
БИОРАЗНООБРАЗИЕ, СИСТЕМАТИКА, ЭКОЛОГИЯ

УДК 582.28 : 581.95 (470 + 571)

NEW SPECIES FOR REGIONAL MYCOBIOTAS OF RUSSIA. 9. REPORT 2024

© 2024. S. V. Volobuev^{1,*}, T. Yu. Svetasheva^{2,**}, E. S. Popov^{1,***}, I. S. Sarkina^{3,****},
L. G. Perevedentseva^{4,*****}, V. A. Vlasenko^{5,6,*****}, L. B. Kalinina^{1,*****}, V. I. Kapitonov^{7,*****},
Yu. A. Rebriev^{8,*****}, E. A. Krapivina^{9,*****}, N. V. Filippova^{10,*****},
Yu. R. Khimich^{11,*****}, A. S. Shishigin^{12,*****}, I. V. Zmitrovich^{1,*****},
V. S. Botalov^{4,*****}, I. V. Enushchenko^{13,*****},
O. N. Ezhov^{14,*****}, A. V. Vlasenko^{5,*****},
and S. Yu. Bolshakov^{1,*****}

¹ Komarov Botanical Institute of the Russian Academy of Sciences, 197022 St. Petersburg, Russia

² Tula State Lev Tolstoy Pedagogical University, 300026 Tula, Russia

³ Nikita Botanical Gardens — National Scientific Center of the Russian Academy of Sciences, 298648 Yalta, Russia

⁴ Perm State University, 614990 Perm, Russia

⁵ Central Siberian Botanical Garden of the Siberian Branch of the Russian Academy of Sciences, 630090 Novosibirsk, Russia

⁶ Center for Biosphere Research of the Republic of Tuva, 667003 Kyzyl, Russia

⁷ Tobolsk Complex Scientific Station of the Ural Branch of the Russian Academy of Sciences, 626152 Tobolsk, Russia

⁸ Southern Scientific Centre of the Russian Academy of Sciences, 344006 Rostov-on-Don, Russia

⁹ Kabardino-Balkarian State University named after Kh. M. Berbekov, 360004 Nalchik, Russia

¹⁰ Yugra State University, 628012 Khanty-Mansiysk, Russia

¹¹ Institute of North Industrial Ecology Problems — subdivision of the Federal Research Centre

“Kola Science Centre of the Russian Academy of Sciences”, 184209 Apatity, Russia

¹² Perm State Humanitarian and Pedagogical University, 614000 Perm, Russia

¹³ All-Russian Plant Quarantine Center, Irkutsk 664023, Russia

¹⁴ N. Laverov Federal Center for Integrated Arctic Research of the Ural Branch of the RAS, 163000 Arkhangelsk, Russia

*e-mail: sergvolobuev@binran.ru

**e-mail: foxtail_svet@mail.ru

***e-mail: epopov@binran.ru

****e-mail: maslov_ivan@mail.ru

*****e-mail: perevperm@mail.ru

*****e-mail: vlasenkomyces@mail.ru

*****e-mail: lkalinina@binran.ru

*****e-mail: kvi@udsu.ru

*****e-mail: rebriev@yandex.ru

*****e-mail: e.a.krapivina@mail.ru

*****e-mail: filippova.courlee.nina@gmail.com

*****e-mail: ukhim@inbox.ru

*****e-mail: shishigin1992@mail.ru

*****e-mail: iv_zmitrovich@mail.ru

*****e-mail: vitalywc@yandex.ru

*****e-mail: deschampsia@yandex.ru

*****e-mail: olegezhik@gmail.com

*****e-mail: anastasiyamix81@mail.ru

*****e-mail: sbolshakov@binran.ru

Received 23 May, 2024; revised 29 June, 2024; accepted 4 July, 2024

A total of 81 fungal species including ten ascomycete and 71 basidiomycete species have been recorded for the first time from 19 administrative regions of Russia: Kabardino-Balkarian Republic (6), Republic of Crimea (6), Republic of Tyva (2), Perm Krai (8), Primorsky Krai (2), Arkhangelsk Oblast (2), Bryansk Oblast (1), Irkutsk Oblast (3), Murmansk Oblast (6), Novosibirsk Oblast (1), Oryol Oblast (1), Pskov Oblast (2), Tula Oblast (27), Tyumen Oblast (5), Ulyanovsk Oblast (1), Yaroslavl Oblast (1), Saint Petersburg Federal City (1), Sevastopol Federal City (3), and Khanty-Mansi Autonomous Okrug (4 species). An annotated species list containing the data on locality, substrate, habitat type, date of collection, and voucher numbers is provided. *Berkleasmium conglobatum*, *Biporispora europaea*, *Heydenia arietina*, *Lopadostoma pouzarii*, *Navicella pileata*, *Trizodia acrobata* (Ascomycota), and *Callistosporium pseudofelleum*, *Coltricia confluens*, *Melanoleuca monticola* (Basidiomycota) are reported as the first records in Russia. *Clitopilus geminus*, *Crepidotus stenocystis*, *Flammulina populicola*, *Mycena luteovariegata*, and *Pholiotina longistipitata* are recorded in Russia for the second time. Among them, *Clitopilus geminus* is a new species to European Russia, and *Crepidotus stenocystis* is a new one to the Asian part of Russia. *Amanita mairei*, *Cortinarius integerrimus*, *Flammulina elastica*, and *Infundibulicybe gigas* are reported for the third time. New data on rare and little-collected species *Purpureodiscus subisabellinus* and *Hydnellum gracilipes* is presented. Complete sequences of ITS1–5.8S–ITS2 nuclear ribosomal DNA for nine species reported have been generated and submitted to the GenBank database.

Keywords: Ascomycota, Basidiomycota, biodiversity, DNA barcodes, fungal biogeography, new findings

DOI: 10.31857/S0026364824060054, **EDN:** ungyhv

INTRODUCTION

The present report is the ninth in the series of articles devoted to the new regional records of fungi (Bolshakov et al., 2016, 2018, 2020; Svetasheva et al., 2017; Volobuev et al., 2019, 2021a, 2022, 2023).

An annotation record includes the data on species location, substrate, habitat, and herbarium documentation. Voucher specimens are deposited in LE (St. Petersburg), AR (Arkhangelsk), INEP (Apatity), NSK (Novosibirsk), and TUL F (Tula) herbaria. Duplicates of all specimens are stored in LE.

MATERIALS AND METHODS

Material was collected and identified using light microscopy technique by the authors abbreviated as follows: Sergey V. Volobuev (SV), Tatyana Yu. Svetasheva (TS), Eugene S. Popov (EP), Irina S. Sarkina (IS), Lidiya G. Perevedentseva (LP), Vladimir I. Kapitonov (VK), Yury A. Rebriev (YuR), Elena A. Krapivina (EK), Nina F. Filippova (NF), Yuliya R. Khimich (YuKh), Aleksandr S. Shishigin (ASh), and other persons indicated in the text.

To shorten the names of administrative regions of Russia we have used the international standard codes ISO 3166-2: RU (ISO, 2010). Republic of Crimea was abbreviated as KM.

Data on the fungal species distribution in Russia is based on the updated database on *Agaricomycetes* diversity (Bolshakov et al., 2021, 2022) as well as other papers partly referenced in previous reports (Bolshakov et al., 2016; Svetasheva et al., 2017). Species registered for more than 40 regions are noted as widespread species.

Molecular identity of some studied specimens has been confirmed by ITS1–5.8S–ITS nrDNA sequence analysis. DNA extraction, PCR amplification and sequencing were

performed followed Volobuev et al. (2021b). Newly generated sequences were submitted to the GenBank database.

RESULTS

ASCOMYCOTA

DOTHIDEOMYCETES

Catinellales

Catinella olivacea (Batsch) Boud. – new to Tula Oblast.

Distribution in Russia: BRY, DA, IVA, KIR, KLU, KYA, LEN, MO, MOS, NGR, NVS, PRI, PSK, SPE, STA, TA, VLA.

Specimens examined: Tula Oblast, Leninsky District, ca. 200 m to the east from Lobynskoye village, 54.07388° N, 37.72259° E, on large fallen trunk of a dead branch in ravine with willows, 01.05.2021, coll. TS, det. EP (TUL F 1871, dupl. LE F-350414).

Pleosporales

Berkleasmium conglobatum (Cooke et Ellis) R.T. Moore – new to Russia.

Specimen examined: Pskov Oblast, Bezhanitsky District, Polistovsky State Nature Reserve, forest block 14/9, 57.15992° N, 30.48688° E, on wood of a dead branch in crown of *Populus tremula*, 23.09.2019, coll. et det. EP (LE F-295153);

Navicella pileata (Tode) Fabre – new to Russia.

Specimen examined: Pskov Oblast, Lokniansky District, 600 m north-eastward from Ivantsevo village, 56.65135° N, 29.91691° E, on bark of a living *Quercus robur* tree in aspen-birch-oak forest, 05.06.2024, coll. et det. EP (LE F-333496).

LEOTIOMYCETES

Helotiales

Heyderia cucullata (Batsch) Bacyk et Van Vooren – new to Tula Oblast.

Distribution in Russia: KC, KR, KYA, LEN, MOS, MOW, MUR, NGR, PER, PSK, SAK, SMO, SPE, TVE, VLA, VLG.

Specimen examined: Tula Oblast, Leninsky District, Shcheglovskaya zaseka forest area, ca. 1.5 km to the north-east from Olenino village, 54.23694° N, 37.84844° E, on coniferous litter in old-growth spruce plantations, 04.10.2021, coll. TS, det. EP (LE F-324172).

Rhytismatales

Cudonia confusa Bres. – new to Tula Oblast.

Distribution in Russia: AL, KC, KLU, KR, KYA, LEN, MOS, MUR, NGR, PSK, TVE.

Specimens examined: Tula Oblast, Aleksinsky District, Tulske zaseki forest area, ca. 2 km to the north-west from Plastovo village, 54.3083° N, 37.03934° E, on coniferous litter in old-growth spruce plantations with birch, 29.07.2020, coll. TS, det. EP (TUL F 1865, dupl. LE F-350412).

Incertae sedis

Trizodia acrobata Laukka — new to Russia.

Specimen examined: Yaroslavl Oblast, Rybinsky District, Pogorelka village, 58.03502° N, 39.17857° E, on living *Sphagnum* sp. in a bog, 20.07.2022, coll. and det. Botyakov V.N., teste EP (LE F-333426).

PEZIZOMYCETES

Pezizales

Heydenia arietina (E. Fisch.) Leuchtm. et Cléménçon — new to Russia.

Specimen examined: Ulyanovsk Oblast, Radishchevsky District, Sengiley Mountains National Park, on sandstone, 03.06.2022, coll. Trofimov Yu., det. EP (LE F-324298).

Purpureodiscus subisabellinus (Le Gal) Van Vooren — new to Tula Oblast.

Distribution in Russia: KYA, NGR, TA.

Specimens examined: Tula Oblast, Shchekinsky District, vicinity of Orlovo village, Krapivensky Zakaznik, Losyevoye bog, 53.9727° N, 37.1245° E, on rotten wood in broad-leaved forest on the mire edge, 13.06.2021, coll. TS, det. EP (TUL F 1868, dupl. LE F-350413).

SORDARIOMYCETES

Xylariales

Biporispora europaea J.D. Rogers, Y.M. Ju et Cand. (Fig. 1, c–e) — new to Russia.

Specimen examined: Bryansk Oblast, Suzemsky District, “Bryansky Les” State Nature Reserve, the environs of the Staroye Yamnoye ranger station, 52.46676° N, 33.85547° E, on wood of fallen trunk of *Ulmus* sp. in broad-leaved forest, 07.08.2015, coll. EP, det. Mombert A. (LE F-324226).

Lopadostoma pouzarii Granmo et L.E. Petrini (Fig. 1, a, b) — new to Russia.

Specimen examined: Tula Oblast, Shchekinsky District, the Yasnaya Polyana estate, Istochnik forest, 54.06778° N, 37.51458° E, on wood of a fallen trunk of *Ulmus* sp. in broad-leaved forest, 14.07.2024, coll. and det. EP (LE F-333550).

BASIDIOMYCOTA

AGARICOMYCETES

Agaricales

Agaricus praerimosus Peck — new to Perm Krai.

Distribution in Russia: BEL, DON, IRK, KHR, KM, KYA, LUG, ORE, SAR, TOM, VGG.

Specimen examined: Perm Krai, Perm, Dzerzhinsky City District, Botanical Garden of the Perm State University, 58.0062° N, 56.1850° E, on soil in the open area, 20.05.2023, coll. LP, det. LP and ASH (LE F-348567).

A. xanthodermus Genev. — new to Perm Krai.

Distribution in Russia: AD, AL, ALT, AST, BEL, BRY, CE, CHE, KC, KDA, KGD, KHM, KHR, KK, KLU, KM, KR, KYA, LEN, LIP, ME, MO, MOS, NVS, ORE, ORL, PNZ, PRI, ROS, SE, SEV, TOM, TUL, TVE, TY, UD, ULY, VGG, VOR.

Specimen examined: Perm Krai, Perm, Sverdlovsky City District, 58.0094° N, 56.2507° E, on soil in lawn, 13.09.2023, coll. LP, det. LP and ASH (LE F-348568).

Amanita excelsa (Fr.) Bertill. — new to Tula Oblast.

Distribution in Russia: AD, BEL, KDA, KGD, KHR, KM, KYA, LEN, MOS, PRI, SAK, SPE, TOM, TVE, UD, YEV.

Specimens examined: Tula Oblast, Suворovsky District, vicinity of Varushitsy village, 54.2065° N, 36.30897° E, on soil in pine forest with spruce and deciduous trees, 05.10.2021, coll. and det. TS (LE F-350392, dupl. TUL F 1848).

A. gemmata (Fr.) Bertill. — new to Perm Krai.

Distribution in Russia: AD, AMU, BEL, KC, KDA, KHA, KLU, KM, KR, KRS, LEN, MO, MOS, ROS, RYA, SEV, SPE, TOM, ULY, VLG.

Specimen examined: Perm Krai, Perm, Chernyayevsky les protected area, 57.987° N, 56.142° E, on sandy soil in pine forest, 02.08.2021, coll. LP, det. LP and Botalov V.S. (LE F-348563).

Amanita mairei Foley — new to the Republic of Crimea.

Distribution in Russia: LEN, PNZ.

Specimen examined: Republic of Crimea, Bakhchisaraysky District, Ai-Petrinskaya yayla Nature Zakaznik, northern slope of Mount Bedene-Kyr, 44.48389° N, 34.02972° E, on soil in meadow steppe on the edge of pine-beech forest, 30.06.2022, coll. and det. IS (LE F-348575).

A. regalis (Fr.) Michael — new to Tula Oblast.

Distribution in Russia: AL, ALT, BEL, BU, CHU, IRK, IVA, KHA, KHM, KO, KYA, MAG, MOS, MOW, MUR, NGR, NVS, PER, PRI, SVE, TOM, UD, VLG, YAN.

Specimens examined: Tula Oblast, Suворovsky District, vicinity of Varushitsy village, 54.20405° N, 36.30977° E, on soil near the ditch in old-growth pine plantations with birch, 05.10.2021, coll. and det. TS (TUL F 1849, dupl. LE F-350393).

A. umbrinolutea (Secr. ex Gillet) Bataille — new to Tula Oblast.

Distribution in Russia: IRK, KHM, KYA, LEN, MUR, PER, PRI, UD.

Specimens examined: Tula Oblast, Yasnogorsky District, vicinity of Ivankovo village, “Ivankovskiy sosnovyy bor na reke Vosma” protected area, 54.76644° N, 37.93062° E, on soil in pine-deciduous forest, 02.10.2019, coll. and det. TS (TUL F 1866, dupl. LE F-350401).

Atractosporocybe inornata (Sowerby) P. Alvarado, G. Moreno et Vizzini — new to the Khanty-Mansi Autonomous Okrug.

Distribution in Russia: AL, BEL, IRK, KK, KM, KYA, LEN, LIP, MOS, MUR, NVS, PER, PRI, PSK, RYA, SAK, SAM, SEV, TOM, VOR, YAN.

Specimens examined: Khanty-Mansi Autonomous Okrug, Khanty-Mansiysky District, nearby Shapsha village, 61.07908° N, 69.45226° E, on soil in mixed coniferous forest, 02.09.2015, coll. and det. NF (YSU-F-06462, dupl. LE F-348597). GenBank accession number — PQ302324 (ITS nrDNA).

Bovista limosa Rostr. — new to Irkutsk Oblast and Murmansk Oblast.

Distribution in Russia: CHU, KAM, KHM, MAG, NVS, SVE, YAN.

Specimens examined: Irkutsk Oblast, Angarsky District, Angarsk city, right bank of the Malaya Yelovka River, 52.4911° N, 103.8158° E, on sandy soil among mosses in edge of pine forest, 12.08.2023, coll. Enushchenko I.V., det. YuR (LE F-350976). Murmansk Oblast, Apatity, 17 km to the west from Apatity, shore of Lake Bolshaya Imandra, 67.5982° N, 33.0102° E, on gravelly soil in wasteland, 21.08.2023, coll. and det. YuR (LE F-350971).

B. tomentosa (Vittad.) De Toni — new to Irkutsk Oblast.

Distribution in Russia: AL, ARK, AST, BEL, KGD, KL, LEN, MAG, NVS, SVE, VGG, YAN, ZAB.

Specimen examined: Irkutsk Oblast, Angarsky District, Angarsk city, right bank of the Malaya Yelovka River, 52.4928° N, 103.8194° E, on soil in edge of pine forest, 12.08.2023, coll. Enushchenko I.V., det. YuR (LE F-350977).

Callistosporium pseudofelleum Vizzini, Matheny, Consiglio et M. Marchetti (Fig. 2, c) — new to Russia.

Specimen examined: Primorsky Krai, Shkotovsky district, vicinity of Anisimovka village, 43.13374° N, 132.80572° E, on rotten wood of deciduous tree in forest with *Tilia* sp., *Quercus mongolica*, *Juglans mandshurica* and *Fraxinus* sp., 05.08.2023, coll. and det. Kalinina L.B. (LE F-332287). GenBank accession number — PQ288866 (ITS nrDNA).

Chlorophyllum olivieri (Barla) Vellinga — new to Tula Oblast.

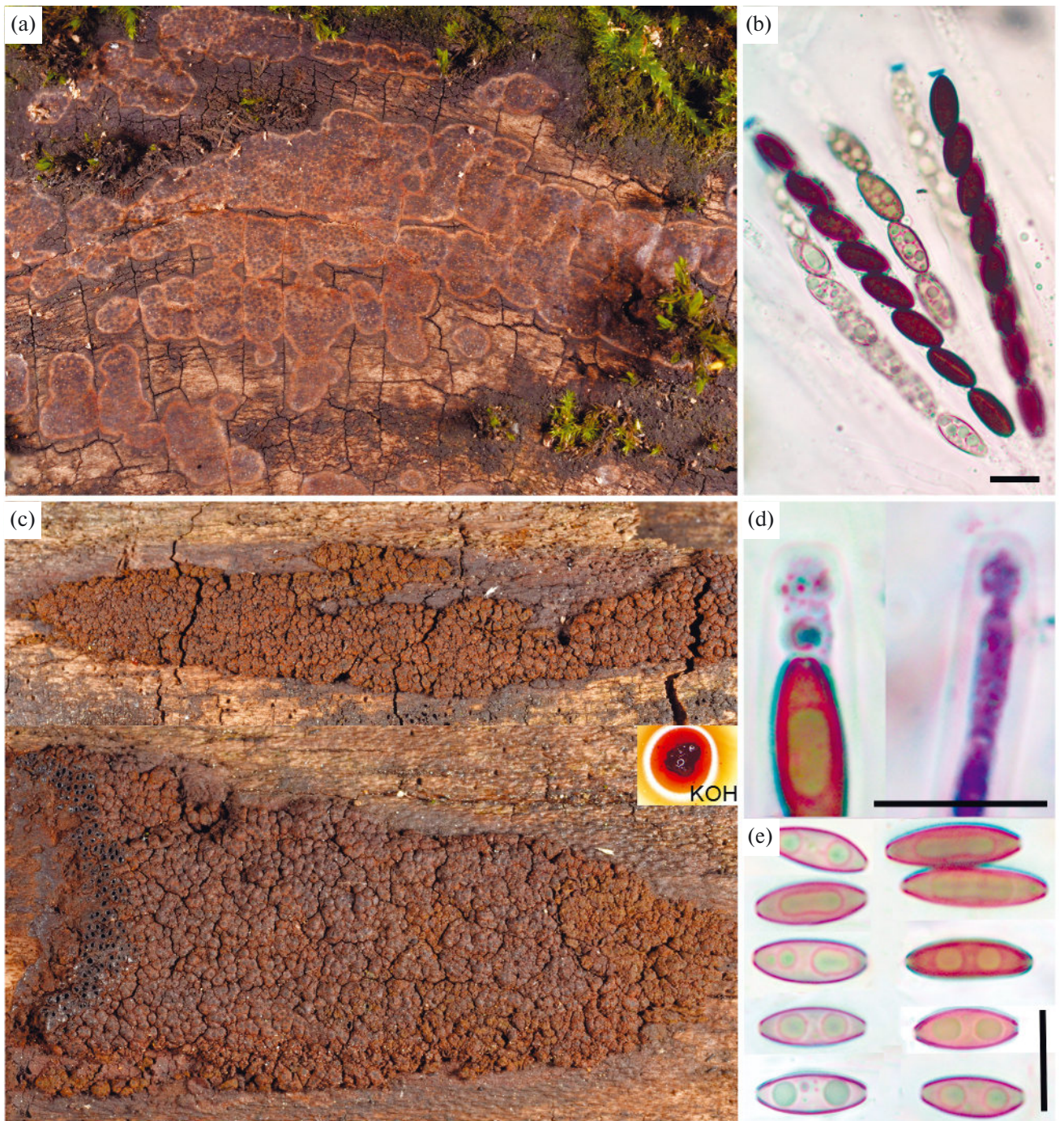


Fig. 1. Macro- and microscopic features of some collected ascomycetous fungi: *Lopadostoma pouzarii* LE F-333550 (a – stromata on wood, b – asci and ascospores); *Biporispora europaea* LE F-324226 (c – stromata on wood and KOH extractable stromatal pigments, d – asci, e – ascospores). Scale bar – 10 µm. Photo by E.S. Popov.

Distribution in Russia: KGD, KHM, PNZ, PRI, PSK, ROS, SPE, TA, UD.

Specimens examined: Tula Oblast, Suворovsky District, vicinity of Varushitsy village, 54.20528° N, 36.30659° E, on soil and litter in old-growth pine plantations with birch, 05.10.2021, coll. and det. TS (TUL F 1858, dupl. LE F-350398).

Clitocybe agrestis Harmaja – new to Sevastopol.

Distribution in Russia: KHM, KO, RYA, SAM, TUL, UD.

Specimen examined: Sevastopol, Balaklavsky District, Karansky Nature Landscape Zakaznik, 44.49235° N, 33.56175° E, on soil in hornbeam-oak-juniper forest, 22.11.2022, coll. Esionova A.V., det. IS (LE F-348572).

Clitopilus geminus (Paulet) Noordel. et Co-David – new to Tula Oblast.

Distribution in Russia: NVS.

Specimens examined: Tula Oblast, Aleksinsky District, Tulskie zaseki forest area, vicinity of Plastovo and Khovanskoye villages, 54.30942° N,

37.03936° E, on soil and litter in spruce plantations, 29.07.2020, coll. and det. TS (TUL F 1864, dupl. LE F-350400).

Cortinarius allutus Fr. — new to the Republic of Crimea.

Distribution in Russia: BU, CHU, IRK, KR, KYA, LEN, MAG, MUR, NVS, PNZ, PRI, SAK, SE, TA, TVE.

Specimen examined: Republic of Crimea, Yalta, Cape Martyan Nature Park, 44.50906° N, 34.24911° E, on soil in juniper-oak-pine forest, 25.01.2019, coll. and det. IS (LE F-348579).

C. integerrimus Kühner — new to the Republic of Crimea.

Distribution in Russia: LEN, PRI.

Specimen examined: Republic of Crimea, Alushta, Angarsky Pass, eastern slopes of the Chatyrdag mountain range, 44.75639° N, 34.34417° E, on soil in oak-hornbeam-beech forest, 06.07.2023, coll. and det. IS (LE F-348571).

Crepidotus stenocystis Pouzar — new to the Republic of Tuva.

Distribution in Russia: UD.

Specimens examined: Republic of Tyva, Piy-Khemsy kozhuun, 26 km northwestward to Sevi village, 52.7172° N, 94.7894° E, on litter in larch forest, 12.08.2020, coll. Vlasenko A.V., det. Vlasenko V.A. (NSK 1017346, dupl. LE F-348594). GenBank accession number — PQ238351 (ITS nrDNA).

Cyathus stercoreus (Schwein.) De Toni — new to Irkutsk Oblast.

Distribution in Russia: AMU, BEL, KB, KHA, KK, KYA, LEN, LIP, NVS, PRI, ROS, SVE, UD.

Specimen examined: Irkutsk Oblast, Bokhansky District, vicinity of Olonki settlement, 52.8987° N, 103.7556° E, on soil in edge of wheat field, 03.08.2023, coll. Enushchenko I.V., det. YuR (LE F-350978).

Flammulina elastica (Sacc.) Redhead et R.H. Petersen — new to Perm Krai.

Distribution in Russia: IVA, KHM.

Specimen examined: Perm Krai, Perm, Ordzhonikidzevsky City District, Kislotnye Dachi Microdistrict, 58.0891° N, 56.3967° E, on dead wood of deciduous tree in mixed forest (*Tilia cordata*, *Betula pendula*, *Pinus sylvestris*), 23.03.2023, coll. Peters D.A., det. LP and ASH (LE F-348565).

F. fennae Bas — new to Perm Krai.

Distribution in Russia: KYA, LEN, ROS, SAM, SPE, SVE, VLG.

Specimen examined: Perm Krai, Osinsky District, vicinity of Ust-Pal village, 57.4168° N, 55.5625° E, at trunk base of *Populus tremula* in mixed forest (*Populus tremula*, *Betula pendula*, *Pinus sylvestris*), 29.09.2023, coll. and det. LP and Botalov V.S. (LE F-348569).

F. populicola Redhead et R.H. Petersen — new to Perm Krai.

Distribution in Russia: KYA.

Specimen examined: Perm Krai, Perm, Chernyayevsky les protected area, 57.9916° N, 56.1803° E, on fallen trunk of *Populus tremula*, 25.05.2022, coll. ASH, det. LP and ASH (LE F-348564).

Hydropus marginellus (Pers.) Singer — new to Tula Oblast.

Distribution in Russia: AL, ALT, KHA, KYA, NGR, NVS, PER, PRI, PSK, TOM, VGG, YEV.

Specimens examined: Tula Oblast, Zaoksky District, vicinity of Velegozh village behind the Oktava camp site, "Green zona of the Velegozh holiday house" protected area, 54.72089° N, 37.23236° E, on rotten wood of *Pinus sylvestris* in coniferous-deciduous forest, 22.07.2019, coll. and det. TS (TUL F 1869, dupl. LE F-350403).

Hygrocybe miniata (Fr.) P. Kumm. — new to Arkhangelsk Oblast.

Distribution in Russia: BEL, BRY, KDA, KGD, KHA, KHM, KK, KLU, KR, KYA, LEN, LIP, MAG, MOS, MOW, MUR, NGR, PER, PRI, PSK, ROS, SAK, SPE, SVE, TA, TOM, TVE, TYU, UD, VOR, YAN.

Specimens examined: Arkhangelsk Oblast, Pinezhsky District, Pinezhsky Nature Reserve, vicinity of Filippovskoye area, 64.68407° N, 43.18824° E, on soil in floodplain forest, 14.09.2023, coll. Ezhov O.N., det. Zmitrovich I.V. (AR3844, dupl. LE F-348555).

Infundibulicybe gigas (Harmaja) Harmaja — new to Perm Krai.

Distribution in Russia: IVA, KO.

Specimen examined: Perm Krai, Perm, Motovilikhinsky City District, 58.0372° N, 56.4159° E, on soil among grasses in birch forest, 23.10.2023, coll. Novoselova L.V., det. LP and Botalov V.S. (LE F-348570).

Leucocortinarius bulbiger (Alb. et Schwein.) Singer — new to Tula Oblast.

Distribution in Russia: AL, ALT, AMU, BEL, CHE, IRK, KGD, KHA, KHM, KIR, KK, KLU, KM, KO, KR, KYA, LEN, LIP, MO, MOS, MUR, NGR, NVS, PER, PNZ, PRI, PSK, RYA, SAM, SAR, SPE, SVE, TA, TOM, UD, VOR, YAR, YEV.

Specimens examined: Tula Oblast, Aleksinsky District, Tulske zaseki forest area, ca. 2 km to the north-west from Plastovo village, 54.30729° N, 37.03874° E, on soil and litter in old-growth spruce plantations with birch, 29.07.2020, coll. TS, det. EP (TUL F 1867, dupl. LE F-350402).

Leucocybe connata (Schumacher) Vizzini, P. Alvarado, G. Moreno et Consiglio — new to the Khanty-Mansi Autonomous Okrug.

Distribution in Russia: widespread species (46 regions).

Specimens examined: Khanty-Mansi Autonomous Okrug, Khanty-Mansiysky District, nearby Shapsha village, 61.06646° N, 69.45351° E, on soil in birch-aspen forest, 23.07.2015, coll. and det. NF (YSU-F-05517, dupl. LE F-348598). GenBank accession number — OR018843 (ITS nrDNA).

Lignomphalia lignicola (Lj.N. Vassiljeva) Antonín, Borovička, Holec et Kolářik — new to the Khanty-Mansi Autonomous Okrug.

Distribution in Russia: AL, AMU, BU, IRK, KHA, KO, KYA, PRI, SAK, VLG, YEV, ZAB.

Specimens examined: Khanty-Mansi Autonomous Okrug, Khanty-Mansiysky city, 60.98606° N, 69.06841° E, on large mossy log of willow, 04.08.2020, coll. Bilous V.V., det. NF (YSU-F-10161, dupl. LE F-348599). GenBank accession number — PQ304235 (ITS nrDNA).

Lycoperdon mammiforme Pers. — new to Tula Oblast.

Distribution in Russia: AD, AMU, ARK, BEL, KC, KHA, KM, LIP, MO, PNZ, PRI, STA, SVE, YEV.

Specimens examined: Tula Oblast, Leninsky District, Malinovaya zaseka nature park, vicinity of Podgorodniye dachi district, left bank of the Voronka River reservoir, 54.10233° N, 37.54608° E, on soil and litter in oak-dominated broad-leaved forest, 11.09.2023, coll. and det. TS (TUL F 1844, dupl. LE F-350390).

L. molle Pers. — new to Murmansk Oblast.

Distribution in Russia: widespread species (43 regions).

Specimens examined: Murmansk Oblast, Kandalakshsky District, vicinity of Kandalaksha, 67.1239° N, 32.4457° E, on litter in mixed forest, 24.08.2023, coll. and det. YuR (LE F-350974); Kirovsk, vicinity of Kirovsk, 67.5969° N, 33.5892° E, on litter in mixed forest, 23.08.2024, coll. Morozova O.V., det. YuR (LE F-350973).

Melanoleuca monticola Antonín, Ďuriška, Jančovičová, Para, Ševčíková et Tomšovský — new to Russia.

Specimens examined: Republic of Tyva, Kyzyl kozhuun, 26 km north-eastward from Cherbi village, 51.9252° N, 94.9766° E, on soil in aspen-birch-larch forest, 09.08.2020, coll. Vlasenko A.V., det. Vlasenko V.A. (NSK 1017355, dupl. LE F-348592), GenBank accession number — PQ256650 (ITS nrDNA); (NSK 1017369, dupl. LE F-348593), GenBank accession number — PQ256651 (ITS nrDNA).

Meotomycetes dissimulans (Berk. et Broome) Vizzini — new to Tula Oblast.

Distribution in Russia: KC, KDA, RYA, SVE, TOM, UD.

Specimens examined: Tula Oblast, Zaoksky District, vicinity of Velegozh village and Oktava camp site, "Green zona of the Velegozh holiday house" protected area, 54.7082° N, 37.2528° E, on soil between rotten leaves in coniferous-deciduous forest, 22.07.2019, coll. and det. TS (TUL F 1870, dupl. LE F-350404).

Mycena luteovariegata Harder et Læssøe — new to the Republic of Crimea.

Distribution in Russia: PNZ.

Specimen examined: Republic of Crimea, Yalta, Cape Martyan Nature Park, 44.50858° N, 34.24877° E, on forest litter in juniper-oak-pine forest, 25.01.2019, coll. and det. IS (LE F-348578).



Fig. 2. Basidiomata of some collected species *in situ*: a – *Volvariella bombycina* LE F-348580 (photo by S.V. Volobuev), b – *Hydnellum gracilipes* INEP 3705, dupl. LE F-348552 (photo by E.A. Borovichev), c – *Callistoporum pseudofelleum* LE F-332287 (photo by L.B. Kalinina), d – basidia and basidiospores of *C. pseudofelleum*, scale bar – 10 µm.

M. pseudocorticola Kühner – new to Perm Krai.

Distribution in Russia: AL, KGD, LEN, NVS, RYA, SPE, TA, TOM, TUL.

Specimen examined: Perm Krai, Perm, Ordzhonikidzevsky City District, Kisloutnye Dachi Microdistrict, 58.0958° N, 56.3890° E, on dead wood of *Tilia cordata* in mixed forest (*Tilia cordata*, *Betula pendula*, *Pinus sylvestris*), 23.03.2023, coll. Peters D.A., det. LP and ASH (LE F-348566).

Nidularia deformis (Willd.) Fr. – new to Murmansk Oblast.

Distribution in Russia: AL, ARK, BEL, IRK, KHM, KO, KR, KRS, LEN, LIP, MAG, MOS, NGR, PNZ, PSK, ROS, RYA, SAK, SPE, SVE, TA, TOM, TVE, VOR.

Specimen examined: Murmansk Oblast, Apatity, 17 km to the west from Apatity, shore of Lake Bolshaya Imandra, 67.5996° N, 33.0047° E, on fallen twigs of *Pinus sylvestris* in pine forest on the swamp edge, 21.08.2023, coll. and det. YuR (LE F-350975).

Phloeomana alba (Bres.) Redhead – new to the Republic of Crimea.

Distribution in Russia: KGD, KHA, LEN, ORE, PRI, SAM, SPE, SVE, TUL.

Specimen examined: Republic of Crimea, Yalta, Cape Martyan Nature Park, 44.5079° N, 34.24197° E, on mossed trunks of *Quercus* sp. in juniper-oak forest, 08.12.2022, coll. and det. IS (LE F-348577).

Phloeomana speirea (Fr.) Redhead – new to the Republic of Crimea.

Distribution in Russia: AL, ALT, KEM, KGD, KHA, KHM, KK, KO, KR, KYA, LEN, MAG, MOS, MOW, MUR, NGR, NVS, ORE, PER, PNZ, PRI, PSK, ROS, SAK, SAM, SPE, SVE, TA, TOM, TUL, ULY, VOR, YAR.

Specimen examined: Republic of Crimea, Yalta, Cape Martyan Nature Park, 44.50846° N, 34.24761° E, on mossed trunks of *Quercus* sp. in juniper-oak forest, 08.12.2022, coll. and det. IS (LE F-348576).

Pholiotina longistipitata E.F. Malysheva et Kiyashko — new to the Khanty-Mansi Autonomous Okrug.

Distribution in Russia: KYA.

Specimens examined: Khanty-Mansi Autonomous Okrug, Khanty-Mansiysky District, nearby Shapsha village, 61.07960° N, 69.45287° E, among green moss and leaf litter in mixed coniferous forest, 05.07.2017, coll. and det. NF (YSU-F-07823, dupl. LE F-348596); *ibid.*, 07.08.2019, coll. and det. NF (YSU-F-08971); *ibid.*, 61.08379° N, 69.46695° E, among green moss and leaf litter, 04.09.2016, coll. and det. NF (YSU-F-07300). GenBank accession number — PP980551 (ITS nrDNA).

Phyllotopsis nidulans (Pers.) Singer — new to Tula Oblast.

Distribution in Russia: widespread species (49 regions).

Specimens examined: Tula Oblast, Leninsky District, Malinovaya zaseka nature park, vicinity of Podgorodniye dachi district, left bank of the Voronka River reservoir, 54.1008° N, 37.54733° E, on rotten wood in broad-leaved forest, 02.10.2021, coll. Efanov M., det. TS (TUL F 1850, dupl. LE F-350394).

Sarcomyxa serotina (Pers.) V. Papp — new to the Kabardino-Balkarian Republic.

Distribution in Russia: widespread species (45 regions).

Specimen examined: Kabardino-Balkarian Republic, Nalchik, slope of Malaya Kizilovka Mountain, 43.46019° N, 43.59769° E, on dead wood of deciduous tree in hornbeam-beech forest, 26.11.2023, coll. EK, det. SV (LE F-348583).

Tricholoma stiparophyllum (N. Lund) P. Karst. — new to Tula Oblast.

Distribution in Russia: AL, ALT, KC, KGD, KHM, KO, KR, KYA, LEN, MOS, NGR, PNZ, PSK, SPE, TA, UD.

Specimens examined: Tula Oblast, Yasnogorsky District, vicinity of Ivankovo village, “Ivankovskiy sosnovyy bor na reke Vosma” protected area, 54.76618° N, 37.93808° E, on soil in pine-deciduous forest, 11.08.2019, coll. and det. TS (TUL F 1863, dupl. LE F-350399).

T. vaccinum (Schaeff.) P. Kumm. — new to Tula Oblast.

Distribution in Russia: AL, AMU, BEL, BU, IRK, KHA, KHM, KM, KO, KYA, LEN, MAG, MOS, MOW, NGR, NVS, PER, PNZ, PRI, SAK, SEV, SMO, SPE, SVE, TOM, TY, UD, VLG, YAR, YEV.

Specimens examined: Tula Oblast, Leninsky District, Shcheglovskaya zaseka forest area, ca. 1.5 km to the north-east from Olenino village, 54.23696° N, 37.84835° E, on soil and litter in spruce plantations, 04.10.2021, coll. and det. TS (TUL F 1852, dupl. LE F-350396).

Volvariella bombycina (Schaeff.) Singer (Fig. 2, a) — new to Oryol Oblast.

Distribution in Russia: widespread species (47 regions).

Specimen examined: Oryol Oblast, Orlovsky District, vicinity of Zhilina village, 53.01848° N, 36.03529° E, on large fallen trunk of *Populus nigra* in field protection plantations of poplar trees along the road, 09.07.2023, coll. and det. SV (LE F-348580).

V. surrecta (Knapp) Singer — new to Tula Oblast.

Distribution in Russia: AMU, KM, LEN, PER, SPE, TA.

Specimens examined: Tula Oblast, Leninsky District, Shcheglovskaya zaseka forest area, ca. 1.5 km to the north-east from Olenino village, 54.23623° N, 37.8454° E, on basidiomata of *Clitocybe nebularis* in pine plantations with birch, 04.10.2021, coll. and det. TS (TUL F 1846, dupl. LE F-350391).

Amylocorticiales

Plicatura crispa (Pers.) Rea — new to the Kabardino-Balkarian Republic.

Distribution in Russia: widespread species (48 regions).

Specimens examined: Kabardino-Balkarian Republic, Nalchik, Botanical Garden of the Kabardino-Balkarian State University, 43.49708° N, 43.59016° E, on fallen trunk of *Betula* sp., 23.11.2023, coll. EK, det. SV (LE F-348588); *ibid.*, on fallen trunk of *Carpinus betulus*, 24.11.2023, coll. and det. EK (LE F-348590); Nalchik, slope of Malaya Kizilovka Mountain, 43.46019° N, 43.59769° E, on dead wood of deciduous tree in hornbeam-beech forest, 26.11.2023, coll. and det. EK (LE F-348585).

Auriculariales

Exidia candida Lloyd — new to Sevastopol.

Distribution in Russia: AL, AMU, ARK, CHU, KC, KGD, KHA, KHM, KO, KR, KYA, LEN, MAG, MO, MUR, NIZ, PRI, RYA, SAK, SAM, SPE, SVE, TYU, UD, YAN, ZAB.

Specimen examined: Sevastopol, Balaklavsky District, Karansky Nature Landscape Zakaznik, 44.51587° N, 33.55450° E, on dead wood of *Carpinus betulus* in juniper-oak-hornbeam forest, 26.11.2022, coll. Esionova A.V., det. IS (LE F-348573).

Gomphales

Phaeoclavulina abietina (Pers.) Giachini — new to Tula Oblast.

Distribution in Russia: widespread species (52 regions).

Specimens examined: Tula Oblast, Aleksinsky District, Tulske zaseki forest area, vicinity of Plastovo and Khovanskoye villages, 54.30895° N, 37.03852° E, on litter of *Picea abies* in spruce plantations, 29.07.2020, coll. and det. TS (TUL F 1861, dupl. LE F-350409).

Hymenochaetales

Coltricia confluens P.-J. Keizer — new to Russia.

Specimens examined: Novosibirsk Oblast, Novosibirsk, Akademgorodok, botanical garden, greenhouse complex, on soil in tropical plant greenhouse, 54.8141° N, 83.1006° E, 24.06.2022, coll. and det. Vlasenko V.A. (NSK 1014854, dupl. LE F-348595). GenBank accession numbers — PQ238352 (ITS nrDNA), PQ237036 (LSU).

Hirschioporus fuscoviolaceus (Ehrenb.) Donk — new to Tula Oblast.

Distribution in Russia: widespread species (69 regions).

Specimens examined: Tula Oblast, Yasnogorsky District, vicinity of Ivankovo village, “Ivankovskiy sosnovyy bor na reke Vosma” protected area, 54.77654° N, 37.90777° E, on dead trunk and branches of *Pinus sylvestris* in pine plantations, 02.10.2019, coll. and det. TS (TUL F 1862, dupl. LE F-350410).

Lyomyces erastii (Saaren. et Kotir.) Hjortstam et Ryvarden — new to Saint Petersburg.

Distribution in Russia: AL, AMU, ARK, BEL, CHE, KAM, LIP, LUG, MOW, ORL, PRI, SAM, SVE, TY, VGG.

Specimen examined: Saint Petersburg, Petrogradsky District, Komarov Botanical Institute's Botanical Garden of Peter the Great, 59.97164° N, 30.3284° E, on dry branches of *Morus alba* in park, 24.07.2024, coll. SV and Bolshakov S.Yu., det. SV (LE F-348581).

Peniophorella guttulifera (P. Karst.) K.H. Larss. — new to Tyumen Oblast.

Distribution in Russia: ARK, DA, KDA, KHM, LEN, NVS, ORE, ORL, PER, SVE.

Specimen examined: Tyumen Oblast, Tobolsk city, 58.28723° N, 68.46799° E, on fallen trunk of *Populus tremula* in aspen forest with *Betula pubescens* and *Tilia cordata*, 28.06.2023, coll. and det. VK (LE F-348558).

Sidera vulgaris (Fr.) Miettinen — new to Tyumen Oblast.

Distribution in Russia: BA, DA, KHM, KIR, LEN, MO, MUR, NIZ, PRI, PSK, SPE, SVE, TA, TOM, TVE.

Specimen examined: Tyumen Oblast, Tobolsk city, 58.20669° N, 68.29377° E, on fallen trunk of *Populus tremula* in aspen forest with *Betula pubescens* and *Tilia cordata*, 17.04.2021, coll. and det. VK (LE F-348560).

Skvortzovia furfuracea (Bres.) G. Gruhn et Hallenberg — new to Tyumen Oblast.

Distribution in Russia: ARK, DA, IRK, KDA, KHM, KIR, KLU, KO, KR, KYA, LEN, ME, MO, MUR, NGR, NIZ, NVS, ORL, PSK, SPE, SVE, TVE, VLG, VOR, YAN, ZAB.

Specimen examined: Tyumen Oblast, Tobolsky District, 2.4 km southward from Irtyshtskie Yurty village, 58.05912° N, 68.28724° E, on decorticated fallen trunk of *Pinus sylvestris* in swampy sphagnum-shrub pine forest, 06.10.2023, coll. and det. VK (LE F-348561).

Xylodon flaviporus (Berk. et M.A. Curtis ex Cooke) Riebesehl et Langer — new to Tyumen Oblast.

Distribution in Russia: widespread species (47 regions).

Specimen examined: Tyumen Oblast, Vagaysky District, 25 km eastward from Istyatskaya village, 57.34461° N, 69.54129° E, on fallen trunk of *Populus tremula* in aspen forest with *Betula* sp., *Tilia cordata* and *Pinus sylvestris*, 24.09.2021, coll. and det. VK (LE F-348562).

Polyporales

Cyanosporus caesi (Schr.) McGinty — new to Tula Oblast.

Distribution in Russia: widespread species (57 regions).

Specimens examined: Tula Oblast, Leninsky District, Shcheglovskaya zaseka forest area, ca. 6 km to the north-east from Olenino village, 54.28501° N, 37.86508° E, on fallen trunk of *Larix* sp. in larch plantations, 04.10.2021, coll. TS, det. TS and Potapov K.O. (TUL F 1856, dupl. LE F-350406).

Fomitopsis rosea (Alb. et Schwein.) P. Karst. — new to Tula Oblast.

Distribution in Russia: widespread species (57 regions).

Specimens examined: Tula Oblast, Leninsky District, Shcheglovskaya zaseka forest area, ca. 1.5 km to the north-east from Olenino village, 54.23567° N, 37.85123° E, on fallen trunk of *Larix* sp. in larch plantations, 04.10.2021, coll. and det. TS (TUL F 1857, dupl. LE F-350407).

Fuscopostia fragilis (Fr.) B.K. Cui, L.L. Shen et Y.C. Dai — new to Tula Oblast.

Distribution in Russia: AD, AL, AMU, ARK, BA, CHE, IRK, KC, KDA, KGD, KHM, KIR, KK, KO, KR, KYA, LEN, MO, MOS, MOW, MUR, NGR, NIZ, NVS, OMS, ORE, ORL, PER, PRI, PSK, RYA, SPE, SVE, TA, TOM, TVE, TYU, UD, VLG, YAN.

Specimens examined: Tula Oblast, Leninsky District, Shcheglovskaya zaseka forest area, ca. 1.5 km to the north-east from Olenino village, 54.23558° N, 37.84982° E, on rotten wood of *Larix* sp. in larch plantations with deciduous trees, 04.10.2021, coll. TS, det. TS and Potapov K.O. (TUL F 1845, dupl. LE F-350405).

Phanerochaete alnea (Fr.) P. Karst. — new to Arkhangelsk Oblast.

Distribution in Russia: AL, BEL, CHE, DA, KAM, KEM, KM, KO, KR, LEN, MO, NGR, NIZ, NVS, OMS, ORL, PER, PRI, SE, SVE, VLG, YAN.

Specimens examined: Arkhangelsk Oblast, Kargopolsky District, Kenozersky National Park, vicinity of Lake Lekshmozero, 61.7706° N, 38.0704° E, on dry standing tree of *Juniperus communis* in floodplain forest, 03.08.2023, coll. Ezhov O.N., det. Zmitrovich I.V. (AR3863, dupl. LE F-348554).

Phlebia tremellosa (Schr.) Nakasone et Burds. — new to the Kabardino-Balkarian Republic.

Distribution in Russia: widespread species (68 regions).

Specimens examined: Kabardino-Balkarian Republic, Nalchik, slope of Malaya Kizilovka Mountain, 43.46019° N, 43.59769° E, on dead wood of deciduous tree in hornbeam-beech forest, 14.10.2023, coll. and det. EK (LE F-348586); Nalchik, Botanical Garden of the Kabardino-Balkarian State University, 43.49708° N, 43.59016° E, on fallen trunk of *Carpinus betulus*, 21.10.2023, coll. EK, det. SV (LE F-348589).

Rhizochaete violascens (Fr.) K.H. Larss. — new to Tyumen Oblast.

Distribution in Russia: AL, ARK, KIR, KO, KR, LEN, NIZ, ORL, PSK, SAK, SPE, SVE, TVE, VLG.

Specimen examined: Tyumen Oblast, Tobolsky District, 2.4 km southward from Irtyshatskie Yurty village, 58.05912° N, 68.28724° E, on decorticated fallen trunk of *Pinus sylvestris* in swampy sphagnum-shrub pine forest, 06.10.2023, coll. and det. VK (LE F-348559).

Sarcodontia setosa (Pers.) Donk — new to the Kabardino-Balkarian Republic.

Distribution in Russia: AST, BEL, CHE, DON, KDA, KIR, KM, KRS, LEN, LIP, MO, NIZ, NVS, ORE, ORL, PRI, ROS, SAM, SVE, TA, TUL, VOR, YEV.

Specimen examined: Kabardino-Balkarian Republic, Nalchik, slope of Malaya Kizilovka Mountain, 43.45881° N, 43.59962° E, on dead standing tree of *Malus domestica* in abandoned apple orchard, 31.10.2023, coll. EK, det. SV (LE F-348587).

Russulales

Dendrophora versiformis (Berk. et M.A. Curtis) Chamuris — new to Primorsky Krai.

Distribution in Russia: AD, AL, AMU, KDA, SAM, YEV, ZAB.

Specimen examined: Primorsky Krai, Vladivostok, Russky Island, 43.00278° N, 131.91861° E, on fallen branches of *Quercus mongolica* in herb-rich oak forest, 29.09.2023, coll. and det. SV (LE F-348582). GenBank accession number — PQ288709 (ITS nrDNA).

Detipellis fragilis (Pers.) Donk — new to the Kabardino-Balkarian Republic.

Distribution in Russia: ARK, BEL, CHE, KDA, KHA, KIR, KM, KR, LEN, MO, MOS, NGR, NIZ, NVS, PER, PRI, PSK, RYA, SAM, SPE, SVE, TA, TVE, UD, VOR, YEV.

Specimen examined: Kabardino-Balkarian Republic, Nalchik, Botanical Garden of the Kabardino-Balkarian State University, 43.49708° N, 43.59016° E, on fallen trunk of *Fagus orientalis*, 23.11.2023, coll. EK, det. SV (LE F-348591).

Lactarius semisanguifluus R. Heim et Leclair — new to Tula Oblast.

Distribution in Russia: KM, LEN, PER, PNZ, VLG.

Specimens examined: Tula Oblast, Suворovsky District, vicinity of Varushitsy village, 54.20385° N, 36.30833° E, on soil in pine forest, 14.08.2023, coll. and det. TS (TUL F 1855, dupl. LE F-350397).

Lentinellus ursinus (Fr.) Kühner — new to Tula Oblast.

Distribution in Russia: AD, AL, ALT, AMU, IRK, IVA, KDA, KGD, KHA, KHM, KYA, LEN, LIP, MOS, NGR, NIZ, NVS, PER, PRI, PSK, RYA, SAM, SPE, SVE, TA, TOM, YEV.

Specimens examined: Tula Oblast, Leninsky District, Malinovaya zaseka nature park, vicinity of Podgorodniye dachi district, left bank of the Voronka River reservoir, 54.10035° N, 37.54818° E, on rotten wood in broad-leaved forest, 02.08.2021, coll. and det. TS (TUL F 1851, dupl. LE F-350395).

Peniophora junipericola J. Erikss. — new to Murmansk Oblast.

Distribution in Russia: ARK, CHE, DA, KDA, KM, SVE.

Specimens examined: Murmansk Oblast, Kandalakshsky District, shore of Lake Kuolajärvi, 66.89339° N, 29.62747° E, on dry branches of *Juniperus communis* in spruce-birch forest, 30.07.2020, coll. YuKh and Urbanavichus G.P., det. YuKh (INEP 3701, dupl. LE F-348551).

Thelephorales

Hydnellum gracilipes (P. Karst.) P. Karst. (Fig. 2, b) — new to Murmansk Oblast.

Distribution in Russia: ARK, KR, LEN.

Specimens examined: Murmansk Oblast, Polyarnye Zori, Rovatostrov Island, 67.50692° N, 32.32633° E, on soil in pine forest, 20.09.2023, coll. and det. YuKh (INEP 3705, dupl. LE F-348552).

Thelephora humicola Køljalg, I. Saar et Svantesson [= *Tomentella terrestris* (Berk. et Broome) M.J. Larsen] — new to Murmansk Oblast.

Distribution in Russia: AMU, ARK, CHE, DA, KAM, KC, KDA, KIR, KR, LEN, NIZ, NVS, ORE, ORL, PRI, SAK, SPE, SVE, TVE.

Specimens examined: Murmansk Oblast, Kirovsk, Khibiny Mts., the southwest slope of the Poachvumchorr Ridge, 468 m a.s.l., 67.67494° N, 33.62094° E, on fallen trunk of *Betula pubescens* in birch forest, 10.09.2019, coll. Shiryaev A.G., det. YuKh (INEP 3702, dupl. LE F-348553); ibid., 518 m a.s.l., 67.67547° N, 33.62336° E, on fallen trunk of *Betula pubescens* in birch forest, 10.09.2019, coll. and det. YuKh (INEP 3703); Lovozersky District, bank of the Tichka River, 67.97508° N, 37.10847° E, on fallen trunk of *Betula pubescens* in birch forest, 18.07.2023, coll. and det. YuKh (INEP 3704).

Th. palmata (Scop.) Fr. — new to Tula Oblast.

Distribution in Russia: widespread species (48 regions).

Specimens examined: Tula Oblast, Shchekinsky District, Yasnaya Polyana museum-reserve, Arkovsky Verkh forest area, 54.07051° N, 37.50784° E, on soil in broad-leaved forest, 02.08.2021, coll. and det. TS (TUL F 1859, dupl. LE F-350408).

ATRACITIELLOMYCETES

Attractiellales

Phleogena faginea (Fr. et Palmquist) Link — new to Tula Oblast.

Distribution in Russia: AMU, IVA, KHA, KYA, MO, PRI, PSK, SVE.

Specimens examined: Tula Oblast, Leninsky District, Malinovaya zaseka nature park, vicinity of Kosaya Gora township, 54.10315° N, 37.50592° E, on fallen trunk of *Quercus robur* in broad-leaved forest, 12.10.2021, coll. and det. TS (TUL F 1860, dupl. LE F-350411).

TREMELLOMYCETES

Tremellales

Naematelia aurantia (Schwein.) Burt — new to the Kabardino-Balkarian Republic.

Distribution in Russia: ARK, BRY, KC, KM, KR, SE, SPE, SVE.

Specimen examined: Kabardino-Balkarian Republic, Nalchik, slope of Malaya Kizilovka Mountain, 43.46019° N, 43.59769° E, on dead wood of deciduous tree in hornbeam-beech forest, 26.11.2023, coll. EK, det. SV (LE F-348584).

Phaeotremella frondosa (Fr.) Spirin et Malysheva — new to Sevastopol.

Distribution in Russia: KC, KHA, LEN, MOW, PER, PSK, SE, SPE, ZAB.

Specimen examined: Sevastopol, Balaklavsky District, Karansky Nature Landscape Zakaznik, 44.50699° N, 33.56245° E, on stump of *Quercus robur* in oak-hornbeam forest, 03.12.2022, coll. Esionova A.V., det. IS (LE F-348574).

DISCUSSION

A total of 81 fungal species, including ten species from the phylum *Ascomycota* and 71 species from the phylum *Basidiomycota*, have been recorded for the first time from 19 administrative regions of Russia.

Six ascomycete species, *Berkleasium conglobatum*, *Biporispora europaea*, *Heydenia arietina*, *Lopadostoma pouzarii*, *Navicella pileata*, *Trizodia acrobata*, are reported as new species to Russia. *Berkleasium conglobatum* is the fourth species of the genus *Berkleasium* recorded in Russia, besides *B. concinnum* (Berk.) S. Hughes, *B. juglandis* (Melnik) G.Z. Zhao (as *Monodictys juglandis* Melnik) (Melnik, 2000), and *B. dudkae* E.S. Hüseyin et Selçuk described from Ulyanovsk Oblast (Russia) (Hüseyin et al., 2014). *Biporispora europaea* was known so far from several localities in France, and was reported there as common in the Atlantic Pyrenees (Rogers et al., 1999). The discovery of the species in Bryansk Oblast significantly extends its range to the east. *Heydenia arietina* is subalpine to alpine European species with peculiar stalked cleistohymenial ascomata often growing on bare carbonate and silicate rock (Cléménçon, 2013). *Lopadostoma pouzarii* is a rather rare European species confined to the boreonemoral and nemoral forests (Granmo, Petrini, 1996). *Navicella pileata* is a relatively rare European species (Holm, Holm, 1988). *Trizodia acrobata* was recorded so far only in Finland and Canada (Stenroos et al., 2010; Ramirez et al., 2024). According to V.N. Botyakov (pers. comm.) in Yaroslavl Oblast it occurs on sphagnum bogs en masse and is probably common and widespread, but overlooked due to tiny size.

Among basidiomycete species, *Callistosporium pseudofelleum*, *Coltricia confluens*, and *Melanoleuca monticola* are registered in Russia for the first time. *Callistosporium pseudofelleum* is reported for the first time in Russia from Primorsky Krai. The species was described recently from the USA. It develops on rotten wood in broad-leaved and mixed forests, and previously it was known only from North America (Vizzini et al., 2020), thus our finding significantly expands the global distributional range of the species. The identity of collected specimen was confirmed by ITS nrDNA sequences analysis. *Coltricia confluens* is registered for Russia based on collection from anthropogenic habitats presented by greenhouses of botanical garden in Novosibirsk. The species was described from the Netherlands as inhabiting artificial plantations of deciduous trees and shrubs (once in a grassfield) in parks (Keizer, 1997). According to the protologue no microscopical differences between *C. confluens* and *C. perennis* (L.) Murrill have been found, but *C. confluens* grows in artificial parks and plantations as seems to be non-mycorrhizal on fertile soils (humose sand, clay) under *Crataegus*, *Ulmus*, *Acer*, *Quercus*, *Prunus*, etc. and one collection was found in a grassland without neighbouring trees. *Melanoleuca monticola* was described in 2023 as differing species from the closely related *M. brachyspora* Harmaja by the absence of a caulohymenium, a distinctly clavate to bulbous stipe base and DNA sequences (Antonín et al., 2023). It was identified as *M. angelesiana* A.H. Sm. by Vizzini et al. (2011), the latter species representing a North American taxon (Antonín et al., 2021). According to a BLAST search of NCBI's GenBank nucleotide databases the similarity of our sequences with holotype (99.38%) was sufficient to identify the specimens as *M. monticola*.

Several fungal species are noteworthy as they are recorded in Russia for the second time. *Clitopilus geminus*, *Crepidotus stenocystis*, *Flammulina populicola*, *Mycena luteovariegata*, and *Pholiotina longistipitata* are reported as second findings. *Clitopilus geminus* is a new species to European Russia. It was previously noted in Novosibirsk Oblast where the species grew on a pile of last year grass in the Central Siberian Botanical Garden of the Siberian Branch of the Russian Academy of Sciences (Banaev et al., 2014). *Crepidotus stenocystis* is the first finding of the species in the Asian part of Russia. Until now it was known in Russia only from the Udmurt Republic based on the specimen collected from stump of *Pinus sylvestris* in pine plantations in the forest park zone of Izhevsk (Kapitonov, 2013). *Flammulina populicola* can be easily confused with widely distributed *F. velutipes* (Curtis) Singer, and the second report for the whole country after the one in Krasnoyarsk Krai (Krom, Kapitonov, 2019) does not indicate the true rarity of the species but urges mycologists to pay more attention to the collections of *Flammulina* species. *Mycena luteovariegata*, confined to the grassland communities,

was previously known in Russia only from Penza Oblast (Ivanov, 1999). *Pholiotina longistipitata* was described from Krasnoyarsk Krai (Crous et al., 2017) based on specimen collected among mosses in floodplain mixed forest (*Abies sibirica*, *Pinus sibirica*, *Betula pendula*). New cited specimens of the species from Khanty-Mansi Autonomous Okrug are also collected among green moss and leaf litter in mixed and coniferous forests.

Noteworthy are fungal finds which are reported for Russia only for the third time. Four species — *Amanita mairei*, *Cortinarius integerrimus*, *Flammulina elastica*, and *Infundibulicybe gigas* — are listed for Russia as the third occurrences. Among them, *Amanita mairei* was previously recorded in Leningrad (Kovalenko, Morozova, 1999) and Penza oblasts (Ivanov, Ermolaeva, 2021). *Cortinarius integerrimus* was known from Leningrad Oblast and Primorsky Krai (Bulakh et al., 1990). *Flammulina elastica* was recorded in Ivanovo Oblast (Golubeva et al., 2023) and Khanty-Mansi Autonomous Okrug (Filippova, Bulyonkova, 2017). *Infundibulicybe gigas* was registered for Ivanovo Oblast (Golubeva, Sorokin, 2021) and the Republic of Komi (Palamarchuk, 2020).

In addition, new data on distribution of some rare and little-collected fungal species such as *Purpleodiscus subisabellinus* and *Hydnellum gracilipes* is presented. The latter species is included in the IUCN Red List of Threatened Species with the category Vulnerable under criteria A2c+3c+4c (Brandrud, 2015). *Hydnellum gracilipes* is hydroid fungus forming mycorrhiza with *Pinus sylvestris*. It is confined to old-growth, often more or less pristine, sandy pine forests, and it is regarded as an indicator species of old-growth forest conditions. The species is red-listed in Norway, Sweden and Finland. In Russia, *Hydnellum gracilipes* has been revealed in Arkhangelsk Oblast (Svetasheva et al., 2017), Leningrad Oblast (Zmitrovich et al., 2015), and the Republic of Karelia (Predtechenskaya, Ruokolainen, 2024).

Together with traditional microscopic identification, ITS1–5.8S-ITS2 nuclear ribosomal DNA sequences were obtained from the specimens studied and compared with the reference sequences from the GenBank database. New complete sequences of ITS nrDNA have been generated and submitted to the GenBank database for *Atractosporocybe inornata*, *Callistosporium pseudofelleum*, *Coltricia confluens*, *Crepidotus stenocystis*, *Dendrophora versiformis*, *Leucocybe connata*, *Lignomphalia lignicola*, *Melanoleuca monticola*, and *Pholiotina longistipitata*.

Investigations on the regional mycobiota of Russia will be continued.

The work of S.V. Volobuev, S.Yu. Bolshakov, L.B. Kalinina, E.S. Popov, and I.V. Zmitrovich has been carried out within the framework of the institutional research project of the Komarov Botanical Institute (project

N124020100148-3) using the equipment of the Core Facility Centre “Cell and Molecular Technologies in Plant Science” at the Komarov Botanical Institute, RAS (St. Petersburg, Russia). The work of I.S. Sarkina was carried out within the framework of the institutional research project of the Nikita Botanical Gardens - National Scientific Center of RAS (project FNNS-2022-0009). The work of V.A. Vlasenko and A.V. Vlasenko was carried out within the framework of the State Assignment of the Central Siberian Botanical Garden, SB RAS (N AAAA-A21-121011290024-5) and State Scientific Institution of the Republic of Tyva “Center for Biosphere Research”. The work of V.I. Kapitonov was carried out within the framework of the research project of the Tobolsk Complex Scientific Station of the Ural Branch RAS (project N122011800529-3). The work of Yu.A. Rebriev was carried out within the frame of government assignments for the South Science Center RAS (project 122020100332-8). The work of N.V. Filippova was supported by the grant from the federal budget for the implementation of the state assignment “Molecular-genetic methods in the study and assessment of biodiversity in the Northern regions (FENG-2024-0003)” N1023041300017-6-1.6.4 dated 13.03.2024. The work of Yu.R. Khimich was carried out within the framework of the research project no. FMEZ-2022-0021 of the Institute of North Industrial Ecology Problems of the Kola Scientific Center of RAS. The work of O.N. Ezhov was carried out within the framework of the research project “FUUW-2022-0057: Study of patterns of spatio-temporal changes in forest ecosystems in the subarctic territories of the European North of Russia” (state registration number — 122011400384-2). The authors thank colleagues for their help in collecting some fungal specimens.

REFERENCES

- Antonín V., Ďuriška O., Jančovičová S. et al. Two new European species of *Melanoleuca* (Fungi, Agaricales) with comments on the *M. graminicola* group. Systematics and Biodiversity. 2023. V. 21 (1).
<https://doi.org/10.1080/14772000.2023.2218375>
- Antonín V., Ševčíková H., Para R. et al. *Melanoleuca galbuserae*, *M. fontenlae* and *M. acystidiata*, three new species in subgen. *Urticocystis*, and comments to *M. castaneofusca* and related species. Journal of Fungi. 2021. V. 7. Art. 191.
<https://doi.org/10.3390/jof7030191>
- Banaev E.V., Vlasenko A.V., Vlasenko V.A. et al. Plant diversity of Central Siberian Botanical Garden, SB RAS. Eds. I. Yu. Koropachinskiy, E.V. Banaev. Academic Publishing House “Geo”, Novosibirsk, 2014. (In Russ.)
- Bolshakov S.Yu., Volobuev S.V., Ezhov O.N. et al. Aphyllophoroid fungi of the European part of Russia: a checklist / Eds. S.Yu. Bolshakov, S.V. Volobuev. ETU Publishing house, St. Petersburg, 2022. (In Russ.)

- Bolshakov S., Kalinina L., Palomozhnykh E. et al. Agaricoid and boletoid fungi of Russia: the modern country-scale checklist of scientific names based on literature data. *Biological Communications*. 2021. V. 66 (4). P. 316–325. <https://doi.org/10.21638/spbu03.2021.404>
- Bolshakov S.Yu., Kalinina L.B., Volobuev S.V. et al. New species for regional mycobiotas of Russia. 5. Report 2020. *Mikologiya i fitopatologiya*. 2020. V. 54 (6). P. 404–413. <https://doi.org/10.31857/S0026364820060033>
- Bolshakov S.Yu., Potapov K.O., Ezhov O.N. et al. New species for regional mycobiotas of Russia. 1. Report 2016. *Mikologiya i fitopatologiya*. 2016. V. 50 (5). P. 275–286.
- Bolshakov S.Yu., Volobuev S.V., Potapov K.O. et al. New species for regional mycobiotas of Russia. 3. Report 2018. *Mikologiya i fitopatologiya*. 2018. V. 52 (6). P. 386–397. <https://doi.org/10.1134/S0026364818060028>
- Brandrud T.-E. *Hydnellum gracilipes*. The IUCN Red list of threatened Species 2015: e.T76170958A76170972. 2015. <https://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T76170958A76170972.en>. Accessed on 12 May 2024.
- Bulakh E.M., Wasser S.P., Nazarova M.M. et al. Lower plants, fungi and mosses of the Soviet Far East. *Fungi*. V. 1. *Basidiomycetes: Russulaceae, Agaricaceae, Cortinariaceae, Paxillaceae, Gomphidiaceae, Strobilomycetaceae*. Nauka, Leningrad, 1990. (In Russ.)
- Cléménçon H. Die Gattung *Heydenia* (Pyronemataceae, Pezizales). *Zeitschrift für Mykologie*. 2013. V. 79 (2). P. 511–545.
- Crous P.W., Wingfield M.J., Burgess T.I. et al. Fungal Planet description sheets: 558–624. *Persoonia*. 2017. V. 38. P. 240–384. <https://doi.org/10.3767/003158517X698941>
- Filippova N.V., Bulyonkova T.M. The diversity of larger fungi in the vicinities of Khanty-Mansiysk (middle taiga of West Siberia). *Environmental Dynamics and Global Climate Change*. 2017. V. 8 (1). P. 13–24. <https://doi.org/10.17816/edgcc8113-24>
- Golubeva M.A., Kapitonov V.I., Dedyukhin A.V. et al. New macro-mycetes species for the Ivanovo region from the territory of the Plyos museum-reservation. *Phytodiversity of Eastern Europe*. 2023. V. 17 (3). P. 15–31. (In Russ.). <https://doi.org/10.24412/2072-8816-2023-17-3-15-31>
- Golubeva M.A., Sorokin A.I. Macromycetes of the natural monument “Territory of the rest home Poroshino” (Privolzhsky District, Ivanovo Region). In: *Malygin A.A.* (ed.). *Research activity in a classical university: traditions and innovations. Materials of the International Scientific and Practical Festival. Ivanovo State University, Ivanovo*, 2021. P. 62–69.
- Granmo A., Petrini L.E. A new species of *Lopadostoma* and the anamorph of *Biscogniauxia cinereolilacina*. *Mycol. Helvetica*. 1996. V. 8. P. 43–50.
- Holm L., Holm K. Studies in the *Lophiostomataceae* with emphasis on the Swedish species. *Symbolae Botanicae Upsalienses*. 1988. V. 28 (2). P. 1–50.
- Hüseyin E., Selçuk F., Churakov B.P. A new species of *Berkleasmium* from Ulyanovsk, Russia. *Mycosphere*. 2014. V. 5 (3). P. 462–466. <https://doi.org/10.5943/mycosphere/5/3/8>
- ISO 3166–2 Changes in the list of subdivision names and code elements. Newsletter II-2. 2010. http://www.iso.org/iso/iso_3166-2_newsletter_ii-2_2010-06-30.pdf. Accessed 16.05.2024
- Ivanov A.I. Basidial macromycetes of the Volga forest-steppe Reserve. In: *Biodiversity and dynamics of natural processes in the Volga Forest-Steppe Reserve. Proceedings of the state reserve “Volga forest-steppe”. Issue 1. Penza*, 1999. P. 34–37. (In Russ.).
- Ivanov A.I., Ermolaeva A.A. Influence of environmental factors on the spatial distribution of soil *Agaricomycetes* in floodplain habitats. *Mikologiya i fitopatologiya*. 2021. V. 55 (4). P. 239–255. (In Russ.) <https://doi.org/10.31857/S002636482104005X>
- Kapitonov V.I. The finds of new (for Udmurtia) species of macromycetes. *Bulletin of Udmurt University. Series Biology. Earth Sciences*. 2013. N 4. P. 9–24. (In Russ.)
- Keizer P.J. *Coltricia confluens*: a new polypore from the Netherlands. *Persoonia*. 1997. V. 16 (3). P. 389–391.
- Kovalenko A.E., Morozova O.V. Agaricoid and gasteroid macromycetes of Leningrad Oblast. In: *Balashova N.B., Zavarzin A.A.* (eds). *Biodiversity of Leningrad Oblast (Algae. Fungi. Lichens. Mosses. Invertebrate animals. Fish and fish-like organisms)*. Saint Petersburg University Publishing House, Saint Petersburg, 1999. P. 89–140. (In Russ.)
- Krom I. Yu., Kapitonov V.I. Checklist of macromycetes from the natural mikrozakaznik “Zharovsky” (Krasnoyarsk Territory, Russia). *Bulletin of Udmurt University. Series Biology. Earth Sciences*. 2019. N 29 (4). P. 443–462. (In Russ.). <https://doi.org/10.35634/2412-9518-2019-29-4-443-462>
- Melnik V.A. *Definitorium fungorum Rossiae. Classis Hyphomycetes. Fasc. 1. Fam. Dematiaceae*. Nauka, Petropoli, 2000. (In Russ.)
- Palamarchuk M.A. New data on agaricoid basidiomycetes (*Agaricomycetes*, *Basidiomycota*) of the Komi Republic. *Mikologiya i fitopatologiya*. 2020. V. 54 (2). P. 98–106. (In Russ.) <https://doi.org/10.31857/S0026364820020087>
- Predtechenskaya O.O., Ruokolainen A.V. Mycobiota of the planned protected area Nyuk Lake (Republic of Karelia, Russia). *Mikologiya i fitopatologiya*. 2024. V. 58 (2). P. 122–133. (In Russ.) <https://doi.org/10.31857/S0026364824020043>
- Ramirez J., Watson K., Feder L. et al. The New York Botanical Garden Herbarium (NY). Version 1.73. The New York Botanical Garden. 2024. Occurrence dataset <https://doi.org/10.15468/6e8nje> accessed via GBIF.org on 2024-09-10. <https://www.gbif.org/occurrence/1929066507>
- Rogers J.D., Ju Y.-M., Candoussau F. *Biporispora europaea* gen. et sp. nov., a new pyrenomycete from France. *Nova Hedwigia*. 1999. V. 68. P. 421–424.
- Stenroos S., Laukka T., Huhtinen S. et al. Multiple origins of symbioses between ascomycetes and bryophytes suggested by a five-gene phylogeny. *Cladistics*. 2010. V. 26 (3). P. 281–300. <https://doi.org/10.1111/j.1096-0031.2009.00284.x>

- Svetasheva T.Yu., Arslanov S.N., Bolshakov S.Yu. et al. New species for regional mycobiota of Russia. 2. Report 2017. Mikologiya i fitopatologiya. 2017. V. 51 (6). P. 375–389.
- Vizzini A., Consiglio G., Marchetti M. et al. Insights into the Tricholomatineae (Agaricales, Agaricomycetes): a new arrangement of Biannulariaceae and Callistosporium, Callistosporiaceae fam. nov., Xerophorus stat. nov., and Pleurocollybia incorporated into Callistosporium. Fungal Diversity. 2020. V. 101. P. 211–259. <https://doi.org/10.1007/s13225-020-00441-x>
- Vizzini A., Para R., Fontenla R. et al. A preliminary ITS phylogeny of Melanoleuca (Agaricales) with special reference to European taxa. Mycotaxon. 2011. V. 118. P. 361–381. <https://doi.org/10.5248/118.361>
- Volobuev S.V., Bolshakov S.Yu., Kalinina L.B. et al. New species for regional mycobiotas of Russia. 7. Report 2022. Mikologiya i fitopatologiya. 2022. V. 56 (6). P. 383–392. <https://doi.org/10.31857/S0026364822060101>
- Volobuev S.V., Bolshakov S.Yu., Kalinina L.B. et al. New species for regional mycobiotas of Russia. 8. Report 2023. Mikologiya i fitopatologiya. 2023. V. 57 (5). P. 309–320. <https://doi.org/10.31857/S0026364823050112>
- Volobuev S.V., Bolshakov S.Yu., Khimich Yu.R. et al. New species for regional mycobiotas of Russia. 6. Report 2021. Mikologiya i fitopatologiya. 2021a. V. 55 (6). P. 411–422. <https://doi.org/10.31857/S0026364821060131>
- Volobuev S.V., Bolshakov S.Yu., Shiryayev A.G. et al. New species for regional mycobiotas of Russia. 4. Report 2019. Mikologiya i fitopatologiya. 2019. V. 53 (5). P. 261–271. <https://doi.org/10.1134/S0026364819050076>
- Volobuev S.V., Ivanushenko Yu.Yu., Ismailov A.B. Diversity and ecology of poroid fungi (Agaricomycetes, Basidiomycota) of the Gunib Plateau, Dagestan. South of Russia: ecology, development. 2021b. V. 16 (3). P. 68–80. <https://doi.org/10.18470/1992-1098-2021-3-68-80>
- Zmitrovich I.V., Stolyarskaya M.V., Kalinovskaya N.I. et al. Macromycetes of Nizhne-Svirsky Reserve. Svoye Izdatel'stvo, SPb., 2015. (In Russ.)
- Банаев Е.В., Власенко А.В., Власенко В.А. и др. (Banaev et al.) Растительное многообразие Центрального сибирского ботанического сада СО РАН / науч. ред. Коропачинский И.Ю., Банаев Е.В. Новосибирск: Академическое изд-во “Гео”, 2014. 492 с.
- Большаков С.Ю., Волобуев С.В., Ежов О.Н. и др. (Bolshakov et al.) Афиллофороидные грибы европейской части России: аннотированный список видов / отв. ред. С.Ю. Большаков, С.В. Волобуев. СПб.: Изд-во СПбГЭТУ “ЛЭТИ”, 2022. 578 с.
- Булах Е.М., Вассер С.П., Назарова М.М. и др. (Bulakh et al.) Низшие растения, грибы и мохообразные советского Дальнего Востока России. Грибы. Том 1. Базидиомицеты: Сыроежковые, Агариковые, Паутинниковые, Паксилловые, Мокруховые, Шишкогрибовые. Л.: Наука, 1990. 407 с.
- Голубева М.А., Капитонов В.И., Дедюхин А.В. и др. (Golubeva et al.) Новые для Ивановской области виды макромицетов с территории Плесского музея-заповедника // Фиторазнообразие Восточной Европы. 2023. Т. 17 (3). С. 15–31. <https://doi.org/10.24412/2072-8816-2023-17-3-15-31>
- Голубева М.А., Сорокин А.И. (Golubeva, Sorokin) Макромицеты памятника природы “Территория дома отдыха Порошино” (Приволжский район, Ивановская область) // Научно-исследовательская деятельность в классическом университете: традиции и инновации. Материалы Международного научно-практического фестиваля / отв. ред. А.А. Малыгин. Иваново: Ивановский гос. ун-т, 2021. С. 62–69.
- Змитрович И.В., Столярская М.В., Калиновская Н.И. и др. (Zmitrovich et al.) Макромицеты Нижне-Свирского заповедника (аннотированный список видов). СПб.: Свое издательство, 2015. 185 с.
- Иванов А.И. (Ivanov) Базидиальные макромицеты заповедника “Приволжская лесостепь” // Биологическое разнообразие и динамика природных процессов в заповеднике “Приволжская лесостепь”. Труды государственного заповедника “Приволжская лесостепь”. Вып. 1. Пенза, 1999. С. 34–37.
- Иванов А.И., Ермолаева А.А. (Ivanov, Ermolaeva) Влияние экологических факторов на пространственное распределение напочвенных агарикомицетов (Agaricomycetes) в пойменных местообитаниях // Микология и фитопатология. 2021. Т. 55 (4). С. 239–255. <https://doi.org/10.31857/S002636482104005X>
- Капитонов В.И. (Kapitonov) Находки новых для Удмуртии видов макромицетов // Вестник Удмуртского Университета. Серия Биология. Науки о Земле. 2013. № 4. С. 9–24.
- Коваленко А.Е., Морозова О.В. (Kovalenko, Morozova) Агарикоподобные и гастероидные макромицеты Ленинградской области // Балашова Н.Б., Заварзин А.А. (отв. ред.) Биоразнообразие Ленинградской области (Водоросли. Грибы. Лишайники. Мохообразные. Беспозвоночные животные. Рыбы и рыбообразные). СПб.: Изд-во С.-Петербург. ун-та, 1999. С. 89–140.
- Кром И.Ю., Капитонов В.И. (Krom, Kapitonov) Первые сведения о видовом составе макромицетов природного микрозаказника “Жаровский” (Красноярский край, Россия) // Вестник Удмуртского университета Сер. Биология. Науки о Земле. 2019. Т. 29. № 4. С. 443–462.
- Мельник В.А. (Melnik) Определитель грибов России. Класс Nymphaeales. Вып. 1. Сем. Dematiaceae. СПб.: Наука, 2000. 371 с.
- Паламарчук М.А. (Palamarchuk) Новые сведения об агарикоподобных базидиомицетах (Agaricomycetes, Basidiomycota) Республики Коми // Микология и фитопатология. 2020. Т. 54 (2). С. 98–106. <https://doi.org/10.31857/S0026364820020087>
- Предтеченская О.О., Руоколайнен А.В. (Predtechenskaya, Ruokolainen) Микобиота планируемой ООПТ “Озеро Нюк” (Республика Карелия, Россия) // Микология и фитопатология. 2024. Т. 58 (2). С. 122–133. <https://doi.org/10.31857/S0026364824020043>

Новые виды для микобиот регионов России.

9. Информационное сообщение — 2024

С. В. Волобуев^{a, #}, Т. Ю. Светашева^{b, ##}, Е. С. Попов^{a, ###}, И. С. Саркина^{c, ####},
Л. Г. Переведенцева^{d, #####}, В. А. Власенко^{e, f, #####}, Л. Б. Калинина^{a, #####},
В. И. Капитонов^{g, #####}, Ю. А. Ребриев^{h, #####}, Е. А. Крапивина^{i, #####},
Н. В. Филиппова^{j, #####}, Ю. Р. Химич^{k, #####}, А. С. Шишигин^{l, #####},
И. В. Змитрович^{a, #####}, В. С. Боталов^{d, #####}, И. В. Енущенко^{m, #####},
О. Н. Ежов^{n, #####}, С. Ю. Большаков^{a, #####}

^a Ботанический институт им. В.Л. Комарова РАН, Санкт-Петербург, Россия

^b Тульский государственный педагогический университет им. Л.Н. Толстого, Тула, Россия

^c Никитский ботанический сад — Национальный научный центр РАН, Ялта, Россия

^d Пермский государственный национальный исследовательский университет, Пермь, Россия

^e Центральный сибирский ботанический сад СО РАН, Новосибирск, Россия

^f Центр биосферных исследований Республики Тыва, Кызыл, Россия

^g Тобольская комплексная научная станция Уральского отделения РАН, Тобольск, Россия

^h Южный научный центр РАН, Ростов-на-Дону, Россия

ⁱ Кабардино-Балкарский государственный университет им. Х.М. Бербекова, Нальчик, Россия

^j Югорский государственный университет, Ханты-Мансийск, Россия

^k Институт проблем промышленной экологии Севера — обособленное подразделение Федерального исследовательского центра

“Кольский научный центр Российской академии наук”, Апатиты, Россия

^l Пермский государственный гуманитарно-педагогический университет, Пермь, Россия

^m Всероссийский центр карантина растений, Иркутск, Россия

ⁿ Федеральный исследовательский центр комплексного изучения Арктики им. академика Н.П. Лаврова УрО РАН,

Архангельск, Россия

[#]e-mail: sergvolobuev@binran.ru

^{##}e-mail: foxtail_svelt@mail.ru

^{###}e-mail: epopov@binran.ru

^{####}e-mail: maslov_ivan@mail.ru

^{#####}e-mail: perevperm@mail.ru

^{#####}e-mail: vlasenkomyces@mail.ru

^{#####}e-mail: lkalinina@binran.ru

^{#####}e-mail: kvi@udsu.ru

^{#####}e-mail: rebriev@yandex.ru

^{#####}e-mail: e.a.krapivina@mail.ru

^{#####}e-mail: filippova.courlee.nina@gmail.com

^{#####}e-mail: ukhim@inbox.ru

^{#####}e-mail: shishigin1992@mail.ru

^{#####}e-mail: iv_zmitrovich@mail.ru

^{#####}e-mail: vitalywc@yandex.ru

^{#####}e-mail: deschampsia@yandex.ru

^{#####}e-mail: olegezhik@gmail.com

^{#####}e-mail: anastasiamix81@mail.ru

^{#####}e-mail: sbolshakov@binran.ru

Представлены данные о находках 81 вида грибов, включая десять видов сумчатых и 71 вид базидиальных грибов, выявленных впервые для Кабардино-Балкарской Республики (6), Республики Крым (6), Республики Тыва (2), Пермского края (8), Приморского края (2), Архангельской (2), Брянской (1), Иркутской (3), Мурманской (6), Новосибирской (1), Орловской (1), Псковской (2), Тульской (27), Тюменской (5), Ульяновской (1), Ярославской (1) областей, Санкт-Петербурга (1), Севастополя (3), Ханты-Мансийского автономного округа (4). Аннотированный список включает данные о местонахождении, местообитаниях, субстратах и датах сбора привозимых находок, с указанием коллекционных номеров микологических гербариев. Первые для России приводятся *Berkleasium conglobatum*, *Biporisporea europaica*, *Heydenia arietina*, *Lopadostoma pouzarii*, *Navicella pileata*, *Trizodia acrobata* (Ascomycota), а также *Callistosporium pseudofelleum*, *Coltricia confluens*, *Melanoleuca monticola* (Basidiomycota). Виды

Clitopilus geminus, *Crepidotus stenocystis*, *Flammulina populicola*, *Mycena luteovariegata* и *Pholiotina longistipitata* указываются для России во второй раз. Среди них *Clitopilus geminus* является новым видом для европейской части России, а *Crepidotus stenocystis* — новый вид для Азиатской России. Виды *Amanita mairei*, *Cortinarius integerrimus*, *Flammulina elastica* и *Infundibulicybe gigas* отмечены третьими находками. Представлены новые данные о редких и малоизвестных видах грибов *Purpureodiscus subisabellinus* и *Hydnellum gracilipes*. Получены и депонированы в международную базу данных Генбанк полные нуклеотидные последовательности ITS1–5.8S–ITS2 области ядерной рибосомальной ДНК для девяти изученных видов.

Ключевые слова: аскомицеты, базидиомицеты, биогеография грибов, биоразнообразие, ДНК-штрихкоды, новые находки