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**New localities of rare plant species in Volyn region (Ukraine)**  
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During research expedition in 2013 in Volyn region (within Lutsk, Ivanychi, Horokhiv, Lokachi, Volodymyr-Volynskyi and Turiysk districts) authors found new localities of 9 plant species entered in the Red Data Book of Ukraine and 6 species protected on the regional level. It has been emphasized plant diversity of the southern part of Volyn region is little-studied and needs further investigations.

**Key words:** *rare species, vascular plants, floristic finds, Volyn region.*

**Новые местонахождения редких видов в Волынской области (Украина)**  
**Д.А.Давыдов, В.В.Дацюк, Д.С.Винокуров**

Во время экспедиционных исследований 2013 г. на территории Волынской области (в пределах Луцкого, Иванчиевского, Гороховского, Локачинского, Владимир-Волынского и Турийского районов) авторами обнаружены новые локалитеты девяти видов, включенных в Красную книгу Украины, и шести регионально редких видов. Акцентируется, что флоразнообразие южной части Волынской области является сравнительно малоисследованным, поэтому нуждается в более подробном изучении в дальнейшем.

**Ключевые слова:** *редкие виды, сосудистые растения, флористические находки, Волынская область.*

**Нові місцезнаходження рідкісних видів рослин у Волинській області (Україна)**  
**Д.А.Давидов, В.В.Дацюк, Д.С.Винокуров**

Під час експедиційних досліджень 2013 р. на території Волинської області (у межах Луцького, Іваничівського, Горохівського, Локачинського, Володимир-Волинського та Турійського районів) автори виявили нові місцезнаходження дев'яти видів, включених до Червоної книги України, та шести регіонально рідкісних видів. Акцентується, що фіторізноманітність південної частини Волинської області є порівняно малодослідженою, тому потребує подальшого вивчення.

**Ключові слова:** *рідкісні види, судинні рослини, флористичні знахідки, Волинська область.*

**Introduction**

The inventory of rare plant species locations is the priority task of phytosociology in the current development of plant science. It has especially current importance for insufficiently known regions and with archaic data about plant diversity ones. One of this territory is Volyn region especially its southern part situated in the forest-steppe zone. Prevalent numerous literary data mostly refer to northern part of Volyn region within the forest zone particularly recently created «Cheremskyi» natural reserve and «Shatskyi», «Prypiat-Stokhid» and «Tsumanska pushcha» national nature parks (Goncharenko, Kalinovych, 2009; Andrienko, Priadko, 2012; Konischuk, Cheremskyi, 2012; Onyshchenko, 2012; Priadko, Onyshchenko, 2012). Local information about rare plant diversity of forest-steppe part of Volyn region can be found in papers by A.S.Rogovich (1869), V.B.Montresor (1886–1890), J.K.Paczosky (1888), I.F.Schmalhausen (1895, 1897), M.V.Khymyn with coauthors (Pryrodno-zapovidnyi..., 1999) and I.I.Kuzmishina (2008). That's why the objective of this article is to report about our rare plants finds because part of them hasn't been previously known from some administrative districts of Volyn region.

**Materials and methods**

The field research of the rare plant species was carried out in July 2013 in Volyn region (within Lutsk, Ivanychi, Horokhiv, Lokachi, Volodymyr-Volynskyi and Turiysk districts). Our investigations have been executed by comparative taxonomical, phytosociological and geographical (study of distribution of analyzed species in the research territory, in Ukraine and within their areals) methods. Based on data of Herbarium of M.G.Kholodny Institute of Botany NAS of Ukraine (KW) and different literary sources total list of found rare

species locations has been compiled. Locations confirmed by herbarium specimens in KW were designated by sign «!» in the text of our paper. It has been used such quantity of studied populations parameters as: frequently (more than 50 plants in found population), sporadically (21–50 plants), rare (6–20), very rare (1–5 plants in the population).

### Results and discussion

During research expedition it has been found 9 plant species from the Red Data Book of Ukraine (Chervona..., 2009) and 6 species protected on the regional level within Volyn region (Ofitsiyni..., 2012).

#### Rare species from the Red Data Book of Ukraine:

***Cypripedium calceolus* L.:** Turiysk district, between Peresika and Sushibaba villages, 2 vegetative plants in alder forest (association *Alnetum (glutinosae) franguloso (alni)–urticosum (dioicae)*), very rare, 26.07.2013. Found location are characterized by domination of *Urtica dioica* L. in herb layer with great significance of *Humulus lupulus* L., *Rubus caesius* L., *Aegopodium podagraria* L., *Glechoma hederacea* L. This rare orchid locally distributed in forest and forest-steppe zones of Ukraine in Volyn region is also known from «Cheremskyi» nature reserve in Manevychi district (01.06.2002 Konischuk!), «Prypiat-Stokhid» (Andrienko, Priadko, 2012) and «Shatskyi» (Priadko, Onyshchenko, 2012) national nature parks, Kivertsi, Lyubeshiv and Lyuboml forestries (20.06.1982 Okhrimovich! 1988 Terletskyi!), Verba in Volodymyr-Volynskyi district (Paczosky, 1888), Dachne in Kivertsi district (16.06.1938 Macko), vicinity of Lutsk and «Vorotniv» reserve in Lutsk district (Melnik, Logvinenko, 2013), «Nechimne» reserve in Kovel district (near Skulin village) and «Stokhid-1» reserve (between Stobykhva and Stari Chervyshcha villages) in Kamin-Kashirskyi district (Andrienko et al., 2009). So this species is new for Turiysk district.

***Dactylorhiza incarnata* (L.) Soó:** Horokhiv district, vicinity of Horokhiv town, Skobelka village, fen on Mlynivka river with domination of *Typha latifolia* L. near road Lutsk–Lviv, rare (about 10 generative plants), 23.07.2013; near Kryzhova village, wet meadow at the hornbeam forest, very rare (1 flowering plant), 23.07.2013. In the first locality we have also found *Ranunculus lingua* L., *Acorus calamus* L., *Iris pseudacorus* L., *Scrophularia umbrosa* Dumort., *Rumex hydrolapathum* Huds. etc. One of authors (V.V.Daciuk) has collected on this fen in 2012 *Valeriana simplicifolia* (Rchb.) Kabath – rare mire species proposed to conservation within Volyn region. The second studied locus is the meadow with domination of *Agrostis stolonifera* L. and participation of *Schenodorus pratensis* (Huds.) P. Beauv., *Epilobium parviflorum* Schreb., *Ranunculus repens* L. This species – one of the most distributed meadow orchid in Ukraine – has sporadically distribution in Volyn region, we've seen herbarium specimens from «Cheremskyi» nature reserve in Manevychi district (01.06.2002 and 13.06.2003 Konischuk!), Zatyshshia (10.06.2003 V. Goncharenko!) and Melnyky (12.06.2011 Kuziarin!) within «Shatskyi» natural nature park in Shatsk district, Borove in Lyuboml district, «Prypiat-Stokhid» natural nature park (07.08.2007 Andrienko!), Shtun in this same district (1984 Okhrimovich!), Kivertsi forestry (12.06.1949 Kosets! 19.06.1949 A. Barbarych and O. Barbarych!), vicinity of Kamin-Kashirskyi town (20.05.1880 Montresor!), Zhitani in Volodymyr-Volynskyi district (29.05.1872 Montresor!). This plant has been also found near Kovel and Ustylug towns (Rogovich, 1869), in vicinity of Turiysk (Paczosky, 1888), in «Tsumanska pushcha» national nature park (Onyshchenko, 2012), near Brany in Horokhiv district, near Komarove in Stara Vyzhivka district (Melnik, Baranskyi, 2006) and in a lot of recently created reserves: «Chakhivskyi» – on the border between Shatsk and Lyuboml districts, «Bolitse» (Karasyn village) – in Manevychi district, «Hnyla Lypa» (between Kvasiv village and Marianivka urban type settlement) in Horokhiv district, «Luchnyi» (near Korytnytsia and Kozliv villages), «Okorskyi» (near Okorske lake in Velykyi Okorsk village), «Chornohuzivskyi» (near Lyniv and Bubniv villages), «Vytik richky Turii» (Zaturtsi village) and «Turiyski dzherela» (Movchaniv village) – in Lokachi district, «Kraievdyd» (near Rokyni urban type settlement) and «Chornohuzka» (between Siomaky and Hirka Polonka villages) – in Lutsk district (Pryrodno-zapovidnyi..., 1999; Kuzmishina, 2008; Andrienko et al., 2009).

***Epipactis atrorubens* (Hoffm.) Besser:** Lutsk district, near Harazdzha village, willow forest (from *Salix alba* L.) near lake, frequently (more than 100 plants), 27.07.2013. Studied locus is antropic transformed community of *Salicetum (albae) sparsiherbosum* association with insignificant participation of *Geum urbanum* L., *Galium aparine* L., *Urtica dioica* L., *Glechoma hederacea*, *Dactylis glomerata* L., *Chelidonium majus* L., *Poa pratensis* L., *Plantago major* L. in herb layer. This orchid species has rarefield distribution in forests of different regions of Ukraine. In Volyn region it has been noticed from Kivertsi forestry (17.06.1949 Kosets!), Kortelisy and Siltse villages in Ratne district (18.07.01949 Kosets!), vicinity of Volodymyr-Volynskyi and Kovel towns (Rogovich, 1869; Paczosky, 1888), «Prypiat-Stokhid» (Andrienko,

Priadko, 2012), «Tsumanska pushcha» (Onyshchenko, 2012) and «Shatskyi» (Priadko, Onyshchenko, 2012) national nature parks. So it's new for Lutsk district.

***Epipactis helleborine* (L.) Crantz:** Ivanychi district, near Zastavne village, pine forest at the left bank of Zakhidnyi Buh river, frequently (about 100 plants), 22.07.2013; Horokhiv district, near Kvasiv village, hornbeam forest along the turn to Kryzhova village, very rare (two specimens). There was community of *Pinetum (sylvestris) convallariosum (majalis)* in the first location, we could note here *Pinus sylvestris* L. and *Ulmus laevis* Pall. in the tree layer, *Corylus avellana* L., *Sorbus aucuparia* L., *Cornus sanguinea* L., *Rubus idaeus* L. and *R. nessensis* W. Hall as shrubs and *Convallaria majalis* L., *Geranium robertianum* L., *Dryopteris carthusiana* (Vill.) H.P. Fuchs, *Fragaria vesca* L., *Mycelis muralis* (L.) Dumort., *Brachypodium sylvaticum* (Huds.) P. Beauv., *Moehringia trinervia* (L.) Clairv. in the herb layer. In the second locus studied species has grown in the broadleaved forest dominated by *Carpinus betulus* L. in the tree layer and *Vinca minor* L. in the herb one together with such nemoral plants as *Aegopodium podagraria*, *Asarum europaeum* L., *Pulmonaria obscura* Dumort., *Galium odoratum* (L.) Scop., *Carex sylvatica* Huds., *Oxalis acetosella* L., *Viola reichenbachiana* Jord. ex Boreau, *Sanicula europaea* L. This species is probably one the most distributed orchid in forest, forest-steppe and northern part of steppe zone of Ukraine. In Volyn region it has been previously collected in «Cheremskyi» nature reserve in Manevychi district (14.07.2002 Konischuk!), near Pidgorodne in Lyuboml district (28.06.1949 Kosets!), at lake «Bile» near Nevir village in Lyubeshiv district (15.08.1998 Poberiy! 16.08.1998 Batova!), between Postupel and Vydranitsia villages in Ratne district (12.08.1995 Batova!), near Zviriv in Kivertsi district (1983 Okhrimovich!), in vicinity of Kovel town (13.07.2008 Tymchenko and T. Solomakha!) and Stara Vyzhivka urban-type settlement (16.07.2008 Tymchenko and T. Solomakha!). V.B.Montresor (1890) has also found this species near Verba village in Volodymyr-Volynskyi district, but we couldn't confirm this location. Recently this orchid has been indicated for «Prypiat-Stokhid» (Andrienko, Priadko, 2012), «Tsumanska pushcha» (Onyshchenko, 2012) and «Shatskyi» (Priadko, Onyshchenko, 2012) national nature parks, vicinity of Lutsk town and Rokyni urban type settlement, reserve «Vorotniv» within Lutsk district, vicinity of Berestechko and Horokhiv towns, «Kholoniv» reserve – in Horokhiv district and «Sadyba Lypynskogo» reserve in Lokachi district (Pryrodno-zapovidnyi..., 1999; Kuzmishina, 2008). So this species is new for Ivanychi district.

***Epipactis palustris* (L.) Crantz:** Horokhiv district, near Zvyniache village, fen along railroad, frequently, 23.07.2013; Volodymyr-Volynskyi district, Falemychy village, fen in the floodplain of Luha river, rare, 25.07.2013. The first locality is very interesting fen similar to the one situated in Skobelka, but it has richer plant diversity. Its dominants and characteristic species are *Typha latifolia*, *Schoenoplectus lacustris* (L.) Palla, *Carex lasiocarpa* Ehrh., *C. flava* L., *Eriophorum latifolium* Hoppe, *Cirsium palustre* (L.) Scop., *C. rivulare* (Jacq.) All., *Scutellaria galericulata* L., *Acorus calamus* and cited higher *Valeriana simplicifolia*. At the second fen it has been found *Thelypteris palustris* Schott (dominant), *Menyanthes trifoliata* L., *Parnassia palustris* L., *Salix rosmarinifolia* L., *Comarum palustre* L., *Geranium palustre* L., *Ostericum palustre* (Besser) Besser, *Cirsium rivulare* etc. This plant is locally distributed on Ukrainian mires. It has been previously indicated for «Prypiat-Stokhid» (Andrienko, Priadko, 2012) and «Shatskyi» (Priadko, Onyshchenko, 2012) national nature parks, vicinity of Kovel (Rogovich, 1869; Montresor, 1886) and Volodymyr-Volynskyi (Rogovich, 1869; Paczosky, 1888; Montresor, 1886) towns, Blazhenyk (Montresor, 1886) and Ozeriany (Melnyk, Baranskyi, 2006) villages in Turyisk district, lake «Synove» in Stara Vyzhivka district, «Nechimne» (near Skulin in Kovel district), «Kormyn» (near Berestiane in Kivertsi district), «Chakhivskyi» (on the border between Shatsk and Lyuboml districts), «Luha-Rachynska» (Rachyn in Horokhiv district), «Chornohuzivska» (Lokachi district) and «Chornohuzka» (Lutsk district) reserves (Pryrodno-zapovidnyi..., 1999; Kuzmishina, 2008; Andrienko et al., 2009).

***Lilium martagon* L.:** Lutsk district, vicinity of Harazdzha village, community of *Corylus avellana* on the place of oak forest near lake, sporadically (about 30 vegetative plants), 27.07.2013. In this interesting locus we could find as common nemoral species (*Asarum europaeum*, *Stellaria holostea* L., *Galium odoratum*, *Geum urbanum*) as locally distributional in Volyn region vascular plants – *Actaea europaea* (Schipcz.) Coupton (see below), *Thalictrum aquilegifolium* L., *Clematis recta* L., *Bupleurum falcatum* L., *Brachypodium pinnatum* (L.) P. Beauv. Besides, last three noticed species grew on the edges and surrounding land slopes near a lake too. This species absently grows in forest and forest-steppe zones of Ukraine. From Volyn region we studied only one specimen in herbarium KW collected in the «Cheremskyi» nature reserve in Manevychi district (22.07.2011 Konischuk!), but it has been also found in vicinity of Kovel and Turiysk towns (Rogovich, 1869; Paczosky, 1888), near Svalovychi village in Lyubeshiv district within «Prypiat-Stokhid» national nature park (Andrienko, Priadko, 2012), in «Tsumanska pushcha» (Onyshchenko, 2012) and «Shatskyi» (Priadko,

Onyshchenko, 2012) national nature parks, in reserves «Sadivsky Dubyny» (near Sadiv village) and «Vorotniv» – within Lutsk district, «Hubyn» (near Hubin village) – within Lokachi district, «Sofianivskiy» – within Manevychi district (Pryrodno-zapovidnyi..., 1999; Kuzmishina, 2008; Andrienko et al., 2009).

***Lycopodium annotinum* L.:** Ivanychi district, between Poromiv and Petrove villages, pine forests in the left bank of Zakhidnyi Buh river valley, frequently, 25.07.2013; Turiysk district, between Peresika and Sushibaba villages, pine forests, frequently, 26.07.2013. In the both localities this species is particular dominant on lowerings of microrelief. Herb layer of these forests is formed by boreal species which are typical for Ukrainian forest zone (Polissya): *Lycopodium clavatum* L., *Vaccinium myrtillus* L., *Omalotheca sylvatica* (L.) Sch. Bip., *Thymus serpyllum* L., *Rubus saxatilis* L., *Calluna vulgaris* (L.) Hill, *Veronica officinalis* L., *Festuca ovina* L., *Melampyrum pratense* L. etc. It's interesting to notice our locations hasn't cited in the detailed review of Lycopodiophyta of Volynske Polissya by V.P.Voityuk and coauthors (2009). We studied specimens collected at Zamshany (15.07.1949 A.Barbarych and O.Barbarych!) and Zabolottia (23.07.1949 A.Barbarych and O.Barbarych!) in Ratne district, Gushcha in Lyuboml district (07.07.1949 Kosets!), Sofianivka in Manevychi district (08.07.1949 Kosets!), Buzaky in Kamin-Kashyrskiy district (15.07.1965 Kotov!), Pozhog in Lyubeshiv district (19.08.2007 Yakushenko!). This plant has been also found between Verba village in Volodymyr-Volynskiy district and Blazhenyk village in Turiysk district (Paczosky, 1888), in vicinity of Kamin-Kashirskiy town (Montresor, 1886), in «Cheremskiy» nature reserve in Manevychi district (Konishchuk, Cheremskiy, 2012), in «Tsumanska pushcha» (Onyshchenko, 2012) and «Shatskiy» (Priadko, Onyshchenko, 2012) national nature parks, in reserves «Nechymne» (Kovel district), «Hubyn» (Lokachi district), «Ozero Sviate» (Ratne district), «Stokhid-2» and «Ozero Dobre» (Kamin-Kashirskiy district), «Dzherela» and «Rys» (Manevychi district), «Horynski krutoskhyly» (Kivertsi district; Andrienko et al., 2009). A lot of other locations have been cited in the remembering higher paper: vicinity of Tsuman urban type settlement and Dachne village in Kivertsi district, vicinity of Manevychi urban type settlement, between Serkhiv and Haluzia villages in Manevychi district, Mosyr in Lyuboml district, Svitle and Povorsk in Kovel district, Pidrichchia and Yalovatsk in Kamin-Kashyrskiy district, Zaliznytsia in Lyubeshiv district, Krymne in Stara Vyzhivka district, Siltse in Ratne district and recently created reserves: «Kempa» (Sylne in Kivertsi district), «Zubr» (near Zviriv and Muravyshche in Kivertsi district), «Vutvytskyi» (Nuine in Kamin-Kashirskiy district), «Yalynnyk» (Hremiache in Shatsk district; Voityuk et al., 2009). This species is new for Ivanychi district.

***Neottia nidus-avis* (L.) Rich.:** Horokhiv district, hornbeam forest near the road Horokhiv–Berestechko between Lobachivka and Volytsia-Lobachivska villages, sporadically (about 30 rarefield plants), 24.07.2013; Volodymyr-Volynskiy district, near Verba village, oak-pine forest at the road Volodymyr-Volynskiy–Kovel, very rare (4 flowering plants), 25.07.2013; Turiysk district, Slynarky village, broadleaved forest, frequently, 26.07.2013. In the first location found plant grew in the community of association *Carpinetum (betuli) aegopodiosum (podagrariae)* together with *Asarum europaeum*, *Pulmonaria obscura*, *Lamium galeobdolon* (L.) L., *Lathyrus vernus* (L.) Bernh., *Actaea spicata* L., *Carex sylvatica*, *Luzula pilosa* (L.) Willd., *Dryopteris filix-mas* (L.) Schott. In the second location firstly found by J.K.Paczosky (1888) codominant species are *Vaccinium myrtillus* and *V. vitis-idaea* L., also we have also found here *Convallaria majalis*, *Polygonatum odoratum* (Mill.) Druce, *Potentilla erecta* (L.) Raeusch., *Equisetum sylvaticum* L., *Trientalis europaea* L., *Nardus stricta* L., *Fragaria vesca* etc. The shrub layer of these forests is very interesting, we've seen here *Prunus serotina* Ehrh. (= *Padus serotina* (Ehrh.) Borkh.) – adventive species is probably new for Volyn region but for our data it's now widely distributed in easter territories of Ukrainian Polissya (Kyiv and Chernihiv regions). The third found locus is one of the most numerous in Volyn region (more than 100 specimens), studied plant has been fixed in *Carpinetum (betuli) coryloso (avellanae)–aegopodiosum (podagrariae)* association together with *Lamium galeobdolon*, *Galium odoratum*, *G. intermedium* Schult., *Anemone hepatica* L. (see below), *Pyrola minor* L., *Paris quadrifolia* L., *Geranium robertianum* etc. This species are also known for «Cheremskiy» nature reserve in Manevychi district (Konishchuk, 2012), «Prypiat-Stokhid» (Andrienko, Priadko, 2012), «Tsumanska pushcha» (Onyshchenko, 2012) and «Shatskiy» (Priadko, Onyshchenko, 2012) national nature parks, vicinity of Lutsk (Rogovich, 1869), Ustiluh in Volodymyr-Volynskiy district, Turichany and Turopyn villages in Turiysk district (Paczosky, 1888), «Vorotniv» and «Sadivsky Dubyny» reserves in Lutsk district, «Marianivka» regional landscape park in Horokhiv district (Kuzmishina, 2008) and «Horynski krutoskhyly» reserve in Kivertsi district (Andrienko et al., 2009).

***Utricularia intermedia* Hayne:** Turiysk district, between Peresika and Sushibaba villages, bog near lake (in the water), rare, 26.07.2013, together with such mire plant as *Calla palustris* L. (sporadically), *Lysimachia thyrsoflora* L., *Carex limosa* L. (see below), *Lycopus europaeus* L., *Symphytum officinale* L.,

*Thyselinum palustre* (L.) Rafn., *Ledum palustre* L., *Calamagrostis canescens* (Web.) Roth, *Sphagnum* sp. etc. T.L.Andrienko (2010) cited only 4 localities of this rare aquatic species from Volyn region, but its number is larger: near Lyubeshivska Volia (02.08.2007 Andrienko!), Hrechishchia and Shlapan villages in Lyubeshiv district (Andrienko, Priadko, 2012; these three locations are situated in the floodplain of Stokhid river and belong to «Prypiat-Stokhid» natural nature park), Rudka-Chervynska in Kamin-Kashyrskyi district (03.08.2007 Andrienko!), «Shatskyi» natural nature park (Priadko, Onyshchenko, 2012), «Cheremskyi» nature reserve in Manevychi district (Konischuk, 2012), Verba in Volodymyr-Volynskyi district (Paczosky, 1888) and vicinity of Kovel town (Rogovich, 1869; Schmalhausen, 1897; last both localities are probably extinct). So this species is new for Turiysk district.

**Rare species protected on the regional level within Volyn region:**

***Actaea europaea* (Schipcz.) Compton (= *Cimicifuga europaea* (L.) Schipcz.):** Lutsk district, vicinity of Harazdzha village, community of *Corylus avellana* on the place of oak forest near lake, sporadically, 27.07.2013. Based on the analyses of ITS and trnL-F sequences genus *Cimicifuga* Wernischek probably needs transferring into the genus *Actaea* L. s.l. (Compton et al., 1998). Found population of this species is progressive and consists of about 30 generative and vegetative plants. It distributed in Volyn region only in its southern part and was early famous only from vicinity of Volodymyr-Volynskyi and Lutsk towns (Rogovich, 1869; Paczosky, 1888; Schmalhausen, 1895), Verba in Volodymyr-Volynskyi district (Paczosky, 1888) and Tsuman in Kivertsi district, within «Tsumanska pushcha» national nature park (Vandas, 1886; Onyshchenko, 2012).

***Anemone hepatica* L. (= *Hepatica nobilis* Mill.):** Turiysk district, Svynarka village, hornbeam forest, sporadically, 26.07.2013 (several small groups). Current investigations based on molecular data strongly supports a monophyletic genus *Anemone* L. s.l. with *Hepatica* sister to species in subgenus *Anemonidium* (Spach) Juz. (Hoot et al., 2012), that's why name *Anemone hepatica* must be used against widespread name *Hepatica nobilis*. Rare nemoral species distributed mainly in forest zone of Volyn region (Volynske Polissya) has been indicated for «Cheremskyi» nature reserve in Manevychi district (20.06.2004 Konischuk!), vicinity of Shatsk urban-type settlement (04.07.1949 Kosets!) and Lyuboml town (05.07.1949 A. Barbarych and O. Barbarych!), Pishcha in Shatsk district (03.07.1949 A. Barbarych!), Hubin in Lokachi district (02.08.1964 Kuzmichov!), between Stavyshe and Pidrichchia villages in Kamin-Kashirskyi district (03.08.1998 Batova!), reserve «Nechyshne» near Skulyn village in Kovel district (28.07.1981 Andrienko!). There are several old localities in Volodymyr-Volynskyi district too: near Volodymyr-Volynskyi (Rogovich, 1869; Paczosky, 1888), Ustyluh and Verba (Paczosky, 1888). So this species is new for Turiysk district.

***Antennaria dioica* (L.) Gaertn.:** Ivanychi district, between Poromiv and Petrove villages, pine forest in the left bank of Zakhidnyi Buh river valley, rare, 25.07.2013. Limited occurrence in Volyn region forest plant is new for Ivanychi district but it had been previously found in «Cheremskyi» nature reserve in Manevychi district (17.07.2003 Konischuk!), vicinity of Volodymyr-Volynskyi (Schmalhausen, 1897) and Verba (10.07.1949 A.Barbarych and O.Barbarych!) in Volodymyr-Volynskyi district, Kivertsi forestry (19.06.1949 A.Barbarych and O.Barbarych!), vicinity of Turiysk town (Paczosky, 1888), «Shatskyi» national nature park (Goncharenko, Kalinovych, 2009).

***Carex flacca* Schreb.:** Horokhiv district, near Zvyniache village, on hills to the railroad, rare, 23.07.2013. These hills firstly found by V.V.Daciuk and Ya.P.Didukh in 2012 are covered with steppe vegetation dominated by *Festuca valesiaca* Gaud. and participation of *Sanguisorba minor* Scop., *Asperula cynanchica* L., *Carlina vulgaris* L. s.l. etc. We have studied this plot diligently but couldn't find there *Carlina onopordifolia* Besser ex Szafer et al. indicated for Zvyniache by I.F.Schmalhausen (1897). T.L.Andrienko, V.V.Konischuk and O.I.Priadko (2009) accentuated this species (from «Prypiat-Stokhid» and «Shatskyi» national nature parks) has been firstly found in Volyn region by them but it's an error. It has been previously indicated for vicinity of Volodymyr-Volynskyi, Ustyluh and Kovel towns (Rogovich, 1869; Schmalhausen, 1897) and Zhabka village in Kivertsi district (14.05.1938 Macko). So this sedge is new for Horokhiv district.

***Carex limosa* L.:** Volodymyr-Volynskyi district, near Verba village, bog at the road Volodymyr-Volynskyi–Kovel, rare (several plants), 25.07.2013; Turiysk district, between Peresika and Sushibaba villages, bog near lake, sporadically, 26.07.2013. Our first locality was early found by J.K.Paczosky (1888) as very rare plant on mires between Verba and Blazhenyk (now – Turiysk district) villages. This rare mire sedge sufficiently characteristic for Ukrainian Polissya has been previously found near Ratne (19.07.1949 A.Barbarych and O.Barbarych!), Tur (23.07.1949 A.Barbarych and O.Barbarych!), Hirnyky (18.07.1949 Bachurina!) and Zamshany (15.07.1994!) in Ratne district, Nuino (20.07.1949 Bradis!) and Lychyny (01.08.1949 Bachurina!) in Kamin-Kashirskyi district, vicinity of Kovel (22.07.1940 Bradis!), and Lutsk

(22.06.1964 Kuzmichov and Bradis!), «Cheremskiy» nature reserve in Manevychi district (20.06.2002 Konischuk!). In the last district this species has been recently found near Sofianivka village (Melnyk, Baranskyi, 2006). It has been also noticed for «Shatskyi» national nature park (Goncharenko, Kalinovych, 2009).

***Dryopteris cristata* (L.) A. Gray:** Horokhiv district, pine forest on the border with Radehiv district of Lviv region, between Volytsia Druzhkopilska and Stoyaniv villages, rare, 23.07.2013. This forest was characterizing by codominant of *Convallaria majalis* and *Maianthemum bifolium* (L.) F.W. Schmidt in the herb layer, we have also found here *Dryopteris carthusiana*, *Geranium robertianum* (interesting forma with white corolla), *Glechoma hederacea*, *Chelidonium majus*, *Hypericum maculatum* Crantz etc. Detailed information about localities of *Dryopteris cristata* in Volyn region has been cited in the paper by O.Bezsmertna with coauthors (2012); they are: «Cheremskiy» natural reserve in Manevychi district (01.08.2004 Konischuk!), «Prypiat-Stokhid» and «Shatskyi» (Goncharenko, Kalinovych, 2009) national nature parks, vicinity of Ratne urban-type settlement (19.07.1949 A.Barbarych and O.Barbarych!), between Siltse and Hirnyky villages (19.07.1949 Kosets!) in Ratne district, Berestechko forestry in Horokhiv district (03.07.1983 Okhrimovich!), «Pavlivskiy» reserve (near Pavlivka village) in Ivanychi district, Zhuravychy in Kivertsi district and Haluzia in Manevychi district. Besides A.S.Rogovich (1869) found this fern in vicinity of Kovel town. Our studied location is the eleventh in Volyn region.

### Conclusion

The results of our research show 3 rare species (*Cypripedium calceolus*, *Utricularia intermedia*, *Anemone hepatica*) are new for Turiysk district, 3 (*Epipactis helleborine*, *Lycopodium annotinum*, *Antennaria dioica*) – for Ivanychi district, 1 (*Epipactis atrorubens*) – for Lutsk district and 1 (*Carex flacca*) – for Horokhiv district. Found 22 localities of 15 rare plant species need conservation by creation of new reserves and have to be the base for further autphytosozological investigations in Volyn region.

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