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CURRENT CONDITION OF *PINGUICULA VULGARIS* L. POPULATIONS OF NATURAL FLORA IN UKRAINE

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CURRENT CONDITION OF *PINGUICULA VULGARIS* L. POPULATIONS OF NATURAL FLORA IN UKRAINE. V. Konishchuk, O. Skakal's'ka. – This paper reports on geographical distribution and current condition of *Pinguicula vulgaris* L. populations. The results of geobotanical, phytocoenotic research of ecological habitat type for this species are presented. The data on the number of individuals in coenopopulations investigated in the area are revealed.

СУЧАСНИЙ СТАН ПОПУЛЯЦІЙ *PINGUICULA VULGARIS* L. ПРИРОДНОЇ ФЛОРИ В УКРАЇНІ. В.В. Коніщук, О.І. Скакальська. – У статті наведено дані про географічний розподіл та сучасний стан популяцій *Pinguicula vulgaris* L. Подано результати геоботанічних досліджень типу екологічного середовища існування даного виду. Виявлено дані про кількість особин у ценопопуляціях, досліджених у цьому районі.

СОВРЕМЕННОЕ СОСТОЯНИЕ ПОПУЛЯЦИЙ *PINGUICULA VULGARIS* L. ПРИРОДНОЙ ФЛОРЫ В УКРАИНЕ. В.В. Конищук, О. И. Скакальская. – В статье приведены данные о географическом распределении и современном состоянии популяций *Pinguicula vulgaris* L. Наданы результаты геоботанических исследований типа экологической среды обитания данного вида. Выявлено данные о количестве особей в ценопопуляциях, исследованных в этом районе.

Introduction

In the past fifty years a big concern is a rapid change in plant life due to anthropogenic activity, especially near populated centers, which leads to the disappearance of indigenous ecosystems and replacing them with new, unbalanced systems of segetal – ruderalis type. Disappearance of these species can have disastrous consequences for the biosphere (Popovych, 2010). Especially threatening these above mentioned problems are for some of the most vulnerable to the effects of drainage and reclamation heterotrophic helophites, particularly species of *Pinguicula* L.

Objects and methods of research

The object of the research are natural populations of *P. vulgaris* L.
The work was based on the materials of fieldwork in 2013–2015, conducted with route-search method of photographing and geobotanical descriptions according to (Hryhora, Iakubenko, 2005) and conventional methods (Golubev, 1982). Nomenclature of the types is presented in correspondence to Vascular plants of Ukraine (Worley, Harder, 1999). In addition to the original research of species chronological analysis, literary data and materials from the herbarium collections of the Institute of Botany named after M.H.Holodnyi, NAS of Ukraine (KW), the Rivne regional museum of the local history (ROKM), National Botanic Garden named after M.M. Hryshko (KWHA), Lviv National University named after I. Franko, Lviv Natural History Museum of NAS of Ukraine (LWS), the Institute of Ecology of the Carpathians (LWE) were critically processed.

Results of the research and their discussion

P. vulgaris hemicryptophite, a rare insectivorous species, is up to 20 cm high, Magnoliophyta division, Magnoliopsida class, Scrophulariales order, Lentibulariaceae family. The extensive habitat of the species is northern Eurasia and North America. It's oblong - elliptical, top is covered with sticky glands, leaves are situated in basal outlet. The floral stem does not have leaves and produces only one flower. The corolla is blue-purple, the nectary is subulate. Its flowers appear in June–August, fruiting takes place in August–September. It is propagated by seeds, which are very small and spread by the wind (Mosyakin, Fedoronchouk, 1999; Andrienko, 2010).

The species is infrequent in Ukraine, known habitats are in the Carpathians and the Carpathian Mountains, in the steppe, Western Podillya (Kremenets, according to herbarium specimens of Klokov, the 1905 collection, during the research we did not confirm the place of its existance, localities are lost due to drainage and reclamation work).

In Russia the plant grows in northern European part, Siberia, in the south of Kamchatka and the Kuril islands. In Central Russia known habitats are in Tver region, the Northern Urals on the wetland banks of the Northern Sosva river, the river Tolya, near the village of Prypolarnyi, the river Manya in Polar Ural district . The species in these areas are very rare, and only individual instances can be found (Gubanov et all., 2004*;* The Red Book …, 2013).

In Belarus, the plant is observed out of the southern border of the habitat. For the first time the given territory of Lake Koldychevske (the territory of modern Baranovychi district in the province of Novogrudka) was mentioned in the work by Eichawald in 1830. A tendency to expanding of the sprouting species geography – Lake Svitiaz (Novohrudka district, Grodno region) was registered in the paper of K. Karpowicz (Флора …, 1930), who indicated that *P. vulgaris* occurs *en masse*, but reclamation activities, held in the 50–60s of the XXth century, almost completely destroyed the size of the population. Analysis of the works written by Wisniewski, M. Fuller (1936), M. Wisniewski (1938), reveals 4 new habitats: near the villages of Hotenya, Voleykovychi, Kreva, Kushlyanyin Smorhonskyi district, Grodno region. In the 70-s of the XX th century *Pinguicula* was found by A. Bibikov around Lake Svir. Currently, the location is lost due to the transformation of the ecotype. In 2013 near the village of Kushlyany on marshy banks of the reclamation river Sikunya the largest population with an area of over 600 m² was found. Currently the species is less common and that was the reason for including of *P. vulgaris* in the regional Red Book and the Red Book of the Republic of Belarus in 1981. It is also protected in Lithuania, Latvia and in many regions of Russia (Skuratovich, Vernitskaya, 2013).

According to the literature analyzed and herbaria data *P. vulgaris* chorological characteristics are as follows:

Volyn region – the town of Shatsk (Melnyk, 1978, LWS), the village of Zhyznykovske (Rakochyn, 1904, LWS), the village of Melnyky, swamp Unychi (Honcharenko, 1998; Sofiyena Rachkevych, 2004, LW), the shore of Lake Krasynets (Honcharenko, 2005, LW).

Transcarpathian region – Rakhiv district – Mount Stig (Vaishchuk, 1955, LWS), Svydovets ridge (Tasyankevych, 1982, LWS), Svydovets ridge, Krachunyeska meadow, bog on the slope (Borsukevych, 2007, LWS), .Svydovets ridge, mountain Drahobrat meadow (Danylyk, 1987, LW), the village of Yasinya, Mount Zhandarmy (Kardash, Hynda, 1986, LW).

Lviv region – Zolochiv district – the outskirts of the village of Zarvanytsya (Kuzyaryn, 1991, LWS, Skakal's'ka and others, 2014, the Institute of Agroecology and Environment NAAS of Ukraine herbarium, Kyiv) (Skakal's'ka, Batochenko, Skoroplyas, 2014, p. 428–430), the village of Mykolayiv, swamp Pecheniya (Kuzyaryn, 1993, LWS), the outskirts of the village Sknyliv (Konlny, 1976, LWS), Peremyshlyany district – the village of Romaniv (Bukhalo, 1959, LW).

The floodplain area of the river Zolochivka, a left tributary of the Western Buh River in the northern outskirts of the village of Zarvanytsya, Zolochiv district, Lviv region, which is 273 meters above the sea level and belongs to the geomorphological area of Voronyaky carbonate eutrophic swamp area of 10.6 hectares was examined. The habitat of *P. vulgaris* was discovered. The population of *P. vulgaris* occupies a small area (about 200 m), contains about 40–50 plants, grows in groups of 4–20 per m². The species is part of Phragmitetum australis

formation, which forms association: Phragmites australis + Juncus subnodolossus. Projective cover of vegetation constitutes 65%. The dominants in the association are *Phragmites australis* Cav. Trin. ex Steud. – 30%, *Juncus subnodolossus* Schrank – 20%.

Rivne region – Zdolbuniv district – the village of Batkivtsi (Andriyenko, Antonova, 1983, ROKM), the village of Ustensk, swamp Podzastavye (Antonova, 1984, ROKM), Ostroh district – Bushcha botanical reserve of national importance (Red Book, 2009, p. 367–370) Radyvyliv district – the village of Plyasheva (Andriyenko, Antonova, 1982, ROKM) Mlyniv district – the village of Horupan-Myatyn (Antonova, 1987, ROKM), the village of Tovpyzhyn (Antonova, 1987, ROKM), the village of Vyinitsa-Bokyima (Antonova, Stepaniuk, 1989, ROKM).

Ternopil region – Kremenets district – the outskirts of Kremenets (Klokov, 1905, KW).
Here are the results of field studies of the populations of *P. vulgaris* in Ukraine.

Brody district – the territory of the source-like tract "Kempa" near the local importance reserve of "Kempa" situated on the outskirts of the village Smilno, occupies the eutrophic swamp area of 10 hectares. The habitat of *P. vulgaris* was discovered here. The population of *P. vulgaris* is not spread in a very big area (200 m) contains about 30–35 individuals, growing in groups of 10–20 m². The species represents part of formations Sphagnetum polytrichum, Molinietum caerulea, Phragmitetum australis, Potentileta erecta, Drosereta rotundifolia, which form the associations of Sphagnum polytrichum + Drosera rotundifolia + Molinia caerulea + Phragmites australis + Potentila erecte. Projective vegetation cover constitutes 100%, moss cover is 90%. Dominants in the associations are *Drosera rotundifolia* L. – 20–30%, *Molinia caerulea* (L.) Mocneh. – 50%, *Phragmites australis* Cav. Trin. ex Steud. – 20–30%, *Potentilla erecte* (L.) Rausch. – 20%, *Carex flava* L. – (10%), *Schoenus ferrugineus* L. – 20%.

The national park "Northern Podillya" territory, the village of Batkiv, sedge-grasses eutrophic marsh, 316 m above the sea level, the area of 7 hectares. 3 habitats of *P. vulgaris* were found. The population of *P. vulgaris* does not occupy a big area (100 m) of small, about 40-50 individuals, grows in groups 2–20 per m². The species is part of the formation of Phragmitetum australis, Cariceta flava, Cariceta nigra, which forms the association: Phragmites australis + Carex flava + Carex nigra. Projective vegetation cover is 62%. The dominants in the association are *Phragmites australis* Cav. Trin. ex Steud. – 30%, *Triglochin palustre* L. – 10%, *Circium palustre* (L.) Scop. – 10%, *Juncus effusus* L. – 20%, *Carex nigra* (L.) Reichard. – 10%. Rivne region. Ostrog district. The area of Bushcha botanical reserve vegetation of national importance. The population is represented by numerous clumps that are mosaic spread within it. The clump area ranges from 2 to 10 m². Uneven several individuals of the species densely grow in each of the clumps. The species is part of the Menyanthetum trifoliata formation constituting an association of Menyanthes trifoliata + Phragmites australis. Grasses are represented by cenoses with domination of *Menyanthes trifoliata* L. (40%), *Phragmites australis* (Cav.) Trin. ex Steud. (15%), *Schoenus ferrugineus* L. (10%), *Carex davalliana* Smith (5%).

Basing on the literature resources and our own research we can conclude that a large number of this species localities have radically transformed as a result of large-scale drainage works, and at present P. *vulgaris* can be regarded as highly endangered.

Conclusions and recommendations for further research.

According to the results of the studies it was found that the examined cenopopulations are small in number, their age spectra are not always complete and presence of domestic animals on the territory of species habitats results in damaged adult individuals within populations which has a negative impact on P. *vulgaris* natural populations. The trend to reduce the area of repopulation of the species has been registered. Therefore, in order to maintain populations of P. *vulgaris* it is necessary to protect their natural adherence localities on protected areas, limit the influence of anthropic factors.

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