitudinal range, from lower montane level to approximately 1700 m asl in Central Europe and to approximately 2400 m asl in Turkey (RENZ & TAUBENHEIM 1984: 530).



Fig. 1: *Orchis pallens*, Ukraine, Zakarpattia region, Rakhiv district, Kuziy, 03.05.2008 (fot. A.Kovalchuk).



Fig. 2: The biotope of *Orchis pallens*, Ukraine, Zakarpattia region, Rakhiv district, Kuzyi, 03.05.2008 (fot. A.Kovalchuk).



Fig. 3-4: *Orchis pallens*, Ukraine, Zakarpattia region, Rakhiv district, Kuzyi, 03.05.2008 (fot. A.Kovalchuk).

In Central Europe, its preferred habitats at lower altitudes are beech forests on calcareous soils. It also occurs in mixed hornbeam-linden or oak-hornbeam forests, or among shrub thickets (BERNACKI et al. 2008: 483-485; PRESSER 2000; SCHNEIDER et al. 2011). *O. pallens* prefers half-shadowed localities, often at woodland edges. It usually avoids deep shadow, and overgrowth of suitable habitats presents one of the threats to the existing populations. At higher altitudes (above 1000 m asl), the species predominantly occurs in open meadows.

According to standard reference works (PROKUDIN 1987: 411; SMOLYANINOVA 1976: 46; SOBKO 1989: 138-139; SOÓ 1980: 341) and checklists (WORLD CHECKLIST OF SELECTED PLANT FAMILIES 2010), the distribution of *O. pallens* in Ukraine is limited to the Crimean peninsula. A population of *O. pallens* in the Ukrainian Carpathians was discovered during the field trip in May 2008. The description of the population and its habitat is provided. The detailed analysis of the literature has revealed that publications mentioning the occurrence of *O. pallens* in Zakarpattia region of Ukraine appeared as early as 1997 (ANTOSIAK et al. 1997: 208-238), but they remained poorly known even to local botanists. The occurrence of *O. pallens* in the Ukrainian Carpathians was neither mentioned in the 3rd edition of the Red Data Book of Ukraine (PROTOPOPOVA 2009: 205) nor in the recent revision of the genus *Orchis* of Russia and adjacent countries (within the borders of the former Soviet Union) (KUROPATKIN & EFIMOV 2014: 590). The present publication is aimed to fill this gap and to summarize available information on the occurrence of *O. pallens* in the Ukrainian Carpathians.

2. Results

A population of pale-flowered orchid (*Orchis pallens*) was discovered during the field trip to Kuziy nature reserve (Ukraine, Zakarpattia region, Rakhiv district; 47°56' N, 24°07' E [or UTM 35T 284/5314], ~ 550 m asl) on May 3, 2008. In total, about 30 flowering plants and several non-flowering leaf rosettes were found. They grew on the southern slope close to the edge of beech (*Fagus sylvatica*)-sycamore maple (*Acer pseudoplatanus*) forest. Other accompanying species included *Aposeris foetida*, *Aegopodium podagraria*, *Anemone nemorosa*, *Lilium martagon*, *Cardamine glanduligera* (= *Dentaria glandulosa*), *Cardamine bulbifera* (= *Dentaria bulbifera*), *Primula elatior*, *Rubus* sp. The soils in the area are predominantly calcareous, due to the abundance of limestone that comes close to the surface and locally emerges as rocky outcrops (GAMOR et al. 2012: 51-52). The area is renowned for its exceptional floristic diversity and for the well-preserved primeval beech forests. In 1990, it was designated as part of the Carpathian biosphere reserve,

and in 2007, it was inscribed into UNESCO World Heritage List together with several other sites of primeval beech forests of Ukraine and Slovak Republic.

The examination of the standard reference works for Ukrainian flora revealed that the occurrence of *O. pallens* in Ukrainian Carpathians was not mentioned in none of those (PROKUDIN 1987: 411; SMOLYANINOVA 1976: 46; SOBKO 1989: 138-139). However, during further investigation, it became evident that this population was known to local botanists, and the information about it appeared in several publications (ANTOSIAK et al. 1997: 208-238; LOYA 2010: 135-136; GAMOR et al. 2012: 45-72). Additionally, *O. pallens* was also found at another site near Dilove village (Zakarpattia region, Rakhiv district) (Shushman 1998: 15), located ~8 km NE from the population in Kuziy.

The described populations are situated at the north-eastern limit of the species distribution in Central Europe. The area around Kuziy is characterized by relatively mild climatic conditions (GAMOR et al. 2012: 51-52), supporting many relict species (e.g., *Scopolia carniolica*, *Lunaria rediviva*, *Taxus baccata* etc.), and that might be an important factor for the existence of populations of *O. pallens*, as well. At the same time, calcareous soils of the Kuziy area provide suitable habitat for this and many other calciphilous orchid species. An existence of only two known populations of *O. pallens* in Ukrainian Carpathians clearly shows that the species is very scarce in the region. The fact that they were discovered only 20 years ago indicate the need for further floristic studies in the Carpathian region.

The population of *O. pallens* in Kuziy is located within the Carpathian biosphere reserve, and it is well protected from habitat disturbance caused by human activities. However, it is known that this species is sensitive to overgrowth, and the monitoring of existing population is recommended to ensure their stability. The second population in the vicinity of Dilove is located outside of protected areas, and it is recommended to check the status of this population and to ensure the protection of this site. The information on both populations of *O. pallens* from Ukrainian Carpathians should be added to the next edition of the national Red Data Book.

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