

БИОРАЗНООБРАЗИЕ, СИСТЕМАТИКА,  
ЭКОЛОГИЯ

УДК 582.28 : 581.95

NEW SPECIES OF MACROMYCETES FOR REGIONS OF THE RUSSIAN FAR EAST. 1

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Received February 1, 2020; revised April 28, 2020; accepted May 11, 2020

The research of the species diversity of fungi in Russian Far East has a long-time history. A lot of material has been accumulated over years of inventorying studies, however, a significant part of these data has not yet been published. The paper opens a series of publications devoted to new finds of macrofungi (ascomycetes, basidiomycetes) in regions of Russian Far East. A total of 76 species of macromycetes are reported for the first time from 8 administrative units of Russian Far East: Amur Oblast, Magadan Oblast, Sakhalin Oblast, Kamchatka Krai, Khabarovsk Krai, Primorskiy Krai, Chukotka Autonomous Okrug, and Jewish Autonomous Oblast. Each annotated record provides details about specimen ecology and collection information: locality, habitat, substrate, specimen herbarium numbers, collectors and determiners as well as notes on rarity and protection status of some species. The material was deposited in several herbaria (VLA, MAG, LE) and in the Yu. Rebriev and A. Shiryayev personal collections. Six species (*Ascocoryne turficola*, *Morchella semilibera*, *M. crassipes*, *Geastrum quadrifidum*, *Phallus flavocostatus*, and *P. tenuis*) are reported as the first records for the Russian Far East. *Sphaerobolus ingoldii* is recorded in Asian part of Russia for the first time, and *Calostoma japonicum* is a new species for Russia.

**Key words:** ascomycetes, basidiomycetes, biodiversity, fungal distribution, macromycetes, Russia

**DOI:** 10.31857/S0026364820040091

## INTRODUCTION

Inventorying biodiversity is a fundamental task for a broad range of life sciences, including taxonomy, ecology, and conservation. In Russia, – the largest country in the world, – many regions and taxonomic groups of fungi remain insufficiently studied. Among these regions is the Russian Far East, which features exceptionally diverse and peculiar fungal biota.

The Far East spans through three natural zones and covers 20 floristic regions (Lower plants., 1990). Its natural zones are characterized by a wide variety of vegetation, including Arctic deserts, tundra and forest tundra, taiga and broad-leaved forests. Mycological research has been carried out in all regions of Far East; among them, Primorskiy Krai is the best studied territory. The diversity of fungi in the more northern regions has been studied to a lesser extent. The study of macroscopic fungi has a long history and the results of many years of research are represented in a number of publications (Karatygin et al., 1999; Sazanova, 2009; Bulakh, 2016; Bogacheva et al., 2018; Bukharova, 2018). The systematic research of basidiomycetes was

initiated in the 1940's by L.N. Vasilieva. Mycologists of the Komarov Botanical Institute RAS and other scientific centers in Russia and abroad played a significant role in the study of fungi of the Far East.

To date, about 1442 species of agaricoid and about 600 species of aphylophoroid fungi are known from the entire Russian Far East (Bulakh, 2016). The species lists for geographical and administrative regions and individual protected areas have been published in numerous articles and monographs. Some finds of new and noteworthy species in the region are reported in separate works (Bulakh, 2008; Spirin et al., 2013; Shiryayev, 2013, 2018; Kiyashko et al., 2014; Sazanova, 2015; Sazanova, Rebriev, 2019; Volobuev et al., 2019). Many new species have been described based on combined classical and molecular approach in recent years: agaricoid (Noordeloos, Morozova, 2010; Malysheva et al., 2013; Justo et al., 2014), gasteroid (Rebriev, Bulakh, 2015; Crous et al., 2019) and aphylophoroid fungi (Zhou et al., 2014). In total, more than 60 new species have been described in the course of the studies of fungi in Russian Far East.

Despite the collective research effort described above, a large proportion of the vast Far Eastern territories still remains insufficiently or poorly known. The mycobiota of a number of nature reserves has not been fully studied. The considerable amount of material accumulated in the major herbaria collections has not been analysed and published. Due to the critical analysis of many groups of basidiomycetes with an advent of molecular methods, accumulated herbaria collections have to be sufficiently revised. The abundance of material waiting for publication determined the need to initiate a separate series of articles, similar to the series "New species for regional mycobiotas of Russia" (Bolshevik et al., 2016). This publication introduces the findings of macromycetes that are new for individual administrative divisions of the Far East or for the entire region altogether.

An annotation record includes specimen and collecting event details in the following sequence: location, habitat, substrate, date of collection, collector, identifier, and herbarium number. Information about the novelty of the taxon for a particular area is provided when necessary. For some species, their IUCN protection status is reported. The material was accessioned in LE (Saint Petersburg), MAG (Magadan), SVER (Ekaterinburg) and VLA (Vladivostok) herbaria, as well as in the Yu. Rebriev (YuR in Rostov-on-Don) and A. Shiryaev (A. Shiryaev in Ekaterinburg) personal collections.

Material was collected and identified by Yury A. Rebriev (abbreviated as YR), Evgenia M. Bulakh (EB), Nina A. Sazanova (NS), Anton G. Shiryaev (AS) and others, as indicated in the text. If the sample is collected and determined by a one specialist, there are no notes "coll. and det."

### *Ascomycota*

#### *Helotiales*

*Ascocoryne turficola* (Boud.) Korf. – new for Chukotka Autonomous Okrug and Magadan Oblast; new for Russian Far East.

**Specimens examined:** *Chukotka Autonomous Okrug:* Anadyrskiy District, middle stream of Bolshoy Kuybiveem river, 62.9468°N, 170.1696°E, shrubby boggy tundra, on *Calliargon* sp. and *Drepanocladus* s.l., 14.07.1987, NS (MAG 4036); *Magadan Oblast:* Olskiy District, vicinity of Balagannoe village, 59.6479°N, 149.1070°E, cranberry bog, on *Sphagnum* sp., 05.06.2018, coll. O. Mochalova, det. NS (MAG 5065).

#### *Pezizales*

*Morchella semilibera* DC. – new for Magadan Oblast; new for Russian Far East.

**Specimens examined:** *Magadan Oblast:* Khasynskiy District, valley of Uptar river, near open ash pit, 59.8873°N, 150.6687°E, floodplain forest with *Chosenia arbutifolia* and *Prunus padus*, on soil, 20.06.2011, coll. O. Mochalova, det. NS (MAG 3553); Sred-

nekanskiy District, vicinity of Seymchan village, 59.8873°N, 150.6687°E, valley of Seymchan river, mixed floodplain forest, on soil, 01-07.06.2019, coll. S. Yarysheva, det. NS (MAG 5179, MAG 5180).

*M. crassipes* (Vent.) Pers. – new for Magadan Oblast; new for Russian Far East.

**Specimens examined:** *Magadan Oblast:* Magadan city, Portovaya street, 59.5640°N, 150.7811°E, lawn, on soil, 02.07.2013, coll. V. Pospokhov, det. NS (MAG 4253).

### *Basidiomycota*

#### *Agaricales*

*Agaricus bisporus* (J.E. Lange) Imbach – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* Magadan city, Pionernyy microdistrict, 59.5857°N, 150.7811°E, cucumber greenhouse of Magadan Thermal Power Station, on ground with imported horse manure, 10.04.2019, NS (MAG 5102).

*A. semotus* Fr. – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* vicinity of Magadan city, Nagaev microdistrict, 59.5674°N, 150.7571°E, forest with *Betula lanata*, on soil among litter, 28.07.2016, NS (MAG 4442); Khasynskiy District, Olskoe plateau, 60.6343°N, 151.5263°E, mountain tundra with *Betula exilis* and *Dryas* sp., on soil, 18.07.2007, NS (MAG 4035).

*Agrocybe elatella* (P. Karst.) Vesterh. – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* Olskiy District, Zavyalov island, 59.0784°N, 150.6346°E, left bank of Malaya Rechka brook, among grass and *Polytrichum* sp., wet habitat, 10.08.2019, NS (MAG 5226).

*Arrhenia lobata* (Pers.) Kühner et Lamoure ex Redhead – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* Olskiy District, Zavyalov island, NW part of the island, 59.0776°N, 150.5936°E, valley of brook, hilly lowland tundra, on *Calliargon* sp., 17.08.2019, NS (MAG 5229).

*Armillaria gallica* Marxm. et Romagn. – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* vicinity of Magadan city, Nagaev microdistrict, 59.5674°N, 150.7571°E, forest with *Betula lanata* and *Duschekia fruticosa*, on dead wood of *Duschekia fruticosa*, 07.09.1999, NS (MAG 1143); same locality and habitat, 21.08.2006, NS (MAG 2586); vicinity of Magadan city, Solnechnyy microdistrict, 59.6444°N, 150.7815°E, ski slope, cutting in a *Betula* grove, on soil, 20.08.2002, NS (MAG 1804); vicinity of Magadan city, Novaya Veselaya microdistrict, valley of Kedrovyy klyuch brook, 59.5232°N, 150.8957°E, forest with *Betula lanata* and *Duschekia fruticosa*, on dead wood of *Duschekia fruticosa*, 06.09.2009, NS (MAG 2830); Srednekanskiy District, vicinity of Seymchan village, 62.9252°N, 152.4308°E, mixed forest, on stump of *Betula platy-*

*phylla* and on soil, 09.09.2017, coll. S. Yarysheva, det. NS (MAG 4809, MAG 4976).

*Baeospora myriadophylla* (Peck) Singer – new for Magadan Oblast.

Specimens examined: *Magadan Oblast:* Srednekanskiy District, upper Kolyma river, about 56 km downstream from Seymchan village, 63.1916°N, 152.5566°E, mixed forest, on dead mossy trunk of *Larix cajanderi*, 22.07.2016, NS (MAG 5037).

Notes: rare species, listed as vulnerable (VU) by IUCN (Krisai–Greilhuber, 2019).

*Bovistella utriformis* var. *lioui* (C.H. Chow) Demoulin et Rebriev – new for Kamchatka Krai.

Specimens examined: *Kamchatka Krai:* Ust-Kamchatskiy District, Elovka river basin, 56.6772°N, 160.5523°E, coniferous, predominantly *Picea* forest, on soil, 21.08.2003, coll. O. Chernyagina, det. EB (VLA 18206).

*Clavaria falcata* Pers. – new for Magadan Oblast and Kamchatka Krai.

Specimens examined: *Magadan Oblast:* Olskiy District, vicinity of Magadan city, 59.6591°N, 150.7588°E, southern slope of the hill, on soil shaded by tall herbs, 5.09.2002, AS [SVER(F) 17629]; *Kamchatka Krai:* Elizovskiy District, vicinity of Yelizovo town, 53.2074°N, 158.3535°E, *Betula* forest, on soil, 16.09.2015, AS [SVER(F) 67725].

*C. macounii* Peck – new for Sakhalin Oblast.

Specimens examined: *Sakhalin Oblast:* Nevelskiy District, vicinity of Shebunino village, 46.1634°N, 141.9233°E, shrub community of *Sasa kurilensis* s.l., *Quercus* sp., *Phellodendron* sp. and *Kalopanax* sp., on soil, 1.09.2007, AS [SVER(F) 50376].

*Clavicornia taxophila* (Thom) Doty – new for Sakhalin Oblast.

Specimens examined: *Sakhalin Oblast:* Korsakovskiy District, Tonino-Aniva Peninsula, vicinity of Novikovo village, 46.3687°N, 143.3918°E, mixed *Picea-Betula* forest with ferns, on well decayed litter, 23.08.2007, AS [SVER(F) 49918].

*Clavulinopsis helvola* (Pers.) Corner – new for Magadan Oblast.

Specimens examined: *Magadan Oblast:* Susumanskiy District, vicinity of Kadykchan village, 63.1139°N, 147.0713°N, southern slope of the hill, among mosses, 3.09.2005, AS (SVER(F) 17621).

*C. sulcata* Overeem – new for Sakhalin Oblast.

Specimens examined: *Sakhalin Oblast:* Nevelskiy District, Krilyon Peninsula, vicinity of Shebunino village, 46.1634°N, 141.9233°E, meadow, on soil under *Sasa kurilensis* s.l., 27.08.2007, AS [SVER(F) 49872].

*Cortinarius croceus* (Schaeff.) Gray – new for Magadan Oblast.

Specimens examined: *Magadan Oblast:* Khasynskiy District, Rangifer station, 60.6584°N, 152.0936°E, larch forest with *Pinus pumila*, *Betula middendorffii*, on

soil, 22.07.1984, NS (MAG 3191); same locality and habitat, 19.08.1984, NS (MAG 3192); Tenkinskiy District, upper Kolyma river, Orotuk station, 62.0509°N, 148.6443°E, forest with *Larix cajanderi*, *Pinus pumila* and *Betula middendorffii*, among mosses, 05.08.1996, coll. N. Sinelnikova, det. NS (MAG 3181).

*C. delibutus* Fr. – new for Magadan Oblast.

Specimens examined: *Magadan Oblast:* Khasynskiy District, Rangifer station, 60.6567°N, 152.0856°E, larch forest, on soil, 29.07.1984, NS (MAG 3185); Olskiy District, Zavyalov island, 59.0794°N, 150.6363°E, forest with *Betula lanata* and *Pinus pumila*, on soil, 13.08.2019, NS (MAG 5203).

*C. malachus* (Fr.) Fr. – new for Magadan Oblast.

Specimens examined: *Magadan Oblast:* Khasynskiy District, Rangifer station, 60.6584°N, 152.0936°E, *Larix* forest with *Pinus pumila* and *Betula middendorffii*, on soil, 23.08.1984, NS (MAG 3996); Srednekanskiy District, vicinity of Seymchan village, 62.9830°N, 152.3199°E, Seymchan river valley, mixed sparse forest with *Larix cajanderi*, *Pinus pumila* and *Betula middendorffii*, on soil, 29.08.2018, NS (MAG 5236).

*C. sphagnophilus* Peck – new for Magadan Oblast.

Specimens examined: *Magadan Oblast:* Olskiy District, vicinity of Chistoe lake, 59.5418°N, 151.7564°E, swampy sparse *Larix* forest with *Pinus pumila* and *Betula middendorffii*, among *Sphagnum* sp., 19.08.1990, NS (MAG 3184).

*C. trivialis* J.E. Lange – new for Magadan Oblast.

Specimens examined: *Magadan Oblast:* Tenkinskiy District, upper part of Kolyma river, Orotuk station, 62.0575°N, 148.6062°E, forest with *Populus tremula* on a slope, on soil, 25.07.2011, NS (MAG 3249).

*Deflexula fascicularis* (Bres. et Pat.) Corner – new for Sakhalin Oblast.

Specimens examined: *Sakhalin Oblast:* Korsakovskiy District, vicinity of Tonin Lighthouse, 46.8469°N, 143.4338°E, forest with *Quercus* sp., on fallen branches and trunks of *Quercus* sp., 19.08.2008, AS [SVER(F) 49921].

*Disciseda candida* (Schwein.) Lloyd – new for Amur Oblast.

Specimens examined: *Amur Oblast:* Zeyskiy District, vicinity of Zeya town, 53.7420°N, 127.2291°E, degraded pasture, on soil, 12.08.1958, coll. L. Vasilieva, det. YR (VLA 17847); vicinity of Blagoveshchensk city, 50.3173°N, 127.5215°E, degraded pasture, on soil, 01.08.1958, coll. L. Vasilieva, det. YR (VLA 18151).

*Hygrocybe acutoconica* (Clem.) Singer – new for Magadan Oblast.

Specimens examined: *Magadan Oblast:* Tenkinskiy District, upper Kolyma river, Orotuk station, 62.0581°N, 148.6044°E, steppe slope with *Dracocephalum* sp. and *Thymus* sp., on soil, 25.07.2011, NS (MAG 3245).

*Hygrophorus calophyllus* P. Karst. – new for Magadan Oblast.

Specimens examined: Magadan Oblast: Srednekanskiy District, vicinity of Seymchan village, 62.9816°N, 152.3201°E, Seymchan river valley, mixed sparse forest with *Larix cajanderi*, *Pinus pumila*, *Betula middendorffii*, on soil, 25.08.2013, coll. S. Yarysheva, det. NS (MAG 4605).

Notes: rare species, listed as endangered (EN) by IUCN (von Bonsdorff, 2019). According to Index Fungorum (accessed 14.04.2020) *Hygrophorus calophyllus* is the basionym of *Hygrophorus camarophyllus* var. *calophyllus* (P. Karst.) Konrad et Maubl.

*H. camarophyllus* (Alb. et Schwein.) Dumée, Grandjean et Maire – new for Magadan Oblast.

Specimens examined: Magadan Oblast: Srednekanskiy District, vicinity of Seymchan village, 62.9816°N, 152.3201°E, Seymchan river valley, mixed sparse forest with *Larix cajanderi*, *Pinus pumila*, *Betula middendorffii*, on soil, 12.08.2018, NS (MAG 5235).

*Lepista sordida* (Schumach.) Singer – new for Magadan Oblast.

Specimens examined: Magadan Oblast: Srednekanskiy District, vicinity of Seymchan village, 62.9252°N, 152.4308°E, mixed floodplain forest, on soil, 20.07.2017, coll. S. Yarysheva, det. NS (MAG 4896); same locality and habitat, on soil, 09.09.2017, coll. S. Yarysheva, det. NS (MAG 4976).

*Lycoperdon decipiens* Durieu et Mont. – new for Primorskiy Krai.

Specimens examined: Primorskiy Krai: Sikhote-Alinskiy Nature Reserve, Serebryanka river valley, 45.1127°N, 136.5433°E, on soil, 24.08.1957, coll. L. Vasilieva, det. P. Sosin (VLA 17932).

*L. excipuliforme* (Scop.) Pers. – new for Sakhalin Oblast.

Specimens examined: Sakhalin Oblast: Kunashir island, Yuzhno-Kurilskiy District, vicinities of Yuzhno-Kurilsk town, 44.0627°N, 145.8399°E, meadow, on soil, 21.09.1989, coll. A. Kovalenko, det. YR (LE 314845); Kunashir island, Kurils Nature Reserve, 44.0627°N, 145.8399°E, mixed forest, on litter, 17.09.1989, coll. A. Kovalenko, det. YR (LE 314846).

*L. molle* Pers. – new for Jewish Autonomous Oblast.

Specimens examined: Jewish Autonomous Oblast: Bastak Nature Reserve, upper reaches of the Ikura river, 49.1089°N, 133.0511°E, broadleaf forest, on soil, 23.08.2003, coll. EB, det. YR (VLA 18210); same locality, mixed forest, on rotten wood, 13.08.2000, coll. EB, det. YR (VLA 18268); Birobidzhanskiy District, vicinity of Zholtzi Yar village, 48.5360°N, 133.0303°E, deciduous *Quercus*-dominated forest, on soil, 27.07.2018, coll. E. Erofeeva, det. YR (YuR 3573).

*L. pratense* Pers. – new for Sakhalin Oblast.

Specimens examined: Sakhalin Oblast: Sakhalin island, Dolinskiy District, vicinity of Dolinsk town,

47.3399°N, 142.8067°E, coniferous forest with *Abies* sp., *Picea* sp., on soil, 29.08.1990, coll. EB, det. YR (VLA 21171); Sakhalin island, 51.7865°N, 142.6443°E, pasture, on soil, 24.09.1989, coll. A. Kovalenko, det. YR (LE 314873).

*L. radicum* Durieu et Mont. – new for Amur Oblast and Sakhalin Oblast.

Specimens examined: Amur Oblast: Oktyabrskiy District, Muhinskiy Natural Park, 50.5384°N, 127.6284°E, meadow, on soil, 16.09.2001, coll. N. Kochunova, det. YR (VLA 18286); Sakhalin Oblast: Iturup island, Kurilskiy District, vicinity of Kurilsk town, 45.0657°N, 147.8107°E, bamboo thickets, on soil, 08.10.1956, coll. E. Koval, det. YR (VLA 17969); same locality and habitat, on soil, 04.10.1956, coll. E. Koval, det. YR (VLA 21234).

*Mycenastrum corium* (Guers.) Desv. – new for Amur Oblast.

Specimens examined: Amur Oblast: Belogorskiy District, vicinity of Belogorsk town, 50.8835°N, 128.4990°E, on humus-rich soil, 01.09.1993, coll. Poddubny, det. YR (VLA 21205).

*Pholiota heteroclita* (Fr.) Quél. – new for Chukotka Autonomous Okrug and Magadan Oblast.

Specimens examined: Chukotka Autonomous Okrug: Anadyrskiy District, lower part of Bolshoy Kuybiveem river, 63.9439°N, 170.4188°E, mouth of Peschanaya river, forest with *Salix* and *Alnus*, on living *Alnus hirsuta*, 11.08.1987, NS (MAG 685); Magadan Oblast: Olskiy District, 136 km of Magadan-Talon road, 59.7595°N, 148.6445°E, deciduous forest in the floodplain of Tauy river, on living *Alnus hirsuta*, 29.08.2015, coll. O. Vokhmina, det. NS (MAG 4430).

*Physalacria lateriparies* X. He et F.Z. Xue – new for Primorskiy Krai.

Specimens examined: Primorskiy Krai: Ussuri Nature Reserve, valley of the brook, 43.6355°N, 132.2971°E, on fallen trunks of *Betula* and *Ulmus*, 21.08.2002, AS [SVER(F) 18735].

*P. sasae* S. Imai – new for Sakhalin Oblast.

Specimens examined: Sakhalin Oblast: Yuzhno-Kurilskiy District, Kunashir Island, 44.2815°N, 146.0394°E, subalpine shrubs with *Pinus pumila*, *Sasa kurilensis* s.l., on dead stems of *Sasa kurilensis*, 22.08.2008, AS [SVER(F) 51114].

*Ramariopsis kunzei* (Fr.) Corner – new for Kamchatka Krai.

Specimens examined: Kamchatka Krai: Elizovskiy District, vicinity of Yelizovo town, 53.2074°N, 158.3535°E, deciduous forest, on litter, 16.09.2015, AS (SVER(F) 67718).

*Pterula gracilis* (Desm. et Berk.) Corner – new for Kamchatka Krai.

Specimens examined: Kamchatka Krai: Elizovskiy District, vicinity of Petropavlovsk-Kamchatskiy city, 52.9273°N, 158.7161°E, in *Betula*-dominated forest,

on dead and decaying grasses, 17.09.2015, AS [SVER(F) 67753].

*Typhula capitata* (Pat.) Berthier – new for Kamchatka Krai.

Specimens examined: *Kamchatka Krai:* Elizovskiy District, Khalaktyrskiy Beach, 53.0272°N, 158.9062°N, *Betula*-dominated forest, on dead remnants of *Calamagrostis* sp., 15.09.2015, AS [SVER(F) 67704].

*T. caricina* P. Karst. – new for Kamchatka Krai.

Specimens examined: *Kamchatka Krai:* Elizovskiy District, vicinity of Petropavlovsk-Kamchatskiy city, 52.9273°N, 158.7161°E, floodplain vegetation, on dead leaves of *Carex* sp., 17.09.2015, AS [SVER(F) 67711].

*T. crassipes* Fuckel – new for Kamchatka Krai.

Specimens examined: *Kamchatka Krai:* Elizovskiy District, vicinity of Petropavlovsk-Kamchatskiy city, 52.9273°N, 158.7161°E, *Betula*-dominated forest, on dead leaves and stems of forbs and fallen deciduous trees, 17.09.2015, AS [SVER(F) 67701].

*T. culmigena* (Mont. et Fr.) Berthier – new for Kamchatka Krai.

Specimens examined: *Kamchatka Krai:* Ust-Kamchatskiy District, vicinity of Krutoberegovoye village, 56.2361°N, 162.7009°E, *Betula*-dominated forest, on dead stems of herbs and forbs, 28.08.2015, AS [SVER(F) 67654].

*T. curvispora* (Corner) Berthier – new for Kamchatka Krai.

Specimens examined: *Kamchatka Krai:* Elizovskiy District, vicinity of Petropavlovsk-Kamchatskiy city, 52.9273°N, 158.7161°E, river valley with tall grass vegetation, on dead stems of *Aconitum* sp., *Heracleum* sp. and *Polygonum* sp., 17.09.2015, AS [SVER(F) 67710].

*T. graminum* P. Karst. – new for Kamchatka Krai.

Specimens examined: *Kamchatka Krai:* Elizovskiy District, vicinity of Malka village, 53.3068°N, 157.5315°E, *Betula*-dominated forest, on dead leaves of *Calamagrostis* sp. and *Poa* sp., 16.09.2015, AS [SVER(F) 67697].

*T. hyalina* (Quél.) Berthier – new for Kamchatka Krai.

Specimens examined: *Kamchatka Krai:* Elizovskiy District, northern slope of Mutnovskiy volcano, 52.5662°N, 158.2269°E, on dead stems of grasses, 18.09.2015, AS [SVER(F) 67746].

*T. maritima* T. Hoshino, Takehashi et T. Kasuya – new for Sakhalin Oblast and Kamchatka Krai.

Specimens examined: *Sakhalin Oblast:* Nevelskiy District, Krilyon Peninsula, vicinity of Shebunino village, 46.1634°N, 141.9233°E, on sandy soil under forbs, 30.08.2007, AS (SVER(F) 50282); *Kamchatka Krai:* Elizovskiy District, Khalaktyrskiy Beach, 53.0272°N, 158.9062°E, on sandy soil under forbs, 15.09.2015, AS [SVER(F) 67710].

*T. micans* (Pers.) Berthier – new for Kamchatka Krai.

Specimens examined: *Kamchatka Krai:* Elizovskiy District, surrounds of Malka village, 53.3068°N, 157.5315°E, on dead stems of *Veronica* sp. and *Heracleum* sp., 15.09.2015, AS [SVER(F) 67739].

*T. sclerotoides* (Pers.) Fr. – new for Kamchatka Krai.

Specimens examined: *Kamchatka Krai:* Elizovskiy District, vicinity of Petropavlovsk-Kamchatskiy city, 52.9273°N, 158.7161°E, on dead stems of *Aconitum* sp. and *Heracleum* sp., 17.09.2015, AS [SVER(F) 67705].

*T. setipes* (Grev.) Berthier – new for Kamchatka Krai.

Specimens examined: *Kamchatka Krai:* Elizovskiy District, vicinity of Petropavlovsk-Kamchatskiy city, 52.9273°N, 158.7161°E, on dead leaves of *Betula* sp., 17.09.2015, AS [SVER(F) 67719].

*Zhuliangomyces illinitus* (Fr.) Redhead – new for Magadan Oblast.

Specimens examined: *Magadan Oblast:* vicinity of Magadan city, Nagaev microdistrict, 59.5685°N, 150.7605°E, forest with *Betula lanata* and *Pinus pumila*, on soil, 25.07.1999, NS (MAG 1093); same locality and habitat, among litter, 15.09.1998, NS (MAG 1094); same locality and habitat, among litter, 21.08.2006, NS (MAG 2573); vicinity of Magadan city, Novaya Veselaya microdistrict, valley of Kedrovyy Klyuch brook, 59.5235°N, 150.8962°E, forest with *Betula lanata*, on soil, 06.09.2009, NS (MAG 2838); vicinity of Magadan city, Snezhnaya Dolina village, 59.7232°N, 150.8744°E, valley of Dukcha river, forest with *Larix*, on soil, 27.08.2002, NS (MAG 1755); Srednekanskiy District, vicinity of Seymchan village, 62.9821°N, 152.3193°E, mixed forest with *Larix cajanderi*, *Betula platyphylla*, *Pinus pumila*, *Salix* sp., on soil, 29.08.2018, NS (MAG 5074).

#### Boletales

*Calostoma japonicum* Henn. – new for Primorskiy Krai and Jewish Autonomous Oblast; new for Russia.

Specimens examined: *Primorskiy Krai:* Kedrovaya Pad Nature Reserve, Gakkelevskiy Ridge, 43.0856°N, 131.5144°E, deciduous, predominantly *Quercus* forest, on soil, 11.10.1984, EB (VLA 17886); same locality and habitat, on soil, 09.10.1994, coll. EB, det. YR (VLA 17888); same locality and habitat, on soil, 22.09.1955, coll. L. Vasilieva, det. YR (VLA 17890); Kedrovaya Pad Nature Reserve, Right Bank of the Kedrovaya river, 43.0856°N, 131.5144°E, deciduous, predominantly *Quercus* forest, on soil, 01.10.1976, coll. M. Nazarova, det. YR (VLA 21129); *Jewish Autonomous Oblast:* Bastak Nature Reserve, 49.1089°N, 133.0511°E, deciduous forest, on soil, 08.2003, coll. EB, det. YR (VLA 18889).

*Leccinum albostipitatum* den Bakker et Noordel. – new for Magadan Oblast.

Specimens examined: *Magadan Oblast:* Tenkinskiy District, upper Kolyma river, Orotuk station, 62.0575°N, 148.6062°E, steppe slope, forest with *Populus tremula*, on soil, 25.07.2011, NS (MAG 3242).

*Psiloboletinus lariceti* (Singer) Singer – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* Srednekanskiy District, vicinity of Seymchan village, 62.9707°N, 152.3241°E, valley of Seymchan river, mixed forest with *Larix cajanderi*, *Betula platyphylla*, *Pinus pumila*, on soil, 14.08.2013, coll. S. Yarysheva, det. NS (MAG 4590); Srednekanskiy District, vicinity of Seymchan village, 62.9466°N, 152.3682°E, closed forest processing station, on a pile of compacted old sawdust of *Larix cajanderi*, 22.08.2016, coll. S. Yarysheva, det. NS (MAG 4507); Srednekanskiy District, vicinity of Seymchan village, 62.9785°N, 152.3186°E, near old abandoned quarry, on soil, 03.08.2017, coll. S. Yarysheva, det. NS (MAG 4891); Srednekanskiy District, vicinity of Seymchan village, 62.9707°N, 152.3241°E, mixed *Betula-Larix* forest, on soil, 29.08.2018, NS (MAG 5174); Srednekanskiy District, vicinity of Seymchan village, 62.9782°N, 152.3181°E, mixed *Betula-Larix* forest, on soil, 29.08.2018, NS (MAG 5103).

*Suillus acidus* (Peck) Singer – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* vicinity of Magadan city, vicinity of Snezhnaya Dolina village, 59.7377°N, 150.8752°E, forest with *Larix cajanderi*, *Pinus pumila* and *Betula middendorffii*, on soil, 12.08.1986, NS (MAG 806); vicinity of Magadan city, vicinity of Snezhnaya Dolina village, 59.7250°N, 150.8691°E, larch forest with *Pinus pumila*, 27.08.2002, NS (MAG 1975, MAG 1976); vicinity of Magadan city, ski resort, 59.6485°N, 150.7952°E, thickets with *Pinus pumila*, on soil, 20.08.2002, NS (MAG 1974); vicinity of Magadan city, 17th km of the federal highway Kolyma, 59.6788°N, 150.9137°E, forest with *Pinus sylvestris* and *P. pumila*, on soil, 01.09.2011, NS (MAG 3856); same locality, habitat and substrate, 59.6782°N, 150.9130°E, 17.09.2012, NS (MAG 3680); same locality, habitat and substrate, 59.6792°N, 150.9165°E, 23.08.2013, NS (MAG 3798, MAG 3799); same locality, habitat and substrate, 59.6792°N, 150.9140°E, 23.08.2013, NS (MAG 3867); same locality, habitat and substrate, 59.6790°N, 150.9125°E, 02.08.2013, NS (MAG 3866); same locality, habitat and substrate, 59.6802°N, 150.9142°E, 04.09.2013, NS (MAG 3865); Olskiy District, vicinity of Chistoe lake, 59.5768°N, 151.8264°E, *Larix* woodland with *Pinus pumila*, on soil, 13.08.1990, NS (MAG 1319); Olskiy District, vicinity of Glukhoye lake, 59.7311°N, 149.8974°E, forest with *Larix cajanderi*, *Pinus pumila* and *Betula middendorffii*, on soil, 05.09.1997, NS (MAG 1320); Olskiy District, Zavyalov island, shrubby tundra with *Pinus pumila*, on soil, 17.08.2019, NS (MAG 5184); Omsukchanskiy District, vicinity of Omsukchan village, 62.5010°N, 155.7662°E, thickets with *Pinus pumila*, 15.08.1999, coll. A. Livach, det. NS (MAG 1321); Srednekanskiy District, vicinity of Seymchan village, 62.9814°N, 152.3196°E, thickets with *Pinus pumila*, on soil, 03.08.2017, coll. S. Yarysheva, det. NS (MAG

4894); Srednekanskiy District, vicinity of Seymchan village, 62.9821°N, 152.3193°E, mixed forest with *Larix cajanderi*, *Betula platyphylla*, *Pinus pumila*, on soil, 12.08.2018, coll. S. Yarysheva, det. NS (MAG 5084); same locality, habitat and substrate, 29.08.2018, NS (MAG 5079); Tenkinskiy District, upper Kolyma river, Orotuk station, 62.0607°N, 148.6259°E, woodland with *Larix cajanderi* and *Pinus pumila*, on soil, 12.08.1995, coll. N. Sinelnikova, det. NS (MAG 1322); Khasynskiy District, Elekchan lakes, 60.7584°N, 151.7862°E, planted forest with *Pinus sylvestris* and *P. pumila*, on soil, 12.08.2015, NS (MAG 4295).

#### *Cantharellales*

*Rickenella swartzii* (Fr.) Kuyper – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* vicinity of Magadan city, Novaya Veselaya microdistrict, valley of Kedrovyy Klyuch brook, 59.5229°N, 150.8974°E, among brown and green mosses, 18.07.2015, NS (MAG 4361).

#### *Geastrales*

*Geastrum lageniforme* Vittad. – new for Jewish Autonomous Oblast.

**Specimens examined:** *Jewish Autonomous Oblast:* Bastak Nature Reserve, mount Chernukha, 49.1089°N, 133.0511°E, mixed forest with *Pinus koraiensis*, on litter, 17.08.2002, coll. EB, det. YR (VLA 17521).

*G. minimum* Schwein. – new for Khabarovsk Krai.

**Specimens examined:** *Khabarovsk Krai:* Komsomolsk Nature Reserve, 50.7500°N, 137.6524°E, on litter, 27.06.1985, EB (VLA 21210).

Notes: in Red Data Book of the Magadan Oblast, 2019.

*G. quadrifidum* Pers. – new for Primorskiy Krai; new for Russian Far East.

**Specimens examined:** *Primorskiy Krai:* Ussuriskiy Nature Reserve, Lobanov brook basin, 43.6358°N, 132.5270°E, mixed forest with *Picea* sp., on soil, 19.09.1975, M. Nazarova (VLA 21095); Shkotovskiy District, Shkotovo plateau, 43.3811°N, 132.7593°E, coniferous forest with *Abies* sp., *Picea* sp., on litter, 09.09.1947, coll. L. Vasilieva, det. YR (VLA 18013); Ussuriyskiy District, vicinity of Gorno-Tayezhnoe village, 43.6833°N, 132.1333°E, *Quercus*-dominated deciduous forest, on litter, 10.08.2018, YR (YuR 3519).

*G. triplex* Jungh. s.l. – new for Khabarovsk Krai and Jewish Autonomous Oblast.

**Specimens examined:** *Khabarovsk Krai:* Komsomolsk Nature Reserve, Bichi ranger station, 50.7500°N, 137.6524°E, deciduous *Quercus*-dominated forest, on litter, 08.1985, EB (VLA 21096); Nanaiskiy District, Anyuyskiy National Park, Gion Ridge, Gold pass, 49.4547°N, 136.8728°E, mixed forest with *Pinus koraiensis*, on soil, 20.08.2014, coll. E. Erofeeva, det. YR (YuR 3060); *Jewish Autonomous Oblast:* Bastak

Nature Reserve, 49.1089°N, 133.0511°E, broadleaf forest, on soil, 18.08.2009, EB (VLA 22330); vicinity of Birobidzhan city, 48.8108°N, 132.8636°E, edge of deciduous forest, on soil, 19.07.2013, coll. E. Erofeeva, det. YR (YuR 3065).

*Sphaerobolus ingoldii* Geml, D.D. Davis et Geiser – new for Amur Oblast and Primorskiy Krai; new for Asian part of Russia.

Specimens examined: *Amur Oblast:* Shimanovskiy District, vicinity of Shimanovsk town, 52.0252°N, 127.6985°E, mixed forest, on dung, 27.08.1958, coll. L. Vasilieva, det. YR (VLA 17824); *Primorskiy Krai:* Chuguevskiy District, Verhneussuriskiy research station, 44.0429°N, 134.0401°E, mixed forest, on soil, 05.09.1974, coll. EB, det. YR (VLA 17826).

### Gomphales

*Ceratellopsis equiseticola* (Boud.) Corner – new for Sakhalin Oblast.

Specimens examined: *Sakhalin Oblast:* Uglegorskiy District, vicinity of Tel'novskoye village, 49.3967°N, 142.1157°E, wet slope, on dead stems of *Equisetum* sp., 21.08.2007, AS [SVER(F) 49226].

*Ramaria campestris* (K. Yokoy. et Sagara) R.H. Petersen – new for Sakhalin Oblast.

Specimens examined: *Sakhalin Oblast:* Yuzhno-Kurilskiy District, Kunashir Island, Kurilskiy Nature Reserve, 43.8186°N, 145.5453°E, open *Quercus*-dominated forest, on soil among herbs, 25.08.2008, AS [SVER(F) 51009].

*R. caulifloriformis* (Leathers) Corner – new for Sakhalin Oblast.

Specimens examined: *Sakhalin Oblast:* Dolinskiy District, vicinity of Ostomysovka village, 47.2499°N, 134.0048°E, *Abies-Picea* dominated forest with *Acer* sp., *Betula* sp. and *Kalopanax* sp., on soil, 29.08.2008, AS [SVER(F) 51132].

*R. foetida* R.H. Petersen – new for Sakhalin Oblast.

Specimens examined: *Sakhalin Oblast:* Dolinskiy District, vicinity of Ostomysovka village, 47.2499°N, 134.0048°E, *Abies-Picea*-dominated forest with deciduous trees (*Quercus* sp., *Acer* sp. and *Corylus* sp.) on soil, 25.08.2007, AS [SVER(F) 49894].

### Hymenochaetales

*Trichaptum bifforme* (Fr.) Ryvarden – new for Magadan Oblast.

Specimens examined: *Magadan Oblast:* Srednekanskiy District, upper Kolyma river, mouth of Arangas river, 63.3470°N, 152.6827°E, *Betula-Larix* forest along the edge of a steppe slope, on dead wood of *Betula platyphylla*, 20.07.2016, NS (MAG 4456).

### Phallales

*Mutinus caninus* (Huds.) Fr. – new for Sakhalin Oblast.

Specimens examined: *Sakhalin Oblast:* Sakhalin island, Dolinskiy District, Bahura river valley, 47.2184°N, 142.9991°E, roadside, on humified wood, 21.07.2001, EB (VLA 16153); Sakhalin island, Dolinskiy District, Malyu Takoi river valley, 47.3153°N, 142.8388°E, deciduous forest, on soil, 20.07.2001, EB (VLA 16405); Sakhalin island, Dolinskiy District, vicinity of Dolinsk town, 47.3399°N, 142.8067°E, on soil, 02.09.1990, EB (VLA 18180).

Notes: in Red Data Book of the Amurskaya Oblast, 2019.

*Phallus flavocostatus* Kreisel – new for Primorskiy Krai; new for Russian Far East.

Specimens examined: *Primorskiy Krai:* Muravyov-Amurskiy Peninsula, Bogataya river valley, 43.2565°N, 132.1038°E, broadleaf forest, on soil, 02.10.1998, coll. EB, det. YR (VLA 18191).

*P. tenuis* (E. Fisch.) Kuntze – new for Primorskiy Krai and Khabarovsk Krai; new for Russian Far East.

Specimens examined: *Primorskiy Krai:* Chuguevskiy District, Verhneussuriskiy research station, 44.0429°N, 134.0401°E, coniferous forest dominated by *Pinus koraiensis*, on rotten conifer log, 21.08.1974, coll. EB, det. YR (VLA 18188); same locality and habitat, on soil, 06.08.1974, coll. EB, det. YR (VLA 18193); Shkotovskiy District, village Anisimovka, Litovka mountain, 43.1657°N, 132.7849°E, same locality and habitat, on soil, 15.07.1964, coll. M. Nazarova, det. YR (VLA 18192); *Khabarovsk Krai:* Bolshekhekhtsirskiy Nature Reserve, Bykova river valley, 48.2206°N, 134.9564°E, deciduous forest, on soil, 24.06.1981, coll. EB, det. YR (VLA 18189).

### Polyporales

*Xanthoporus syringae* (Parmasto) Audet – new for Chukotka Autonomous Okrug and Magadan Oblast.

Specimens examined: *Chukotka Autonomous Okrug:* Anadyrskiy District, abandoned Beringovskiy village, 63.0641°N, 179.3588°E, on soil under garbage, 30.08.2009, AS (A. Shiryaev 26905); *Magadan Oblast:* Magadan city, Nagaev microdistrict, 59.5616°N, 150.7858°E, wasteland, on soil, in places of old destroyed houses, 20.08.2008, NS (MAG 4621); Magadan city, Nagaev microdistrict, 59.5581°N, 150.7874°E, wasteland, on sand-pebble soil with garbage, 16.08.2018, NS (MAG 5230); vicinity of Magadan city, 59.6247°N, 150.9192°E, planted *Larix* square at the old airport, on soil, 08.08.1990, NS (MAG 1410); Tenkinskiy District, vicinity of Transportnyy village, 61.4937°N, 148.1949°E, gold mining dumps, young mixed forest with *Populus suaveolens*, *Larix cajanderi*, *Salix* spp., among litter, 17.08.2005, coll. D. Lysenko, det. NS (MAG 2034); Tenkinskiy District, 10 km southeast of Orotuk village, island in the floodplain Kolyma river, 62.0393°N, 148.6199°E, forest with *Populus suaveolens*, on soil, 10.08.2015, coll. N. Sinelnikova, det. NS (MAG 4343); Yagodninskiy District, upper part of Kolyma river, between the

mouthern mouths of Debin and Taskan rivers, 62.5840°N, 150.7270°E, floodplain forest, on soil, 08.09.2004, coll. O. Mochalova, det. NS (MAG 2035).

#### *Russulales*

*Lactarius aquizonatus* Kytöv. – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* Omsukchanskiy District, left bank of Oktyabrina river, 62.5646°N, 155.8493°E, old lingonberry forest with *Larix cajanderi* and *Betula middendorffii*, on soil, 09.08.1999, coll. A. Livach, det. NS (MAG 1470); Srednekanskiy District, vicinity of Seymchan village, mountain Lokatornaya, 63.0151°N, 152.1889°E, swampy forest with *Larix cajanderi*, *Pinus pumila*, *Betula middendorffii* and *Salix* sp., on soil, 14.08.1999 (MAG 1471); Srednekanskiy District, vicinity of Seymchan village, 63.0125°N, 152.2969°E, thickets with *Betula middendorffii* in mixed larch forest, on soil, 29.07.2013, coll. S. Yarysheva, det. NS (MAG 4594); Srednekanskiy District, vicinity of Seymchan village, 62.9822°N, 152.3198°E, *Larix* forest with *Pinus pumila* and *Betula middendorffii*, on soil, 23.08.2016, coll. S. Yarysheva, det. NS (MAG 4433); vicinity of Magadan city, Nagaev microdistrict, 59.5675°N, 150.7671°E, forest with *Betula lanata* and *Pinus pumila*, on soil, 04.09.2017, NS (MAG 4981); Olskiy District, Kavinskaya Valley Reserve, mixed forest with *Larix cajanderi*, *Betula platyphylla*, *B. middendorffii*, *Duschekia fruticosa*, on soil, 23.08.2017, NS (MAG 4999).

*Russula laricina* Velen. – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* Tenkinskiy District, upper Kolyma river, Orotuk station, 62.0589°N, 148.6051°E, mixed woodlands with *Larix cajanderi* and *Betula platyphylla* along the edge of a steppe slope, on soil, 25.07.2011, NS (MAG 3267).

*R. olivacea* (Schaeff.) Fr. – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* Olskiy District, Zavyalov island, mouth of Malaya Rechka brook, 59.0796°N, 150.6371°E, forest with *Betula lanata* and *Pinus pumila*, on soil, 15.08.2019, NS (MAG 5195).

*R. pectinatoides* Peck – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* vicinity of Magadan city, Nagaev microdistrict, 59.5698°N, 150.7557°E, forest with *Betula lanata* and *Pinus pumila*, on soil, 28.07.2016, NS (MAG 4468).

*R. sanguinea* Fr. – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* Olskiy District, vicinity of Glukhoye lake, 59.7276°N, 149.8938°E, woodland with *Larix cajanderi*, *Pinus pumila*, *Betula middendorffii*, on soil, 06.09.1996, NS (MAG 3156); vicinity of Magadan city, vicinity of Snezhnaya Dolina village, 59.7339°N, 150.8659°E, forest with *Pinus sylvestris*, *Pinus pumila* and *Betula middendorffii*, on soil, 23.08.2013, NS (MAG 3790).

*R. virescens* (Schaeff.) Fr. – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* vicinity of Magadan city, Nagaev microdistrict, 59.5699°N, 150.7623°E, forest with *Betula lanata* and *Pinus pumila*, on soil, 28.07.2016, NS (MAG 4469).

#### *Thelephorales*

*Phellodon fuligineoalbus* (J.C. Schmidt) R.E. Baird – new for Magadan Oblast.

**Specimens examined:** *Magadan Oblast:* Tenkinskiy District, upper Kolyma river, Orotuk station, 62.0575°N, 148.6116°E, mixed woodlands with *Larix cajanderi*, *Pinus pumila*, *Betula middendorffii* along the edge of a steppe slope, 25.07.2011, NS (MAG 4497).

*Polyozellus multiplex* (Underw.) Murrill – new for Sakhalin Oblast.

**Specimens examined:** *Sakhalin Oblast:* Dolinskiy District, vicinity of Ostromysovka village, 47.2499°N, 134.0048°E, *Abies-Picea* forest, on soil, 25.08.2007, AS (A. Shiryaev 9742).

A total of 76 species of macromycetes are reported as new for the Russian Far East: 3 belong to the *Ascomycota* and 73 – to the *Basidiomycota*.

Six species (*Ascocoryne turficola*, *Morchella semilibera*, *M. crassipes*, *Geastrum quadrifidum*, *Phallus flavocostatus* and *P. tenuis*) are reported for the first time for the Russian Far East. The first record of *Sphaerobolus ingoldii* in Asian Russia is reported, and *Calostoma japonicum* is new for Russia.

The distribution of the new records of macromycetes within the regions is as follows:

- 4 – new for Amur Oblast;
- 3 – Chukotka Autonomous Okrug;
- 15 – Kamchatka Krai;
- 3 – Khabarovsk Krai;
- 34 – Magadan Oblast;
- 7 – Primorskiy Krai;
- 15 – Sakhalin Oblast;
- 4 – Jewish Autonomous Oblast.

*Baeospora myriadophylla* and *Hygrophorus calophyllus* are in IUCN Red List, *Geastrum minimum* is in Red Data Book of the Magadan Oblast (2019) and *Mutinus caninus* is in Red Data Book of the Amurskaya Oblast (2019).

The studies on fungal diversity in the Far Eastern regions of Russia will be continued.

The work of Yu. Rebriev was carried out within the frame of government assignments for the South Science Center RAS (project AAAA-A19-119011190176-7 “Structural and functional organization and dynamics of plane landscape biocoenoses of the south part of Russia in the conditions of climate change and anthropogenic impact”). The research of N. Sazanova was carried out within the frame of government assignments for Institute of Biological Problems of the North



FEB RAS (project AAAA-A17-117122590002-0 “Inventory and classification of taxonomic and spatial diversity of plants and plant communities of the Far East North of Russia”). A. Shiryayev’s research was supported by a grant from the Russian Foundation for Basic Research (project № 18-05-00398A). This work would notn’t be possible without fieldwork assistance and specimens loans from a number of colleagues: Svetlana A. Yarysheva, Dr. Olga A. Mochalova, Dr. Nadezhda V. Sinelnikova, Olga N. Vokhmina, Anton E. Livach, Vitaliy V. Pospekhov, Dr. Dmitriy S. Lysenko and Dr. Elena A. Erofeeva.

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## Новые для регионов Российского Дальнего Востока виды макромицетов. 1

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Статья начинается серию публикаций о находках новых для Дальневосточного региона видов макромицетов. Российский Дальний Восток является значительной по площади территорией с очень своеобразной и интересной биотой. В ходе микологических исследований накоплен большой материал о видовом разнообразии грибов, включая макромицеты. Существенная часть этих данных еще не опубликована. В статье кратко изложены важнейшие моменты изучения дальневосточной микобиоты. Приведены данные о 76 видах базидиальных и сумчатых макромицетов, ранее не указываемых для отдельных административных единиц Дальнего Востока (Амурской, Магаданской, Сахалинской областей, Камчатского, Приморского, Хабаровского краев, Чукотского Автономного округа и Еврейской Автономной обл.). Даны сведения о конкретных местонахождениях, местообитаниях, субстратах, дате сбора находок, с указанием гербарных номеров образцов. Цитируемый материал хранится в микологических коллекциях VLA (Владивосток), MAG (Магадан), SVER (Екатеринбург), LE (Санкт-Петербург) и в личных коллекциях Ю. Ребриева (YuR – Ростов-на-Дону) и А. Ширяева (A. Shiryaev). *Ascocoryne turficola*, *Morchella semilibera*, *M. crassipes*, *Geastrum quadrifidum*, *Phallus flavocostatus* и *P. tenuis* отмечены впервые для Дальнего Востока России. *Sphaerobolus ingoldii* указывается впервые в Азиатской части России, *Calostoma japonicum* – новый вид для России.

**Ключевые слова:** аскомицеты, базидиомицеты, биоразнообразие, макромицеты, распространение грибов, Россия