

***COPRINELLUS DEMINUTUS* (PSATHYRELLACEAE, AGARICOMYCETES), A RARE FUNGUS NEWLY RECORDED FROM RUSSIA**

Olga S. SHIRYAEVA^{1*}, Olga G. KALMYKOVA²

¹Institute of Plant and Animal Ecology, Ural Branch of the Russian Academy of Sciences, 8 March Str. 202, 620144 Ekaterinburg, Russia

²Steppe Institute, Ural Branch of the Russian Academy of Sciences, Pionerskaja Str. 11, 460000 Orenburg, Russia

*Corresponding author. E-mail: olga.s.shiryaeva@gmail.com

Abstract

Shiryaeva O.S., Kalmykova O.G., 2020: *Coprinellus deminutus* (Psathyrellaceae, Agaricomycetes), a rare fungus newly recorded from Russia. – Botanica, 26(2): 109–115.

Coprinellus deminutus is a very rare species that is known only from three localities in Europe. This paper presents new records of the species in Russia (two new localities in the protected areas of Orenburg Region, the European part of Russia). It expands this species geographic distribution to the Urals. A description of the species and its habitats is provided.

Keywords: dry grasslands, geographic distribution, Orenburg Region, Orenburg State Nature Reserve, protected area, steppe, xerothermic grasslands.

INTRODUCTION

The genus *Coprinellus* P.Karst. (Psathyrellaceae, Agaricomycetes) comprises coprinoid taxa that have deliquescent or collapsing basidiomata, hymeniform pileipellis, veil consisting of globose elements or chains of fusiform to ellipsoid or globose, thin-walled or partly thick-walled elements, or the veil is lacking (REDHEAD et al., 2001; NAGY et al., 2013). These fungi are common saprotrophs fruiting on soil, wood, herbs, litter and herbivore dung (KNUDSEN & VESTERHOLT, 2018). The genus *Coprinellus* encompasses approximately 80 described species (NAGY et al., 2012). Only 27 species of *Coprinellus* have been reported from Russia, i.e. *C. amphithallus* (M.Lange et A.H. Sm.) Redhead, Vilgalys et Moncalvo, *C. angulatus* (Peck) Redhead, Vilgalys et Moncalvo, *C. bisporus* (J.E. Lange) Vilgalys, Hopple et Jacq. Johnson, *C. callinus* (M.Lange & A.H. Sm.) Vilgalys, Hopple et Jacq. Johnson, *C. congregatus* (Bull.) P.Karst., *C. curtus* (Kalchbr.) Vilgalys, Hopple et

Jacq. Johnson, *C. dilectus* (Fr.) Redhead, Vilgalys et Moncalvo, *C. disseminatus* (Pers.) J.E. Lange, *C. domesticus* (Bolton) Vilgalys, Hopple et Jacq. Johnson, *C. ellisii* (P.D. Orton) Redhead, Vilgalys et Moncalvo, *C. ephemerus* (Bull.) Redhead, Vilgalys et Moncalvo, *C. flocculosus* (DC.) Vilgalys, Hopple et Jacq. Johnson, *C. heptemerus* (M.Lange et A.H. Sm.) Vilgalys, Hopple et Jacq. Johnson, *C. impatiens* (Fr.) J.E. Lange, *C. marculentus* (Britzelm.) Redhead, Vilgalys et Moncalvo, *C. micaceus* (Bull.) Vilgalys, Hopple et Jacq. Johnson, *C. pallidissimus* (Romagn.) P.Roux, Guy García et S.Roux, *C. pelucidus* (P.Karst.) Redhead, Vilgalys et Moncalvo, *C. plagioporus* (Romagn.) Redhead, Vilgalys et Moncalvo, *C. radians* (Desm.) Vilgalys, Hopple et Jacq. Johnson, *C. sassii* (M.Lange et A.H. Sm.) Redhead, Vilgalys et Moncalvo, *C. silvaticus* (Peck) Gminder, *C. subdisseminatus* (M.Lange) Redhead, Vilgalys et Moncalvo, *C. subimpatiens* (M.Lange et A.H. Sm.) Redhead, Vilgalys et Moncalvo, *C. subpurpureus* (A.H. Sm.) Redhead, Vilgalys et Moncalvo.

vo, *C. truncorum* (Scop.) Redhead, Vilgalys et Moncalvo, *C. xanthothrix* (Romagn.) Vilgalys, Hopple et Jacq. Johnson (BEGLYANOVA, 1972; MIKHAYLOVSKIY, 1975; BULAKH, 1977, 2008; IVANOV, 1983; IVANOV & NEZDOJMINOGO, 1990; IVANOV & IVANOVA, 1997; LAZAREVA, 1998; KARATYGIN et al., 1999; PEROVA & GORBUNOVA, 2001; SOPINA, 2001; SVETASHEVA, 2004; KIRILLOVA, 2006; MARINA, 2006; POPOV et al., 2007; DESYATOVA, 2008; MALYSHEVA & MALYSHEVA, 2008; PEREVEDENTSEVA, 2008; SARYCHEVA et al., 2009; KOVALENKO, 2012; PALAMARCHUK, 2012; REBRIEV et al., 2012; KOROPACHINSKIY & BANAEV, 2014; BOLSHAKOV et al., 2018).

During the explorations of the agaricoid fungi in the protected areas of Orenburg Region, a species new to Russia from this genus, namely *Coprinellus deminutus*, was recorded. *Coprinellus deminutus* is a very rare species that is known in Europe only. It has been reported from Germany (locus typicus, ENDERLE, 2004), Hungary (NAGY, 2005) and Ukraine (PRYDIUK, 2014).

This research aimed to present new records of *C. deminutus* in Russia, including two new localities in Orenburg Region, the European part of Russia, and to characterise the species and its habitats.

MATERIALS AND METHODS

Data sampling

The specimens were collected by O.S. Shiryayeva in 2016 and 2018 in two localities in Orenburg Region: “Burtinskaya Steppe” and “Urochische Guylisma” (Fig. 1). O.G. Kalmykova made the descriptions

of plant communities of the studied sites in the same years. Plant communities were named after their dominant species.

Brief description of the species was based on the authors’ observations and measurements. Microscopic features were described from the material mounted in 5% KOH, and 1% Congo red in concentrated NH_4OH . The specimens were examined using Leica DM 2000 light microscope. Measurements were based on observing 20 basidiospores, ten cystidia and basidia per collection. The quotient of length and width of the spores was reported as Q , and the arithmetic mean of the quotients was reported as Q_{av} . The fungus was named after NAGY et al. (2012). The specimens are deposited at the Museum of the Institute of Plant and Animal Ecology (SVER).

Study areas

“Burtinskaya Steppe” is a cluster of the Orenburg State Nature Reserve that is one of the largest steppe reserves in Russia. This cluster is in the central part of Orenburg Region. It covers an area of 4.500 hectares within western foothills of the Southern Urals. Elevations in the area range from about 230 m to 420.9 m above sea level (a.s.l.). The mean annual temperature is $+4.3^\circ\text{C}$. The climate is continental with a cold winter (January -15.8°C) and a dry, warm summer (July $+22^\circ\text{C}$). The annual average precipitation is 300–350 mm (CHIBILEV, 2014). The average height of the snow cover is 19.4 cm (ANONYMOUS, 2004). The hydrographic network is formed by the small rivers Tuzlukkol and Karagashty and the drying streams of Beloglinka, Kyzylsai, Tavolgasay, Dusansai (CHIBILEV, 2014). The area of “Burtinskaya Steppe” lies in the northern subzone of the steppe vegetation zone (SAFRONOVA & KALMYKOVA, 2012). The steppes prevail in the area (Fig. 2). The plant communities from the formations of *Stipeta zalesskii*, *Stipeta lessingiana*, *Helictotricheta desertorum*, *Poeta transbaicalica*, *Festuceta valesiaca*, *Galatellela villosae* are dominant. Meadows and fragments of forests are located along the banks of the streams, in places with the close location of groundwater, and at the foot of the hills. Soil cover in the area is represented by chernozem (KALMYKOVA & SOROKA, 2017).

“Urochische Guylisma” is a protected area located in the western part of Orenburg Region within the East-European Plain. It covers an area of 12 hectares.

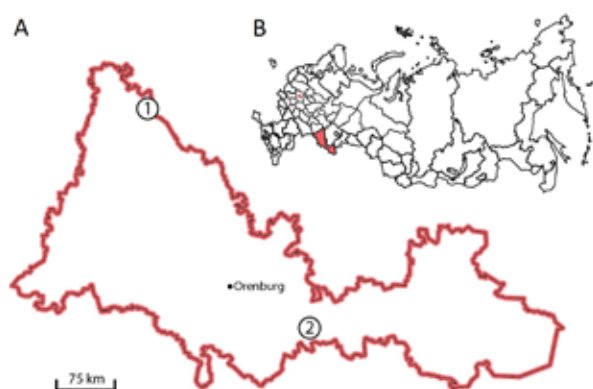


Fig. 1. Geographic location of the studied areas: A – Urochische Guylisma (1) and Burtinskaya Steppe (2) in Orenburg Region, B – Orenburg Region in Russia



Fig. 2. The landscape of the protected area “Burtinskaya Steppe”. Photo by O. S. Shiryaeva

It is a high plateau-like plain, which is divided by the ravine. Elevation at the highest place is 274.3 m a.s.l. The mean annual temperature is + 3.1°C. The coldest month is January with mean temperature -14.8°C, the warmest is July with mean temperature +20.3°C. The annual mean precipitation is 350–400 mm (CHIBILEV et al., 2006). The average height of the snow cover (Abdulino) is 20.4 cm (ANONYMOUS, 2004). There is a sparse Baban-Kasha spring at the bottom of the ravine. The area is situated in the southern subzone of the forest-steppe vegetation zone. The lower and middle parts of the steppe slope are occupied by plant communities of the *Stipeta capillatae* formation with abundant forbs. Shrubs (*Caragana frutex* (L.) K.Koch, *Amygdalus nana* L.) are also found. In the upper part of the slope, phytocenoses of the *Stipeta pulcherrimae* formation are common. At the outcrops, there are petrophyte-steppe plant communities. The formation of *Helictotricheta desertorum* dominates in the plateau-like top. Chernozem forms the soil cover in the area.

RESULTS

Coprinellus deminutus (Enderle) L.Nagy, Házi, Vágvölgyi et Papp, a rare European species previous-

ly unknown in Russia, was recorded in two protected areas of Orenburg Region (“Burtinskaya Steppe” and “Urochische Guylisma”) during the species inventory. Three specimens of *C. deminutus* were found fruiting on the soil in steppes. Below we provide the species description with illustrations based on the studied collections from Russia (Fig. 3) and the characteristics of habitats. The data on specimens examined are also presented and include location (country, region, district, protected area, and geographic coordinates), habitat (name of plant formation), substrate, collection date, acronym and the number of collection.

Species description

Macroscopic features. The specimens had small basidiomata. The pileus was 5–10 mm in diam., ellipsoid, becoming expanding, quickly deliquescent, and translucently striate to sulcate from the margin up to centre. It was whitish to pale grey with the pale brownish, ochraceous or fulvous centre. Pileus had a surface with whitish, cream, pale brownish, ochraceous or fulvous velar patches. Lamellae free, distant, whitish, when young, becoming greyish on ageing. Stipe 53–75 mm long, 0.5–1 mm thick, cylindrical, filiform, glabrescent, white. The smell indistinct.

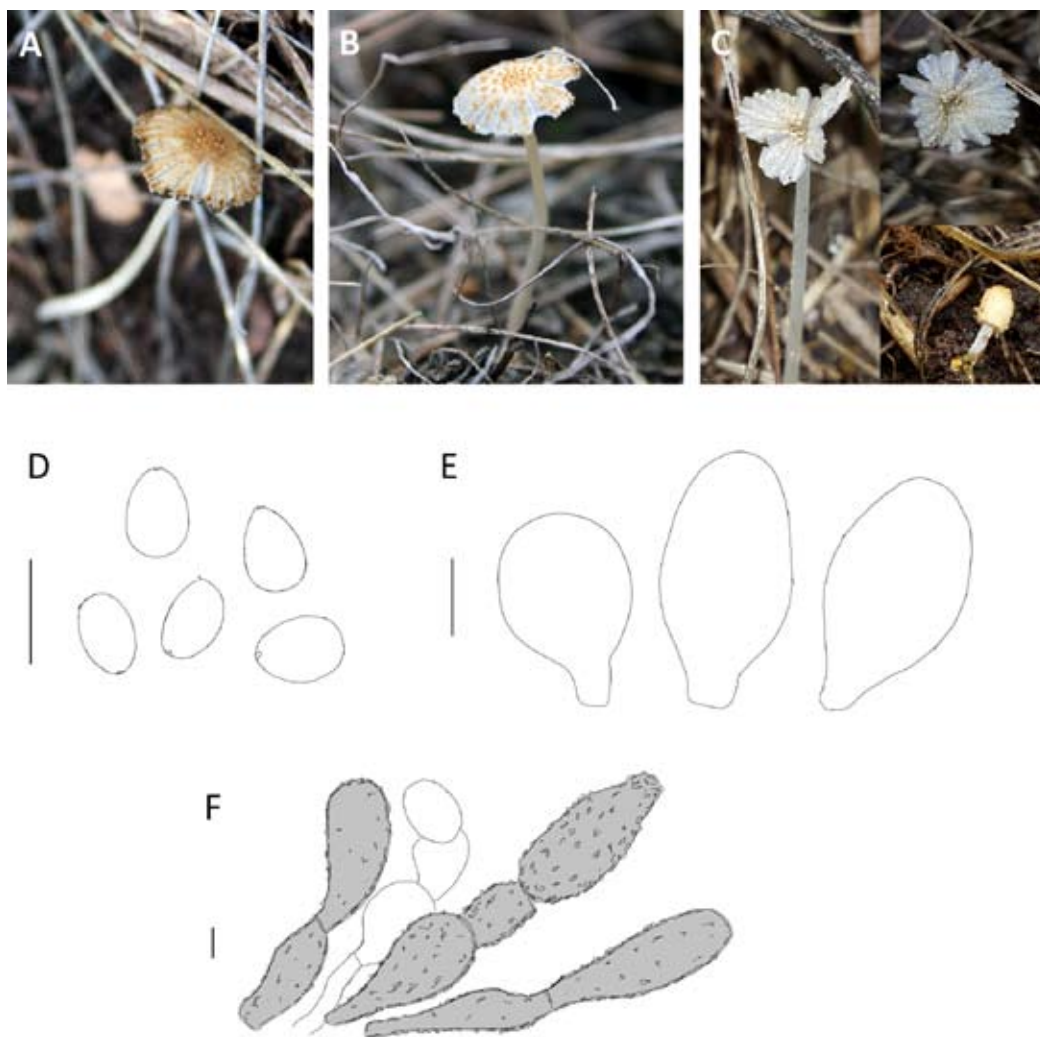


Fig. 3. *Coprinellus deminutus* – macro- and microfeatures. A – fruiting body (SVER 910701), B – fruiting body (SVER 910702), C – fruiting bodies (SVER 910703), D – basidiospores, E – cheilocystidia, F – veil elements. Scale bars = 10 µm

Microscopic features. Basidiospores were 7–10 (10.5) × 5–6 (6.5) µm with $Q = 1.30$ – 1.68 and $Q^* = 1.46$, ellipsoid, not phaseoliform, red-brown, not opaque, with central germ-pore. Basidia were 20–29 × 8–10 µm, clavate, with four sterigmata. Cheilocystidia were 25–40 × 13–25 µm, clavate, ellipsoid. Pleurocystidia were not found. Pileipellis was an epithelioid hymeniderm. Pileo- and caulocystidia were absent. The veil was composed of chains of subglobose, fusoid, cylindrical elements, colourless, pale to bright brown pigmented, partly thick-walled and encrusted. Clamp connections were not found.

Specimens examined. Russia, Orenburg Region, Belyaevka District, Orenburg State Nature Reserve, “Burtinskaya Steppe”, 51°12.636' N, 56°44.337' E,

Stipeta zalesskii, on soil, 4 October 2016 (SVER 910701); ibid., 51°12.252' N, 56°40.644' E, *Stipeta lessingiana*, on soil, 6 October 2016 (SVER 910702); Abdulino District, “Urochische Gylisma” Protected Area, 53°48.584' N, 53°26.383' E, *Stipeta capillata*, on soil, 30 August 2018 (SVER 910703).

Morphological features of the studied specimens fit well to the description of *C. deminutus* presented in previous studies (ENDERLE, 2004; NAGY, 2005; PRYDIUK, 2014). The distinguishing features of *C. deminutus* include small basidiomata, veil consisting of chains of subglobose, fusoid, cylindrical elements, partly thick-walled and encrusted, rather small basidiospores, the absence of pleuro-, pileo-, and caulocystidia and its occurrence on the soil. This

is the smallest species of the subsection *Domestici* Singer. The species similar in size and shape of basidiomata and phylogenetic position in the *Domestici* clade (NAGY et al., 2012) is *C. curtus*. It differs from *C. deminutus* by having larger basidiospores, pileo- and caulocystidia, the veil of sphaerocysts and by its occurrence on dung (ULJÉ, 2001; NAGY, 2005).

Habitats

Coprinellus deminutus was found in protected areas of “Burtinskaya Steppe” and “Urochische Guylisma”, the distance between them was about 360 km. *Coprinellus deminutus* was recorded twice in the “Burtinskaya Steppe”. The distance between these sites was about 4 km.

The first site in the locality “Burtinskaya Steppe” was in the upper levelled part of the hill slope. The site burned out in 1998, 2003, 2005, 2009 and 2014. In 2016, the vegetation was represented by *Stipetum zalesskii stiposo lessingianae-herbosum stepposae* with *Helictotrichon desertorum* (Less.) Nevski and petrophyte species plant community. Plant cover was 78–80%. The xerophytic firm-bunch grass – *Stipa zalesskii* Wilensky was dominant, while *Stipa lessingiana* Trin. et Rupr. was co-dominant in the plant community. The grasses with a considerable abundance were: *Festuca valesiaca* Gaudin, *Koeleria cristata* (L.) Pers., *Helictotrichon desertorum*, *Poa transbaicalica* Roshev. The dominant species of forbs include *Nepeta ucrainica* L., *Galium octonarium* (Klokov) Soó, *Palimbria salsa* (L.fil.) Bess. The steppe petrophytic semishrubs (*Eremogone koriniana* (Fisch. ex Fenzl) Ikonn., *Oxytropis spicata* (Pall.) O.Fedtsch. et B.Fedtsch., *Onosma simplicissima* L.) played a significant role in the vegetation. We should note that by 2019, due to recovery of vegetation after the fire, the phytocoenotic role of *Stipa lessingiana* significantly increased, while *S. zalesskii* moved to the rank of co-dominant.

The second site was on the plane. The site burned out in 1998, 2003 and 2009. In 2016, the vegetation was represented by *Stipetum lessingianae festucoso valesiaca-herbosum stepposae* with *Artemisia marschalliana* Spreng. plant community. Plant cover was 90%. The phytocenosis edificator was *Stipa lessingiana*, co- edificator – *Festuca valesiaca*. The steppe mesoxerophytic forbs (*Scorzonera austriaca* Willd., *Potentilla humifusa* Willd. ex Schldtl.,

Taraxacum serotinum (Waldst. et Kit.) Poir., *Medicago romanica* Prodan) were abundant. *Artemisia marschalliana*, *Astragalus macropus* Bunge were significant among the semishrubs.

At the locality “Urochische Guylisma”, *C. deminutus* was found in *Stipetum capillatae herbosum* meadow steppe plant community with *Caragana frutex*. Plant cover was 95%. The plant community was dominated by the xerophytic firm-bunch grass – *Stipa capillata* L. Forbs were abundant and diverse. *Salvia nutans* L. predominated. *Salvia verticillata* L., *Achillea nobilis* L., *Astragalus onobrychis* L., *Pimpinella saxifraga* L., *Echinops ruthenicus* M.Bieb., *Gypsophila altissima* L., *Verbascum lychnitis* L., *Stachys recta* L., *Medicago romanica*, *Adonis vernalis* L., *Anemone sylvestris* L., *Galium ruthenicum* Willd., *Thalictrum minus* L., *Plantago urvillei* Opiz, *Eremogone longifolia* (M.Bieb.) Fenzl, *Fragaria viridis* (Duchesne) Weston were represented in the plant community.

DISCUSSION

All known localities of *C. deminutus*, including the new ones, are in Europe (ENDERLE, 2004; NAGY, 2005; PRYDIUK, 2014). The new localities are much further east, approximately 1.600 km, from the nearest known site in Ukraine. The easternmost one of new localities is in the Urals, at the border between Europe and Asia. So, new records of *C. deminutus* extend its distributional range eastward to the Urals. It is expected to be more widespread, although not common.

All three studied collections of *C. deminutus* were found in steppes. These xerothermic grasslands are natural habitats formed by zonal climatic and soil factors, namely, high temperatures and large insolation, low precipitation level and limestone substrate. The studied sites are located in the protected areas, where haymaking and pastures are not allowed. Frequent fires affect ecosystems in two of these places. Interestingly, the species has also been mentioned for the xerothermic grasslands previously (NAGY, 2005; PRYDIUK, 2014). In Hungary, the species has been found in the plant community named *Cynodonti-Festucetum pseudovinae*, sub *Carduus acanthoides* L. (NAGY, 2005). The name of the plant community, in which the fungus has been discovered in Ukraine, is

not indicated, but it is reported to be a dry meadow (PRYDIUK, 2014). So, *C. deminutus* seems to be thermophilous, occurring in warm and dry places.

ACKNOWLEDGEMENTS

We are very grateful to Pavel Velmovsky (Orenburg, Russia) for preparing the map, and anonymous reviewers for many valuable remarks on the manuscript.

REFERENCES

- ANONYMOUS 2004: Reliable Prognosis. <https://rp5.ru>. [Accessed 7 December 2019].
- BEGLYANOVA M.I., 1972: Flora agarikovyx gribov južnoj časti Krasnojarskogo kraja. – Krasnojarsk.
- BOLSHAKOV S.YU., VOLOBUEV S.V., POTAPOV K.O., SHIRYAEV A.G., SHIRYAEVA O.S., EZHOV O.N., REBRIEV YU.A., PALAMARCHUK M.A., KHMICH YU.R., BOROVICHEV E.A., ZMITROVICH I.V., 2018: New species for regional mycobiota of Russia. 3. Report 2018. – Mikologija i Fitopatologija, 52(6): 386–397. <https://doi.org/10.1134/S0026364818060028>
- BULAKH E.M., 1977: Makromicety lesov verxnej časti bassejna r. Ussuri. – Mikologija i Fitopatologija, 11(3): 177–181.
- BULAKH E.M., 2008: Species of agaricoid fungi new for Russia and Russian Far East. – Mikologija i Fitopatologija, 42(5): 417–425.
- CHIBILEV A.A., 2014: The “Orenburgsky Reservation”: history of organization and nature diversity. – Ekaterinburg.
- CHIBILEV A.A., DAMRIN A.G., PETRISHCHEV V.P., ZHURAVLEV A.A., 2006: Abdulinskij rajon Orenburgskoj oblasti: Krajevedčeskij atlas. – Orenburg.
- DESYATOVA O.A., 2008: Agarikoidnye bazidiomicety Orenburgskoj oblasti. Dissertacija kandidata biologičeskix nauk. – Moscow.
- ENDERLE M., 2004: Der Kleine Erd-Tintling, *Coprinus deminutus* Enderle. – Zeitschrift für Mykologie, 70(2): 157–159.
- IVANOV A.I., 1983: K flore agarikovyx gribov Penzenskoj oblasti. III – Novosti sistematiki niz ix rastenij, 20: 76–83.
- IVANOV A.I., IVANOVA V.A., 1997: Macromycetes of ruderal habitats on the Penza Region. I. The species composition. – Mikologija i Fitopatologija, 31(4): 10–13.
- IVANOV A.I., NEZDOJMINOGO E.L., 1990: K flore agarikovyx gribov Penzenskoj oblasti. VIII. – Novosti sistematiki niz ix rastenij, 27: 63–66.
- KALMYKOVA O.G., SOROKA O.V. (eds), 2017: The experience of monitoring steppe ecosystems affected by a grassland fire: approaches and methods. – Orenburg.
- KARATYGIN I.V., NEZDOJMINOGO E.L., NOVOZHILOV YU.K., ZHURBENKO M.P., 1999: Russian Arctic Fungi. Check-list. – Saint Petersburg.
- KIRILLOVA O.S., 2006: Agaricoid fungi of the National Park “Russky Sever” (Vologda Region). I. – Mikologija i Fitopatologija, 40(5): 377–386.
- KNUDSEN H., VESTERHOLT J. (eds), 2018: Funga Nordica: Agaricoid, boletoid, clavarioid, cyphelloid and gastroid genera. – Copenhagen.
- KOROPACHINSKIY I.YU., BANAEV E.V. (eds), 2014: Plant diversity of Central Siberian Botanical Garden, SB RAS. – Novosibirsk.
- KOVALENKO A.E. (ed.), 2012: Micobiota of the Belorus-Valday Lakeland. – Moscow, Saint Petersburg.
- LAZAREVA O.L., 1998: Cap fungi of Yaroslavl Region. – Mikologija i Fitopatologija, 32(6): 24–31.
- MALYSHEVA V.F., MALYSHEVA E.F., 2008: The higher basidiomycetes in forest and grassland communities of Zhiguli. – Moscow, Saint Petersburg.
- MARINA L.V., 2006: Agaricoid basidiomycetes of the Visim Nature Reserve (Middle Urals). – Saint Petersburg.
- MIKHAYLOVSKIY L.V., 1975: Novye dlja mikoflory SSSR vidy agarikovyx gribov iz Xibinskogo gornogo massiva. – Novosti sistematiki niz ix rastenij, 12: 205–212.
- NAGY L., 2005: Additions to the Hungarian mycobiota 2. *Coprinus* and *Tricholoma*. – Österreichische Zeitschrift für Pilzkunde, 14: 291–301.
- NAGY L.G., HÁZI J., VÁGVÖLGYI C., PAPP T., 2012: Phylogeny and species delimitation in the genus *Coprinellus* with special emphasis on the haired species. – Mycologia, 104: 254–275. <https://doi.org/10.3852/11-149>
- NAGY L.G., VÁGVÖLGYI C., PAPP T., 2013: Morphological characterization of clades of the Psathyrellaceae (Agaricales) inferred from a multigene

- phylogeny. – Mycological Progress, 12(3): 505–517. <https://doi.org/10.1007/s11557-012-0857-3>
- PALAMARCHUK M.A., 2012: Agaricoid basidiomycetes of the Pechoro-Ilych Reserve (North Urals). – Syktyvkar.
- PEREVEDENTSEVA L.G., 2008: Konspekt agarikoidnyx basidiomicetov Permskogo Kraja. – Perm.
- PEROVA N.V., GORBUNOVA I.A., 2001: Makromicety juga Zapadnoj Sibiri. – Novosibirsk.
- POPOV E.S., MOROZOVA O.V., KOTKOVA V.M., NOVOZHILOV YU.K., ZHURBENKO M.P., ZMITROVICH I.V., KOVALENKO A.E., 2007: Preliminary list of Fungi and Myxomycetes of Leningrad region compiled for scientific excursion in frame of the XV CEM. – Saint Petersburg.
- PRYDIUK M.P., 2014: New and rare for Ukraine species of the family Coprinaceae. 4. Genus *Coprinus* (section *Veliformes*). – Ukrainian Botanical Journal, 71(4): 496–501. <https://doi.org/10.15407/ukrbotj71.04.496>
- REBRIEV YU.A., RUSANOV V.A., BULGAKOV T.S., SVETASHEVA T.YU., ZMITROVICH I.V., POPOV E.S., 2012: Mycobiota of the arid territories of the south-west of Russia. – Rostov-on-Don.
- REDHEAD S.A., VILGALYS R., MONCALVO J.M., JOHNSON J., HOPPLE J.S., 2001: *Coprinus* Persoon and the disposition of *Coprinus* species *sensu lato*. – Taxon, 50: 203–241. <https://doi.org/10.2307/1224525>
- SAFRONOVA I.N., KALMYKOVA O.G., 2012: Problems of zonality and a role of the Nature Reserves in their solving. – Izvestia of Samara Scientific Center of the Russian Academy of Sciences, 1(6): 1638–1641.
- SARYCHEVA L.A., SVETASHEVA T.YU., BULGAKOV T.S., POPOV E.S., MALYSHEVA V.F., 2009: Mycobiota of Lipetsk Region. – Voronezh.
- SOPINA A.A., 2001: Agarikojdnye bazidiomicety gornyx lesov bassejna r. Beloj (SeveroZapadnyj Kavkaz). Dissertacija kandidata biologičeskix nauk. – Saint Petersburg.
- SVETASHEVA T.Yu., 2004: Agarikoidnye bazidiomicety Tulskoj oblasti. Dissertacija kandidata biologičeskix nauk. – Moscow.
- ULJÉ K., 2001: Kees Uljé Coprinus site. <https://grzyby.pl/coprinus-site-Kees-Uljee/cindex.htm> [Accessed 20 December 2019].

***COPRINELLUS DEMINUTUS* (PSATHYRELLACEAE, AGARICOMYCETES), RETAS NAUJAI APRAŠYTAS GRYBAS RUSIJOJE**

Olga S. SHIRYAEVA, Olga G. KALMYKOVA

Santrauka

Coprinellus deminutus yra labai reta grybų rūšis, yra žinomos vos trys jos radavietės Europoje. Straipsnyje pateikiami duomenys apie dvi naujas rūšies radavietes saugomose Orenburgo regiono teritorijose,

europinėje Rusijos dalyje. Nauji duomenys rodo, kad *C. deminutus* paplitusi iki pat Uralo. Straipsnyje pateiktas detalus rūšies bei jos augaviečių aprašymas.