

Lichenicolous fungi from Russia, mainly from its Arctic. II*

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Abstract. 67 species in 44 genera of lichenicolous fungi and lichens are reported from Russia, of which 44 species are from its Arctic. The new combination *Sphaerellothecium icmadophilae* (R. Sant.) Zhurb. is introduced. *Cercidospora verrucosaria*, *Lettauia cladoniicola*, *Sphaerellothecium icmadophilae*, and *Stigmidium collematis* are new to the Arctic. *Lichenochora constrictella*, *Lichenopeltella cladoniarum*, *Marchandiomyces corallinus*, *Sphaerellothecium icmadophilae*, *Stigmidium collematis*, *S. leucophlebiae*, and *Thamnogalla crombiei* are new to Russia and Asia. Another five species are new to the Russian Arctic, four species new to Siberia and 18 species new to various Russian provinces. Five lichen genera and nine lichen species are new hosts to various species of lichenicolous fungi.

Key words: Arctic, lichenicolous mycota, new combination, new distribution records, new lichen hosts, Russia, *Sphaerellothecium*

Introduction

Knowledge on lichenicolous fungi of Russia has recently been summarized in their first checklist, enumerating 276 species in 97 genera (Zhurbenko 2007). However lichenicolous mycota of the country is far from being sufficiently revealed and the present contribution adds another seven species and two genera new to Russia. Some species of obligate or optional lichenicolous lichens are also included in the treatment.

Materials and Methods

The material was examined by standard microscopic techniques using microscopes MBS-1 and Mikromed-2. Preparations were mounted in water, 10 % KOH, 1 % solution of Brilliant Cresyl blue (BCr) or Congo red. The estimated values of the size and length/breadth ratio (l/b) of the ascospores have been given as: (min–){ \bar{X} -SD}{- \bar{X} +SD}{(-max)}, where min and max are the extreme values, \bar{X} the arithmetic mean, and SD the corresponding standard deviation. Sizes of the ascospores were rounded to the nearest 0.5 μ m. Nomenclature mostly

follows *Index Fungorum* (2008). Most specimens examined are housed in herbarium of the Komarov Botanical Institute in St.-Petersburg (LE) and a few in herbarium of the Botanische Staatssammlung München (M).

Main collecting regions in Russia (Fig. 1)

Khibiny Mts. Murmansk Region, Kola Peninsula; boreal mountains with taiga forest, subalpine and alpine mountain belts.

Bol'shezemel'skaya tundra, Khar'yaga. Nenetskii Avtonomnyi Okrug; southern tundra.

Polar Ural. Tyumen' Region, Western Siberia, Yamalo-Nenetskii Avtonomnyi Okrug; subarctic mountains with taiga forest, subalpine and alpine mountain belts.

Taimyr Peninsula. Krasnoyarsk Territory, Central Siberia; southern tundra (Pyasino Lake), typical tundra (Sibir'yakova Is., Ragozinka River, Byrranga Mts.), arctic and oroarctic tundras (Uboinaya River, Byrranga Mts.).

Severnaya Zemlya Archipelago. Krasnoyarsk Territory, Central Siberia; polar desert.

Wrangel' Is. Chukotskii Avtonomnyi Okrug; arctic tundra.

*The preceding paper on lichenicolous fungi from the Russian Arctic was published by Zhurbenko & Santesson (1996).

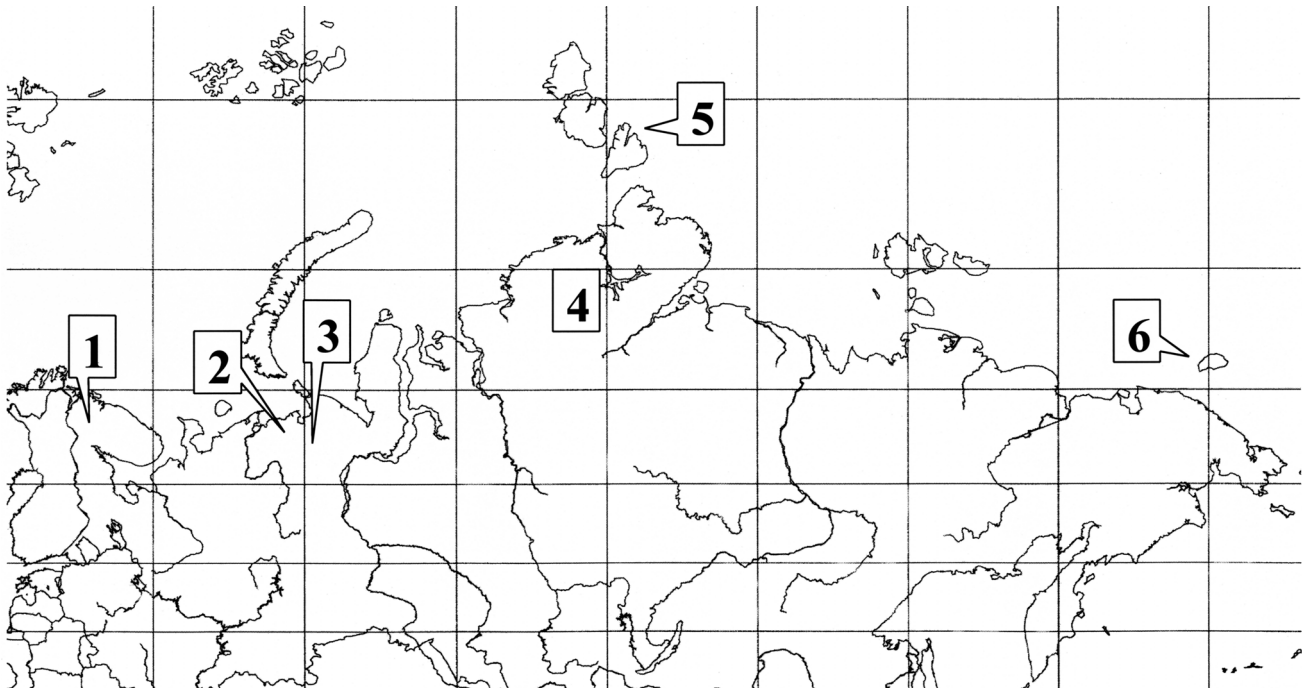


Fig. 1. Main collecting regions in Russia: 1 – Khibiny Mts., 2 – Bol'shezemel'skaya tundra, Khar'yaga, 3 – Polar Ural, 4 – Taimyr Peninsula, 5 – Severnaya Zemlya Archipelago, 6 – Wrangel' Is.

Annotated species list

Abbreviation: M.Z. – Mikhail Zhurbenko

* = lichenized, at least at later stages of life cycle

Abrothallus bertianus De Not. – Polar Ural, Rai-Iz Mt., 66°57' N, 65°39' E, alt. 150 m, on *Melanelia panniformis* (Nyl.) Essl. (thallus), 27 Jun 1993, M.Z. 93 127 (LE 232 176). New to Siberia, also the first verified report for the Russian Subarctic. *Melanelia panniformis* is a new host species.

A. caeruleus Kotte – Polar Ural, Rai-Iz Mt., 66°57' N, 65°39' E, alt. 150 m, on *Xanthoparmelia stenophylla* (Ach.) Ahti & D. Hawksw. (thallus), 27 Jun 1993, M.Z. 93 126a (LE 232 153). New to Tyumen' Region and Russian Subarctic.

A. parmeliarum (Sommerf.) Arnold – Polar Ural, Rai-Iz Mt., 66°57' N, 65°39' E, alt. 150 m, on *Parmelia sulcata* Taylor (thallus), 27 Jun 1993, M.Z. 93 119a (LE 232 158a).

A. succicus (Kirschst.) Nordin – Polar Ural, Rai-Iz Mt., 66°57' N, 65°39' E, alt. 150 m, on *Ramalina pollinaria* (Westr.) Ach. (thallus), 27 Jun 1993, M.Z. 93 124 (LE 232 143). New to Siberia and Russian Subarctic. It seems that previously only anamorph of the species [*Vouauxiomyces ramalinae* (Nordin) D. Hawksw.] has been reported on *Ramalina pollinaria* (Berger 1996).

Arthonia clemens (Tul.) Th. Fr. – Wrangel' Is., Sovetskaya River, 71°08' N, 178°55' E, alt. 170 m, on saxicolous

Lecanora sp. (apothecia), 1991, S. Kholod (LE 210 426). New to Chukotskii Avtonomnyi Okrug.

A. excentrica Th. Fr. – Severnaya Zemlya Archipelago, Bol'shevik Is., Cape Baranova, 79°16' N, 101°40' E, alt. 20 m, on *Lepraria gelida* Tønsberg & Zhurb. (thallus), 15 Jul 1996, M.Z. 96 868 (LE 232 192); same island, Bazovaya River, 79°04' N, 102°45' E, alt. 20 m, on *L. gelida* (thallus), 17 Jul 1996, M.Z. 96 867 (LE 232 793); same island, Cape Antseva, 78°12' N, 103°17' E, alt. 20 m, on *L. gelida* (thallus), 5 Aug 1997, N. Matveeva, plot 3 (LE 207 739). – Wrangel' Is., Gusinaya River, 71°07' N, 179°09' E, alt. 120 m, on *L. neglecta* (Nyl.) Erichsen (thallus), 5 Aug 1991, S. Kholod (LE 210 398); same island, Neizvestnaya River, 71°13' N, 179°19' W, alt. 120 m, on *L. neglecta* (thallus), 26 Jul 1987, S. Kholod (LE 210 415). New to Chukotskii Avtonomnyi Okrug. *Lepraria gelida* is a new host species. *Arthonia excentrica* reported from *Leprocaulon* cfr. *subalbicans* (Lamb) Lamb & Ward (Karatygin *et al.* 1999) actually also grew on *Lepraria gelida*.

A. molendoi (Frauenf.) R. Sant. – Wrangel' Is., Gusinaya River, 71°07' N, 179°12' E, alt. 90 m, on *Xanthoria elegans* (Link) Th. Fr. (apothecia), 1991, V. Shtrik (LE 210 458b); same island, Sovetskaya River, 71°08' N, 178°55' E, alt. 170 m, on *X. elegans* (thallus), 1991, S. Kholod (LE 210 395). New to the Russian Arctic.

A. peltigerina (Almq.) H. Olivier – Severnaya Zemlya Archipelago, Bolshevik Is., Cape Antseva, 78°12' N,

103°17' E, alt. 20 m, on *Solorina crocea* (L.) Ach. (thallus: underside of lobe margins), 19 Jul 2000, N. Matveeva (LE 210 406). – Wrangel' Is., Neizvestnaya River, c. 71°13' N, 179°15' W, alt. 190 m, on *Peltigera* sp. (thallus: lobe margins), 23 Aug 1987, S. Kholod (LE 210 417).

Asterophoma mazaediicola D. Hawksw. – Siberia, Buryatiya Republic, Baikal Lake, Barguzin Range, 30 km E of Davsha, 54°20' N, 110°00' E, elev. 700 m, on bark of *Pinus sibirica*, in apothecia of *Chaenothecopsis pusilla* (Ach.) A.F.W. Schmidt, 23 Jul 1983, A. Titov 571 (LE 232 689) [det. L. Tibell, 1990].

Bachmanniomyces uncialicola (Zopf) D. Hawksw. – Bol'shezemel'skaya tundra, Khar'yaga, 67°11' N, 56°30' E, alt. 60 m, on *Cladonia stygia* (Fr.) Ruoss (podetia), 24 Jul 2007, M.Z. 0737 (LE 210 440); same place, on *C. gracilis* (L.) Willd. (podetia), 24 Jul 2007, M.Z. 0738 (LE 210 500); same place, on *C. stellaris* (Opiz) Pouzar & Vězda, 25 Jul 2007, M.Z. s. n. – Wrangel' Is., Sovetskaya River, 71°07' N, 179°02' E, alt. 180 m, on *C. stygia* (upper parts of podetia), 1991, S. Kholod (LE 210 385). New to Nenetskii and Chukotskii Avtonomnyi Okrugs. *Cladonia stygia* is a new host species.

Carbonea supersparsa (Nyl.) Hertel – Polar Ural, 129 km of the railway Vorkuta-Labytnangi, 66°59' N, 65°45' E, alt. 300 m, on *Lecanora intricata* (Schrad.) Ach. (thallus), 24 Jul 1986, M.Z. 86 110 (LE 232 136). New to Tyumen' Region.

C. vitellinaria (Nyl.) Hertel – Polar Ural, Rai-Iz Mt., 66°57' N, 65°39' E, alt. 250 m, on *Candelariella vitellina* (Hoffm.) Müll. Arg. (thallus), 27 Jun 1993, M.Z. 93 137 (LE 232 135).

Cercidospora punctillata (Nyl.) R. Sant. s. l. – Severnaya Zemlya Archipelago, Oktyabr'skoi Revolutsii Is., Cape Massivnyi, 78°49' N, 99°29' E, alt. 10 m, on *Solorina crocea* (apothecia, thallus), 16 Aug 2007, M. Gavrilov (LE 232 107); same island, Golysheva River, 78°34' N, 104°30' E, alt. 320 m, on *Micarea incrassata* Hedl. (thallus), 7 Aug 2000, N. Matveeva (LE 232 152); same place, on *S. crocea* (apothecia, thallus), 7 Aug 2000, N. Matveeva (LE 232 130); same locality, 78°26' N, 104°28' E, alt. 170 m, on *Buellia papillata* (Sommerf.) Tuck. (bleached thallus), 7 Aug 2000, N. Matveeva (LE 232 145). – Wrangel' Is., Krasnyi Flag River, 71°29' N, 178°53' W, alt. 15 m, on *S. crocea* (thallus), 1 Sep 1997, S. Kholod (LE 210 375); same island, Pravaya Gusinaya River, 71°08' N, 179°15' E, alt. 80 m, on decayed unidentified lichen crust over mosses, 9 Sep 1991, S. Kholod (LE 210 448); same island, Klark River, 71°05' N, 178°16' W, alt. 110 m, on *S. crocea* (thallus), 1998, S. Kholod (LE 210 400); same island, Western Plateau, 71°02' N, 179°01' E, alt. 380 m, on *S. crocea* (thallus), 1992, S. Kholod (LE 210 359). In specimen LE 210 375 numerous one-celled green

algae (cells ellipsoid, ca 6 × 2 µm) were observed in old perithecia of the fungus. *Buellia* and *Micarea* are new host genera.

C. soror Obermayer & Triebel – Severnaya Zemlya Archipelago, Bol'shevik Is., Bazovaya River, 79°01' N, 102°43' E, alt. 60 m, on *Arthrorhaphis* sp. (thallus), 16 Jul 1996, M.Z. 96 753 (LE 210 320).

C. thamnoliicola Ihlen – Severnaya Zemlya Archipelago, Bol'shevik Is., Mikoyan Bay, 79°18' N, 101°55' E, alt. 20 m, on *Thamnozia vermicularis* (Sw.) Schaer. var. *subuliformis* (Ehrh.) Schaer. (thallus), 21 Jul 1996, M.Z. 96 561 (LE 210 306).

C. verrucosaria (Linds.) Arnold – Severnaya Zemlya Archipelago, Bol'shevik Is., Ostantsovaya River, 79°13' N, 102°02' E, alt. 40 m, on *Megaspora verrucosa* (Ach.) Hafellner & V. Wirth (apothecia, thallus), M.Z. 96 871 (LE 232 646). Ascospores (16–) 16.5–18.5–20.5 (–23) × 5–5.5 (–6) µm, l/b = 3.0–3.4–3.9 (–4.6) ($n = 20$, in water), overlapping biseriolate in an ascus. Asci 70–90 × 10–11 µm, 8-spored. The species might include several entities differing in ascospore sizes and number of spores per ascus (Navarro-Rosines *et al.* 2004). New to the Arctic and Siberia.

Corticifraga fuckelii (Rehm) D. Hawksw. & R. Sant. – Khibiny Mts., Kaskasnyunjok stream, 67°46' N, 33°49' W, tundra, on *Peltigera rufescens* (Weiss) Humb. (thallus), 18 Aug 2007, M.Z. 0762 (LE 210 467).

C. peltigerae (Fuckel) D. Hawksw. & R. Sant. – Bol'shezemel'skaya tundra, Khar'yaga, 67°08' N, 56°47' E, alt. 70 m, on *Peltigera scabrosa* Th. Fr. (thallus), M.Z. 0725 (LE 210 418). – Taimyr Peninsula, Byrranga Mts., Bol'shaya Bootankaga River, 74°17' N, 98°04' E, alt. 300 m, on *Solorina crocea* (apothecia, thallus), 8 Jul 1991, V. Kuvaev (LE 210 366). New to Nenetskii Avtonomnyi Okrug.

Dactylospora amygdalariae Triebel – Polar Ural, 129 km of the railway Vorkuta-Labytnangi, 66°59' N, 65°45' E, alt. 250 m, on *Amygdalaria panaeola* (Ach.) Hertel & Brodo (thallus, cephalodia), 13 Jul 1986, M.Z. 86 128 (LE 232 127).

D. deminuta (Th. Fr.) Triebel – Severnaya Zemlya Archipelago, Bol'shevik Is., Bazovaya River, 79°04' N, 102°41' E, alt. 40 m, on *Pilophorus dovrensis* (Nyl.) Timdal, Hertel & Rambold (thallus), 18 Jul 1996, M.Z. 96 750 (LE 232 106); same island, Mikoian Bay, 79°18' N, 101°55' E, alt. 10 m, on sterile lichen on soil (thallus), M.Z. 96 539 (LE 232 112); same island, Cape Antseva, 78°12' N, 103°17' E, alt. 10 m, on *Lopadium coralloideum* (Nyl.) Lynge, 23 Jul 2000, N. Matveeva (LE 232 132); same locality, alt. 40 m, on *Lecanora epibryon* (Ach.) Ach. (thallus, apothecia), 20 Jul 2000, N. Matveeva (LE 232 132). – Siberia, Sakha-Yakutiya Republic, Lena River delta, Olenek channel, Chai-Tumus, 72°20' N, 125°40' E, alt. 20 m, spotty dwarf shrub-lichen-moss tundra, on *L. epibryon* (thallus),

- 6 Aug 1998, M.Z. 98 256 (LE 232 763). – Wrangel' Is., Gusinaya River, 71°07' N, 179°20' E, alt. 170 m, on *L. epibryon* (thallus), 19 Aug 1991, S. Kholod (LE 210 477); same island, Neizvestnaya River, 71°14' N, 179°18' W, alt. 130 m, on *L. epibryon* (thallus), 9 Aug 1987, S. Kholod (LE 210 419); same island, 71°12' N, 179°17' W, alt. 170 m, on sterile crustose lichen on mosses (thallus), 15 Jul 1987, S. Kholod (LE 210 439); same island, Pravaya Gusinaya River, 71°09' N, 179°19' E, alt. 140 m, on *L. epibryon* (thallus), 1991, S. Kholod (LE 210 389); same island, Pik Tundroyvi, 71°19' N, 179°50' W, alt. 100 m, on *L. coralloideum* (thallus), 22 Aug 1995, S. Kholod (LE 210 339). *Pilophorus dovrensis* is a new host species.
- **Diplotomma nivalis* (Bagl. & Carestia) Hafellner – Severnaya Zemlya Archipelago, Oktyabr'skoi Revolutsii Is., Cape Vazhnyi, 79°27' N, 93°40' E, alt. 20 m, on *Xanthoria elegans* (thallus), 12 Jul 1985, M. Gavrilov (LE 232 181).
- Endococcus perpusillus* Nyl. – Murmansk Region, Iolgi-Tundra, 67°12' N, 33°14' E, alt. 160 m, *Pinus-Picea* forest by a stream, on *Rhizocarpon lavatum* (Fr.) Hazsl. (thallus), 23 Jul 2001, I. Zhdanov (LE).
- E. propinquus* (Körb.) D. Hawksw. – Murmansk Region, Okat'eva Tundra Mt., 67°05' N, 32°50' E, alt. 110 m, boulders in *Pinus* forest, on *Porpidia tuberculosa* (Sm.) Hertel & Knoph (thallus), 13 Jul 2001, I. Zhdanov (LE).
- Epicladonia sandstedei* (Zopf) D. Hawksw. – Khibiny Mts., Kaskasnyunjok stream, 67°46' N, 33°49' W, tundra, on *Cladonia gracilis* (podetia), 18 Aug 2007, M.Z. 0759 (LE 210 456). – Komi Republic, 61 km of the railway Vorkuta-Labytngangi, 67°02' N, 64°26' E, alt. 100 m, shrub tundra, on *C. pocillum* (Ach.) Grognot (basal squamules and podetia), 28 Jun 1993, M.Z. 93 218 (LE 232 190).
- E. stenospora* (Harm.) D. Hawksw. – Siberia, Yamal Peninsula, Laborovaya, 67°42' N, 68°02' E, sedge-prostrate dwarf-shrub-lichen tundra, on *Cladonia coccifera* (L.) Willd. (podetia), 18 Aug 2007, D. Walker (LE 210 488). New to Tyumen' Region. *Cladonia coccifera* is a new host species.
- **Epilichen glauconigellus* (Nyl.) Hafellner – Severnaya Zemlya Archipelago, Bol'shevik Is., Bazovaya River, 79°04' N, 102°41' E, alt. 40 m, on *Baeomyces* cf. *rufus* (Huds.) Rebent. (thallus), M.Z. 96 694 (LE 210 446). First verified report for Siberia.
- Illosporium carneum* Fr. – Bol'shezemel'skaya tundra, Khar'yaga, 67°11' N, 56°30' E, alt. 70 m, on *Peltigera didactyla* (With.) J. R. Laundon (thallus), 22, 25 Jul 2007, M.Z. 0726, 0724 (LE 210 396, LE 210 367). – Siberia, Altai Republic, Chulyshman upland, Kudeli Lake, 55°52' N, 88°35' E, alt. 1700 m, in *Pinus* forest, on *Peltigera* sp. (thallus), 10 Jun 1987, N.I. Zolotukhin (LE 207 388b). New to Nenetskii Avtonomnyi Okrug.
- Intralichen christiansenii* (D. Hawksw.) D. Hawksw. & M.S. Cole – Nenetskii Avtonomnyi Okrug, Novaya Zemlya, Ledyanay Gavan' Bay, Cape Medvezhii, 76°15' N, 68°15' E, on *Rinodina roscida* (Sommerf.) Arnold (apothecia: hymenium), 28 Aug 1995, A. Kuliev (LE 232 150b). New to Nenetskii Avtonomnyi Okrug. *Rinodina roscida* is a new host species.
- I. lichenicola* (M.S. Christ. & D. Hawksw.) D. Hawksw. & M.S. Cole – Severnaya Zemlya Archipelago, Oktyabr'skoi Revolutsii Is., Cape Vazhnyi, 79°27' N, 93°40' E, alt. 20 m, on *Candelariella aurella* (Hoffm.) Zahlbr. (apothecia), 12 Jul 1985, M. Gavrilov (LE 210 350).
- Karsteniomyces tuberculosus* Alstrup & D. Hawksw. – Komi Republic, Northern Ural, Pechora River, 62°06' N, 58°25' E, alt. 170 m, rocks in taiga, on *Peltigera leucophlebia* (Nyl.) Gyelnik (thallus: upper surface), 8 Jul 1997, M.Z. 97 256b (LE 210 239b).
- **Lecanora leptacinella* Nyl. – Taimyr Peninsula, Byrranga Mts., Bol'shaya Bootankaga River, 74°17' N, 98°04' E, alt. 360 m, on *Sphaerophorus globosus* (Huds.) Vain. (thallus: mostly on bleached parts), 22 Jul 1991, V. Kuvaev (LE 232 155b). – Severnaya Zemlya Archipelago, Oktyabr'skoi Revolutsii Is., Cape Massivnyi, 78°49' N, 99°29' E, alt. 10 m, on decayed thalli of *Cladonia coccifera* s. l. and *Sphaerophorus fragilis* (L.) Pers., 16 Aug 2007, M. Gavrilov (LE 210 459). This inconspicuous lichen that is not uncommon in the Arctic grows on plant remnants including moribund lichens.
- Lecidea cetrariicola* Linds. [as 'cetraricola'], syn. *Nesolechia cetrariicola* (Linds.) Arnold – Khibiny Mts., Kaskasnyunjok stream, 67°46' N, 33°49' W, tundra, on *Cetraria islandica* (L.) Ach. (both sides of lobes), 18 Aug 2007, M.Z. 0769 (LE 232 165). The fungus is known from a few reports from Denmark, Norway, Scotland, and Russia (Keissler 1930; Zhurbenko & Hafellner 1999; Zhurbenko 2001).
- Lettauia cladoniicola* D. Hawksw. & R. Sant. – Bol'shezemel'skaya tundra, Khar'yaga, 67°11' N, 56°30' E, alt. 70 m, on *Cladonia rangiferina* (L.) F.H. Wigg. (podetia), 25 Jul 2007, M.Z. 0735 (LE 210 357). New to the Arctic.
- Lichenochora constrictella* (Müll. Arg.) Hafellner – Severnaya Zemlya Archipelago, Bol'shevik Is., Bazovaya River, 79°04' N, 102°45' E, alt. 10 m, on *Fulgensia bracteata* (Hoffm.) Räsänen (thallus), 17 Jul 1996, M.Z. 96 731 (LE 232 180). New to Russia.
- Lichenocodium lecanorae* (Jaap) D. Hawksw. – Taimyr Peninsula, Sibiryakova Is., 73°02' N, 79°05' E, alt. 10 m, on *Sphaerophorus globosus* (bleached portions of thallus), 17 Jul 1990, V. Kuvaev (LE 232 677a); same island, 72°43' N, 79°05' E, alt. 10 m, on *S. globosus* (decayed

tips of branches), 18 Jul 1989, V. Kuvaev (LE 232 669). – Chukotskii Avtonomnyi Okrug, Kolyuchin Is., 67°28' N, 174°38' W, alt. 10 m, on *S. globosus* (decaying tips of branches), 5 Aug 1965, T. Plieva (LE 232 700). New to Chukotskii Avtonomnyi Okrug. *Sphaerophorus* is a new host genus.

Lichenopeltella cladoniarum E.S. Hansen & Alstrup – Bol'shezemel'skaya tundra, Khar'yaga, 67°11' N, 56°30' E, alt. 70 m, on *Cladonia arbuscula* (Wallr.) Flotow (thallus), 25 Jul 2007, M.Z. 0743 (LE 210 390). New to Russia. The fungus on *Stereocaulon rivulorum* H. Magn. reported as *Lichenopeltella cladoniarum* (Zhurbenko 2001) actually belongs to an undescribed species of *Lichenopeltella*.

Lichenosticta alcicornaria (Linds.) D. Hawksw. – Bol'shezemel'skaya tundra, Khar'yaga, 67°11' N, 56°44' E, alt. 70 m, on *Cladonia gracilis* (podetia), 21 Jul 2007, M.Z. 0741 (LE 210 378); same locality, 67°08' N, 56°47' E, alt. 70 m, on *C. cornuta* (L.) Hoffm. (podetia), 22 Jul 2007, M.Z. 0740a (LE 210 435a); same locality, 67°11' N, 56°30' E, alt. 60 m, on *C. gracilis* (podetia), 24 Jul 2007, M.Z. 0732 (LE 210 420). – Siberia, Yamal Peninsula, Laborovaya, 67°42' N, 68°02' E, sedge-prostrate dwarf-shrub-lichen tundra, on *C. coccifera* (basal squamules and podetia), 17 Aug 2007, D. Walker (LE 210 475). New to Siberia. *Cladonia coccifera* is a new host species.

Marchandiomyces corallinus (Roberge) Diederich & D. Hawksw., syn. *Illosporium corallinum* Roberge – Siberia, Buryatiya Republic, Baikal Lake, Khamar-Daban Range, Anosovka River, 51°30' N, 105°07' E, alt. 700 m, taiga forest, on *Lecanora* sp. (apothecia) on bark of *Pinus sibirica*, 26 Aug 1996, I. Urbanavichene (LE 232 634) [rev. P. Diederich, 1998]. New genus and species to Russia.

Merismatium coccisporum (Norman) Vouaux – Siberia, Sakha-Yakutiya Republic, Silyapskii Range, Indigirka River near Predporozhnoe, 65°00' N, 143°10' E, alt. 480 m, on *Amygdalaria* sp. (thallus) 24 Jun 1976, I. Makarova (LE 207 128) [confirm. D. Triebel, 1997].

M. nigritlellum (Nyl.) Vouaux – Bol'shezemel'skaya tundra, Khar'yaga, 67°11' N, 56°30' E, alt. 60 m, on *Icmadophila ericetorum* (L.) Zahlbr. (thallus), 24 Jul 2007, M.Z. 0713 (LE 210 317). – Wrangel' Is., Neizvestnaya River, 71°12' N, 179°17' W, alt. 170 m, on sterile white crustose lichen on mosses (thallus), 15 Jul 1987, S. Kholod (LE 232 108). New to Nenetskii Avtonomnyi Okrug. *Icmadophila* is a new host genus.

Muellerella erratica (A. Massal.) Hafellner & V. John – Wrangel' Is., Gusinaya River basin, 71°07' N, 179°12' E, alt. 90 m, on *Xanthoria elegans* (thallus, apothecia), 1991, V. Shtrik, 1991 (LE 210 458a). New to Chukotskii Avtonomnyi Okrug.

M. lichenicola (Sommerf. : Fr.) D. Hawksw. – Chukotskii Avtonomnyi Okrug, Wrangel' Is., on *Xanthoria elegans* (thallus), 1991, V. Shtrik (LE 210 307); same island, its western coast, 71°08' N, 178°49' E, alt. 50 m, on *X. elegans* (apothecia, thallus), 24 Aug 1991, S. Kholod (LE 210 476); same okrug, Chukchi Peninsula, Inchoun settlement, 66°15' N, 170°20' W, on *Lecidea lapicida* (Ach.) Ach. (thallus), 29 Jul 1975, I. Makarova (LE 207 229a) [confirm. D. Triebel, 1997].

M. ventosicola (Mudd) D. Hawksw. – Polar Ural, Rai-Iz Mt., 66°57' N, 65°39' E, alt. 250 m, on *Ophioparma ventosa* (L.) Norman (thallus), 27 Jun 1993, M.Z. 93 147 (LE 232 697).

Phacopsis fusca (Triebel & Rambold) Diederich – Polar Ural, Rai-Iz Mt., 66°57' N, 65°39' E, alt. 150 m, on *Xanthoparmelia stenophylla* (thallus), 27 Jun 1993, M.Z. 93 217a (LE 232 105). First verified report to Russia. Fungi on *Xanthoparmelia conspersa* (Ehrh. ex Ach.) Hale reported as *Phacopsis oxyspora* from Tuva in Siberia (Zhurbenko & Otnyukova 2001) also belong to this species.

P. oxyspora (Tul.) Triebel & Rambold var. *oxyspora* – Polar Ural, Rai-Iz Mt., 66°57' N, 65°39' E, alt. 150 m, on *Melanohalea infumata* (Nyl.) O. Blanco et al. (thallus), 27 Jun 1993, M.Z. 93 123 (LE 232 185); same place, on *Parmelia sulcata* (thallus), 27 Jun 1993, M.Z. 93 119b (LE 232 158b).

Phaeopyxis punctum (A. Massal.) Rambold, Triebel & Coppins – Siberia, Yamal Peninsula, Laborovaya, 67°42' N, 67°60' E, sedge-erect dwarf-shrub-moss tundra, on *Cladonia amaurocraea* (Flörke) Schaer. (thallus), 14 Aug 2007, D. Walker (LE 210 437). New to Tyumen' Region.

Phaeosporobolus alpinus R. Sant., Alstrup & D. Hawksw. – Murmansk Region, Pakhta-Yarvi, 69°26' N, 30°30' E, alt. 260 m, on *Sphaerophorus fragilis* (moribund thallus: mainly on naked medulla), 12 Aug 1965, A. Dombrovskaya (LE 232 786); same region, Kolvitsa, Klochikhinskaya Mt., 67°02' N, 32°56' E, alt. 500 m, mountain tundra, on *S. fragilis* (moribund thallus), 2 Jul 1988, T. Dudoreva (LE 232 575a). – Bol'shezemel'skaya tundra, Khar'yaga, 67°08' N, 56°47' E, alt. 70 m, on *Cladonia cornuta* (podetia), 22 Jul 2007, M.Z. 0740b (LE 210 435b). – Taimyr Peninsula, Uboinaya River, 73°39' N, 82°22' E, alt. 20 m, on *Sphaerophorus globosus* (mostly on naked medulla of eroded tips of branches, also on old decaying parts of thallus), 1 Aug 1990, M.Z. 901 005a (LE 232 730a); same peninsula, Ragozinka River, 72°48' N, 80°53' E, alt. 30 m, on *S. globosus* (on naked medulla of eroded tips of branches), 13 Jul 1990, M.Z. 901 002a (LE 232 144a). – Siberia, Sakha-Yakutiya Republic, Laptev Sea coast, Tiksi, 71°39' N, 128°44' E, alt. 100, on *S. fragilis* (on naked medulla of eroded tips of branches), 24 Aug 1998, M.Z. 98 265b (LE 232 649b). – Chukotskii Avtonomnyi Okrug, Sireniki, 64°28' N, 173°44' W, alt. 300 m, on *S. fragilis* (thallus),

8 Jul 1986, A. Katenin (LE 232 582). New to Nenetskii Avtonomnyi Okrug and Chukotskii Avtonomnyi Okrug. This species is very common in the Arctic, where it mostly grows on *Ochrolechia* and *Pertusaria* species. *Cladonia cornuta* is a new host species. *Phaeosporobolus alpinus* has previously been just once reported on *Sphaerophorus* (*S. globosus*) from Tierra del Fuego (Wedin 1994: 308).

Polycoccum bryontheae (Arnold) Vězda – Siberia, Sakha-Yakutiya Republic, Lena River delta, Olenek channel, Chai-Tumus, 72°20' N, 125°40' E, alt. 20 m, dwarf shrub-lichen-moss tundra, on *Lecanora epibryon* (discs of apothecia), 6 Aug 1998, M.Z. 9895 (LE 232 766). – Wrangel' Is., Neizvestnaya River, 71°11' N, 179°15' W, alt. 150 m, on *L. epibryon* (apothecia), 12 Aug 1987, S. Kholod (LE 210 408). New to the Russian Arctic.

Pronectria robergei (Mont. & Desm.) Lowen – Bol'shezemel'skaya tundra, Khar'yaga, 67°11' N, 56°30' E, alt. 70 m, on *Peltigera aphthosa* (L.) Willd. (upper and lower sides of lobes), 22, 25 Jul 2007, M.Z. 0728, 0727 (LE 210 346, LE 210 498). – Siberia, Altai Republic, Chulyshman upland, Kudeli Lake, 55°52' N, 88°35' E, alt. 1700 m, in *Pinus* forest, on *Peltigera* sp. (thallus), 10 Jun 1987, N.I. Zolotukhin (LE 207 388a). – Siberia, Buryatiya Republic, Baikal Lake, Khamar-Daban Range, Temnik River, 51°05' N, 104°55' E, alt. 1200 m, mossy rocks, on *Peltigera* sp. (thallus), 21 Jul 1994, G. Urbanavichyus (LE 207 389). New to the Russian Arctic.

Pyrenidium actinellum Nyl. – Chukotskii Avtonomnyi Okrug, Televeem River, 65°50' N, 175°05' E, alt. 500 m, tundra, on *Baeomyces rufus* (thallus), 19 Jul 1979, I. Makarova (LE 232 742). New to Chukotskii Avtonomnyi Okrug.

Raciborskiomyces peltigericola (D. Hawksw.) M.E. Barr – Bol'shezemel'skaya tundra, Khar'yaga, 67°11' N, 56°30' E, alt. 70 m, on *Peltigera malacea* (Ach.) Funck (thallus), 22 Jul 2007, M.Z. 0731 (LE 210 447). New to Nenetskii Avtonomnyi Okrug.

Rhymbocarpus neglectus (Vain.) Diederich & Etayo – Severnaya Zemlya Archipelago, Bol'shevik Is., Cape Baranova, 79°16' N, 101°40' E, alt. 20 m, on *Lepraria gelida* (thallus), 15 Jul 1996, M.Z. 96 873, 96 536 (LE 232 195, LE 210 480). The report of *Unguiculariopsis groenlandiae* (Alstrup & D. Hawksw.) Etayo & Diederich from the same locality (LE 207 161; Zhurbenko 2007; Karatygin *et al.* 1999) proved to be a misidentification of *Rhymbocarpus neglectus*. *Lepraria gelida* is a new host species.

Scutula tuberculosa (Th. Fr.) Rehm – Komi Republic, Northern Ural, Pechora River, 62°06' N, 58°25' E, alt. 170 m, rocks in taiga, on *Peltigera leucophlebia* (thallus: upper surface), 8 Jul 1997, M.Z. 97 256a (LE 210 239a).

Sphaerellothecium araneosum (Rehm ex Arnold) Zopf var. *cladoniae* Alstrup & Zhurb., syn. *Sphaerellothecium cladoniae* (Alstrup & Zhurb.) Hafellner – Komi Republic, Northern Ural, headwaters of the Pechora River, Mt. Medvezh'ya, 62°03' N, 59°03' E, alt. 700 m, mountain tundra, on *Cladonia pocillum* (basal squamules), 2 Jul 1997, M.Z. 97 298 (LE 232 753); same locality, 62°04' N, 59°08' E, alt. 500 m, rocks in fir forest, on *C. pocillum* (basal squamules and podetia: usually old portions), 4 Jul 1997, M.Z. 97 300 (LE 232 564). – Siberia, Krasnoyarsk Territory, Taimyr Peninsula, Byrranga Mts., Levinson-Lessing Lake, 74°25' N, 98°48' E, alt. 50 m, on *C. pocillum* (mostly basal, occasionally podetial squamules), 31 Jul 1995, M.Z. 95 216 (LE 232 722); same lake, 74°24' N, 98°38' E, alt. 150 m, on *C. pocillum* (bleached basal squamules), 1 Aug 1995, M.Z. 95 212 (LE 232 182); same peninsula, junction of Khatanga and Oboinaya Rivers, 72°29' N, 104°14' E, forest-tundra, on *C. pocillum* (basal squamules), 3 Aug 1996, I. Kirtsideli (LE 232 721); same peninsula, Khatanga Gulf, Cape Severnyi, 72°46' N, 105°14' E, tundra, on *C. pocillum* (basal squamules), 25 Jul 1996, I. Kirtsideli (LE 232 733); same territory, Putorana plateau, Sobach'e (Yt-Kyuel') Lake, 69°08' N, 91°55' E, alt. 700 m, mountain tundra, on *C. pocillum* (dark portions of basal squamules), Jul 1996, L. Zanolka (LE 232 615); same place, on *C. pyxidata* (L.) Hoffm. (basal squamules), Jul 1996, L. Zanolka (LE 232 723). – Siberia, Sakha-Yakutiya Republic, Laptev Sea coast, Tiksi, 71°39' N, 128°45' E, alt. 70 m, tundra, on *C. pocillum* (basal squamules), 24 Aug 1998, M.Z. 98 232 (M); same place, on *C. pyxidata* (on both sides of moribund basal squamules), 24 Aug 1998, M.Z. 98 233 (LE 232 743); same republic, Olenek District, Daldyn River basin, in sparse forest, on *C. pocillum* (basal squamules), 28 Aug 1957, A. Lukicheva (LE 232 148); same republic, junction of Indigirka and In'yali Rivers, 65°15' N, 143°06' E, alt. 500 m, open *Larix* forest, on *C. pyxidata* (basal and podetial squamules), 17 Jun 1976, I. Makarova (M). – Chukotskii Avtonomnyi Okrug, Wrangel' Is., Gusinaya River, 71°08' N, 179°17' E, alt. 100 m, on *C. pyxidata* (podetial squamules), 1991, S. Kholod (M); same river, 71°09' N, 179°37' E, alt. 390 m, on *C. pocillum* (bleached basal squamules), 1996, S. Kholod (LE 232 637); same river, 71°09' N, 179°10' E, alt. 90 m, on *C. symphyrcarpia* (Flörke) Fr. (both sides of basal squamules), 28 Jul 1991, S. Kholod (LE 232 762); same place, on *C. pocillum* (basal squamules), 28 Jul 1991, S. Kholod (LE 232 137); same island, on *C. macroceras* (Delise) Hav. (podetia), 6 Aug 1986, T. Polozova (LE 232 686); same island, Krasnyi Flag River, 71°18' N, 178°55' W, alt. 120 m, on *C. pocillum* (basal squamules), 18 Jul 1997, S. Kholod (LE 210 340); same okrug, Chukchi Peninsula, Iskaten' Pass, 66°35' N, 179°10' W, tundra, on *C. pocillum* (basal squamules), 2 Jul 1971, I. Makarova (LE 232 134); same peninsula, Lyueren River, 65°40' N, 171°50' W, alt. 100 m, tundra, on *C. pocillum*, 13 Aug 1972, I. Makarova (LE 232 659).

Sphaerellothecium icmadophilae (R. Sant.) Zhurb., **comb. nova**

Basionym: *Stigmidium icmadophilae* R. Sant., Publications from the Herbarium, University of Uppsala, Sweden 13: 17 (1984).

Bol'shezemel'skaya tundra, Khar'yaga, 67°08' N, 56°47' E, alt. 70 m, tundra, on *Icmadophila ericetorum* (thallus, apothecia), 22 Jul 2007, M.Z. 0712 (LE 210 416); same locality, 67°11' N, 56°30' E, alt. 60 m, tundra, on *I. ericetorum* (thallus, apothecia), 24 Jul 2007, M.Z. 0714 (LE 210 376). Vegetative hyphae conspicuous, immersed or superficial, medium to dark brown, mostly of short torulose cells 3-6 (–8) µm diam. Perithecia 40-60 µm diam., with ostiolum 10-20 µm diam., 1/3 erumpent. Hamathecium not observed. Asci pyriform, 32-40 × 20-21 µm. Ascospores soleiform, at first colourless, 1-septate, markedly constricted at septa, usually with two big guttules in each cell, easily disintegrating into two cells in squash preparations, with age getting olive and finally dark brown and 3-septate, (15–) 16.5-17.5-19 (–21) × 5-5.5-6.5 (–7) µm, l/b = (2.3–) 2.8-3.1-3.3 (–3.6) (*n* = 45, in water). Peridium, vegetative hyphae and brown old ascospores BCr+ blue-green. Infected areas of the host turn dark grey. Anamorph of *Sphaerellothecium icmadophilae* or an unidentified species of *Phoma* with oblong conidia 3.5-4 × 1.5 µm was associated with the infection spots in specimen LE 210 416. The only *Phoma* species known on the members of Icmadophilaceae Triebel is *P. maculiformans* Ihlen, which has bigger conidia 5-6 (–7) × 2-2.5 µm (Ihlen 1998). In the protologue of *Sphaerellothecium icmadophilae* its ascospores were reported as colourless and just 1-septate (Santesson 1984: 17). The delimitation between *Stigmidium* Trevis. and *Sphaerellothecium* Zopf is not sharp, however a conspicuous brown mycelium and dark brown old ascospores, in our opinion, better fit the generic concept of *Sphaerellothecium*. The species was previously known from Scandinavia and Austria (Hafellner 1999, Santesson *et al.* 2004) and is new to the Arctic and Russia.

S. minutum Hafellner – Murmansk Region, Kola Peninsula, Barents Sea coast, Dal'ne-Zelenetskaya Bay, 69°07' N, 36°05' E, alt. 20 m, boulders in tundra, on *Sphaerophorus fragilis* (thallus, including thalline margins of apothecia), 22 Aug 1997, M.Z. 97 318 (LE 232 739); same region, 17 km ENE of Dal'nie Zelentsy, mouth of Olenka River, 69°02' N, 36°24' E, alt. 50 m, dwarf shrub-bryophyte-lichen tundra, on *Sphaerophorus globosus* (thallus), 6 Sep 1997, M.Z. 97 321 (LE 232 719); same region, Teriberka, 69°09' N, 35°10' E, alt. 20 m, rocks in dwarf shrub-bryophyte-lichen tundra, on *S. fragilis* (thallus), 7 Aug 1977, A. Dombrovskaya (LE 232 572); same region, Pechenga, 69°33' N, 31°14' E, alt. 100 m, rocks, on *S. fragilis* (thallus), 21 Aug 1965, A. Dombrovskaya (LE 232 142); same region, 25 km E of Pechenga, 69°28' N, 31°40' E, alt. 200 m, stones in *Betula* forest, on *S. fragilis* (thallus), 22 Jul 1978, A. Dombrovskaya (LE 232 726);

same region, Lavna-tundra Mt., 68°25' N, 29°55' E, alt. 500 m, mountain tundra, on *S. fragilis* (thallus), 3 Aug 1987, T. Dudoreva (LE 232 591); same region, Khibiny Mts., Kukisvumchorr Mt., 67°40' N, 33°40' E, alt. 500 m, subalpine *Betula* forest ('krummholz'), on *S. fragilis* (thallus), 13 Aug 1997, M.Z. 97 322 (LE 232 636) [also *Japewia tornoënsis* grows here on host's moribund thallus]; same region, Keivy upland, Sukhaya Rechka, rocks in forest tundra, on *S. fragilis* (thallus), 22 Jul 1965, T. Piin (LE 232 756); same region, Ponoj River, Krasnoshchel'e, Nemetskaya Mt., 67°18' N, 37°05' E, alt. 300 m, on *S. fragilis* (thallus), 18 Jul 1965, A. Dombrovskaya (LE 232 584); same region, Kanevka, 67°08' N, 39°40', alt. 150 m, stones in *Betula* forest, on *S. fragilis* (thallus), 26 Jul 1964, A. Dombrovskaya (LE 232 620); same region, near Kolvitsa, Klochikhinskaya Mt., 67°02' N, 32°56' E, alt. 500 m, mountain tundra, on *S. fragilis* (thallus), 2 Jul 1988, T. Dudoreva (LE 232 575b). – Bol'shezemel'skaya tundra, Khar'yaga, 67°11' N, 56°29' E, alt. 60 m, on *S. globosus* (thallus), 24 Jul 2007, M.Z. 0715 (LE 210 358). – Polar Ural, Rai-Iz Mt., 66°47' N, 65°30' E, alt. 750 m, stony mountain tundra, on *S. fragilis* (thallus), 27 Jul 2004, S. Kholod (LE 210 460); same locality, 66°57' N, 65°39' E, alt. 150 m, rock outcrops among *Larix* forest, on *S. globosus* (thallus), 27 Jun 1993, M.Z. 93 128 (LE 232 109). – Siberia, Yamalo-Nenetskiy Avtonomnyi Okrug, Obskaya, 66°45' N, 66°15' E, alt. 100 m, tundra, on *S. globosus* (thallus), 14 Jul 1995, O. Sumina (LE 232 124); same okrug, Yamal Peninsula, Saletayakha River, 69°45' N, 68°40' E, tundra, on *S. globosus* (thallus), 9 Aug 1990, O. Khitun (LE 232 146); same peninsula, Neromayakha River, 70°10' N, 69°10' E, tundra, on *S. globosus* (thallus), 16 Jul 1990, O. Khitun (LE 232 607). – Siberia, Krasnoyarsk Territory, Izvestii TsIK Archipelago, Troinoi Is., 76°00' N, 82°50' E, alt. 30 m, rocks in tundra, on *S. fragilis* (thallus), 10 Jul 1992, Yu. Kozhevnikov (LE 232 579); same territory, Taimyr Peninsula, Dikson Is., 73°30' N, 80°20' E, alt. 30 m, stone field, on *S. fragilis* (thallus), 7 Jul 1990, M.Z. 901 012 (LE 232 562); same peninsula, Uboinaya River mouth, 73°39' N, 82°22' E, alt. 20 m, on *S. globosus* (thallus), 1 Aug 1990, M.Z. 901 005b (LE 232 730b); same peninsula, Ragozinka River, 72°48' N, 80°53' E, alt. 30 m, on *S. globosus* (thallus), 13 Jul 1990, M.Z. 901 002b (LE 232 144b); same locality, alt. 5 m, drift wood accumulation, on *S. globosus* (thallus), 5 Jul 1990, M.Z. 901 008 (LE 232 685); same peninsula, Sibiryakova Is., 73°02' N, 79°05' E, alt. 10 m, on *S. globosus* (thallus), 17 Jul 1990, V. Kuvaev (LE 232 677b); same peninsula, Pyasino Lake, Nyapan hills near Ladanakh Lake, 70°05' N, 87°40' E, alt. 100 m, on *S. globosus* (thallus), 24 Jul 1983, M.Z. 83 105 (LE 232 746); same peninsula, Byrranga Mts., Bol'shaya Bootankaga River, 74°17' N, 98°04' E, alt. 360 m, tundra, on *S. globosus* (thallus: mostly on bleached parts), 22 Jul 1991, V. Kuvaev 1999 (LE 232 155a); same mountains, Levinson-Lessing Lake, 74°32' N, 98°33' E, alt. 300 m,

- on *S. fragilis* (thallus), M.Z. 95 259 (LE 232 123) [also *Japewia tornoënsis* grows here on decaying host's thallus]; same lake, 74°24' N, 98°49' E, alt. 120 m, on *S. fragilis* (thallus), M.Z. 95 264 (LE 232 663); same territory, Severnaya Zemlya Archipelago, Oktyabr'skoi Revolutsii Is., Cape Massivnyi, 78°49' N, 99°29' E, alt. 10 m, stone field, on *S. globosus* (thallus), 16 Aug 2007, M. Gavriilo (LE 210 425); same island, Serp i Molot Mt., 79°48' N, 94°20' E, alt. 250 m, on *S. globosus* (thallus), 17 Jul 1985, M. Gavriilo (LE 232 560); same archipelago, Bol'shevik Is., Cape Baranova, 79°16' N, 101°40' E, alt. 20 m, on *S. fragilis* (thallus), 10 Jul 1996, M.Z. 96 887 (LE 232 644); same place, on *S. globosus* (thallus), 14 Jul 1996, M.Z. 96 885 (LE 232 600) [also *Japewia tornoënsis* grows here on moribund host's thallus]; same island, Cape Antseva, 78°12' N, 103°17' E, alt. 60 m, on *S. fragilis* (moribund thallus), 27 Aug 1998, N. Matveeva (LE 232 592) [also *Caloplaca ammiospila* and *Japewia tornoënsis* grow here on host's moribund thallus]; same island, Golysheva River, 78°26' N, 104°28' E, alt. 170 m, boulder field, on *S. fragilis* (thallus), 3 Aug 2000, N. Matveeva (LE 232 131); same archipelago, unnamed island near southern coast of Bol'shevik Is. in Vil'kitskogo Strait, probably 78°07' N, 102°54' E, on *S. fragilis* (thallus), Aug. 1951, A. Musina (LE 232 596); same territory, Western Sayan, head of Sinyaya River, between "2607.1" and "2503.3" Mts., on *S. globosus* (thallus), V. Kuvaev 2104 (LE 232 548). – Siberia, Sakha-Yakutiya Republic, Laptev Sea coast, near Tiksi, 71°40' N, 128°40' E, alt. 50 m, tundra, 17 Jul 1998, on *S. fragilis* (thallus), M.Z. 98 266 (LE 232 635); same locality, 71°39' N, 128°44' E, alt. 100 m, on *S. fragilis* (thallus), 24 Aug 1998, Z. 98 265a (LE 232 649a); same republic, Indigirka River, Ust'-Nera, 64°30' N, 143°10' E, alt. 650 m, stone field in an open *Larix* forest, on *S. fragilis* (thallus), 11 Jul 1992, M.Z. 92 544 (LE 232 698); same republic, Zhokhova Is., 76°10' N, 152°50' E, alt. 80 m, stony top of a hill, on *S. fragilis* (thallus), Aug 1989, M. Samarskii (LE 232 670). – Chukotskii Avtonomnyi Okrug, Wrangel' Is., on *S. fragilis* (thallus), 1991, S. Kholod (LE 210 407); same okrug, Baranikha, 68°30' N, 168°16' E, on *S. fragilis* (thallus), 22 Jun 1971, I. Makarova (LE 232 602); same okrug, Televeem River, 65°50' N, 175°05' E, on *S. fragilis* (thallus), 18 Jul 1979, I. Makarova (LE 232 630); same okrug, Anadyr' River basin, Algan Mts., head of Utesiki River, 64°55' N, 173°10' E, on *S. globosus* (thallus), 22 Aug 1948, M. Avramchik (LE 232 755); same okrug, Egvekinot, 66°25' N, 179°12' W, alt. 200 m, stony tundra, on *S. fragilis* (thallus, including talline margins of apothecia), 23 Jun 1970, I. Makarova (LE 232 745); same okrug, Lunnaya River in Amguema River basin, 67°05' N, 178°55' W, on *S. fragilis* (thallus), 27 Jul 1970, I. Makarova (LE 232 558); same okrug, Chukchi Peninsula, Ioni Lake 65 55' N, 173 45' W, alt. 400 m, on *S. globosus* (thallus), 30 Jun 1977, I. Makarova (LE 232 541); same place, on *S. fragilis* (thallus, including talline margins of apothecia), 10 Jul 1977, I. Makarova (LE 232 790); same peninsula, head of Erguveem River, 66°25' N, 176°30' W, alt. 500 m, on *S. fragilis* (thallus), 5 Jul 1967, E. Zimarskaya (LE 232 776); same peninsula, Sireniki, 64°28' N, 173°44' W, alt. 300 m, on *S. fragilis* (thallus), 8 Jul 1986, A. Katenin (LE 232 716); same peninsula, Inchoun, 66°15' N, 170°20' W, alt. 200 m, on *S. fragilis* (thallus), 6 Aug 1975, I. Makarova (LE 232 751); same peninsula, Lorino hot springs, 65°33' N, 171°18' W, on *S. fragilis* (thallus), 7 Jul 1972, I. Makarova (LE 232 767). – Magadan Region, Magadan, Nagaevskaya Mt., 59°34' N, 150°45' E, alt. 400 m, stony top, on *S. fragilis* (thallus), 7 Sep 2004, N. Sazanova (LE 232 133). New to Murmansk Region, Nenetskii Avtonomnyi Okrug, Tyumen' Region, Chukotskii Avtonomnyi Okrug and Magadan Region. Ascospores at first colourless, but finally sometimes medium brown (observed in specimen LE 232 755). Though coloured ascospores are not uncommon in *Sphaerellothecium* species, they have not been previously reported for *S. minutum*. Heavy infections cause bleaching of the host thalli.
- Stigmidium collematis* Cl. Roux & Triebel – Wrangel' Is., Krasnyi Flag River, 71°14' N, 178°48' W, 130 m, on *Collema polycarpon* Hoffm. (apothecia: discs), 14 Jul 1997, S. Kholod (LE 232 568). Previously known only from the type locality in Italy on the same host species (Roux & Triebel 1994: 483). New to Asia, Russia and the Arctic.
- S. congestum* (Körb.) Triebel – Nenetskii Avtonomnyi Okrug, Novaya Zemlya, Ledyanay Gavan' Bay, Cape Medvezhii, 76°15' N, 68°15' E, on *Rinodina roscida* (apothecia: hymenium), 28 Aug 1995, A. Kuliev (LE 232 150a). – Siberia, Buryatiya Republic, Baikal Lake, Khamar-Daban Range, Osinovka River, 51°25' N, 104°48' E, alt. 700 m, forest, on *Lecanora* sp. (apothecia) on tree bark, 4 Jul 1996, G. Urbanavichyus (LE 207 228) [confirm. D. Triebel, 1997]. New to the Russian Arctic. *Rinodina* is a new host genus.
- S. frigidum* (Sacc.) Alstrup & D. Hawksw. – Wrangel' Is., Neizvestnaya River, 71°15' N, 179°16' W, alt. 160 m, on *Thamnotia vermicularis* var. *subuliformis* (thallus), 22 Aug 1987, S. Kholod (LE 210 405). New to Chukotskii Avtonomnyi Okrug.
- S. leucophlebiae* Cl. Roux & Triebel – Severnaya Zemlya Archipelago, Bolshevik Is., Cape Antseva, 78°12' N, 103°17' E, alt. 30 m, on *Peltigera venosa* (L.) Hoffm. (thallus), 28 Jul 2000, N. Matveeva (LE 210 326). New to Russia. *Peltigera venosa* is a new host species.
- Syzygospora bachmannii* Diederich & M.S. Christ. – Bol'shezemel'skaya tundra, Khar'yaga, 67°10' N, 56° 38' E, alt. 70 m, on *Cladonia gracilis*, 18 Jul 2007, M.Z. 0742 (LE 232 154). New to the Russian Arctic.
- Taeniolella rolfii* Diederich & Zhurb. – Khibiny Mts., near Akademicheskoe Lake, 67°43' N, 33°49' W, alt. 700 m,

tundra, on *Cetraria odontella* (Ach.) Ach. (thallus), 20 Aug 2007, M.Z. 0750 (LE 210 469).

**Tetramelas pulverulentus* (Anzi) A. Nordin & Tibell – Taimyr Peninsula, Byrranga Mts., Levinson-Lessing Lake, 74°32' N, 98°33' E, alt. 300, on *Physconia muscigena* (Ach.) Poelt (thallus), 29 Jul 1994, M.Z. 9493a, 94 139 (LE 206 969a, 206 968); 3 Aug 1994, M.Z. 94 257 (LE 206 970). – Wrangel' Is., Gusinaya River, 71°07' N, 179°21' E, alt. 180 m, on *P. muscigena* (thallus), 19 Aug 1991, S. Kholod (LE 210 349); same island, Komsomol Lake, 71°16' N, 179°15' E, alt. 30 m, on *P. muscigena* (thallus, apothecia), 1991, S. Kholod (LE 210 379).

Thamnogalla crombiei (Mudd) D. Hawksw. – Wrangel' Is., Neizvestnaya River, 71°11' N, 179°15' W, alt. 150 m, on *Thamnotia vermicularis* var. *subuliformis* (thallus), 12 Aug 1987, S. Kholod (LE 210 470). New genus and species to Russia.

**Thelocarpon epibolum* Nyl. s. l. – Severnaya Zemlya Archipelago, Bolshevik Is., Cape Antseva, 78°12' N, 103°17' E, alt. 2 m, on undetermined crustose lichen on soil, 11 Sep 2000, N. Matveeva (LE 210 410).

**T. epibolum* Nyl. f. *longisporum* H. Magn. (nom. inval.) – Bol'shezemel'skaya tundra, Khar'yaga, 67°12' N, 56°37' E, alt. 70 m, on *Peltigera aphthosa* (thallus), 19 Jul 2007, M.Z. 0730 (LE 210 397).

Tremella cetrariicola Diederich & Coppins – Khibiny Mts., Akademicheskoe Lake, 67°43' N, 33°49' W, alt. 700 m, moist tundra, on *Cetrariella delisei* (Schaer.) Kärnefelt & A. Thell (thallus), 20 Aug 2007, M.Z. 0749 (LE 232 187).

Vouauxiomyces sp. – Polar Ural, Rai-Iz Mt., 66°57' N, 65°39' E, alt. 150 m, rock outcrops among *Larix* forest, on *Xanthoparmelia stenophylla* (thallus), 27 Jun 1993, M.Z. 93 217b (LE 232 105b). The species grew adjacent to *Phacopsis fusca*. It differs from the other known species of *Vouauxiomyces* growing on parmelioid lichens by longer conidia 10-15 × 4-5 µm (Hawksworth 1981). The specimen might be conspecific with that presented in Kocourková (2000: 133-134).

Zwackhiomyces martinianus (Arnold) Triebel & Grube – Siberia, Buryatiya Republic, Baikal Lake, Tankhoi, 51°32' N, 105°10' E, alt. 550 m, boulder in *Betula*-forest, on *Porpidia crustulata* (Ach.) Hertel & Knoph (thallus), 25 Jul 1996, G. Urbanavichyus (LE 207 356) [confirm. D. Triebel, 1997].

Totally we report herewith 62 species and 39 genera of obligate lichenicolous fungi and five species in five genera of obligate or optional lichenicolous lichens. *Cercidospora verrucosaria*, *Lettauia cladoniicola*, *Sphaerellothecium icmadophilae*, and *Stigmidium collematis* are first reports for the Arctic and

Arthonia molendoi, *Polycoccum bryonothae*, *Pronectria robergei*, *Stigmidium congestum*, and *Syzygospora bachmannii* are new to the Russian Arctic. Another three species are new to the Russian Subarctic: *Abrothallus bertianus*, *A. caeruleus*, and *A. suecicus*. Seven species – *Lichenochora constrictella*, *Lichenopeltella cladoniarum*, *Marchandiomyces corallinus*, *Sphaerellothecium icmadophilae*, *Stigmidium collematis*, *S. leucophlebiae*, and *Thamnogalla crombiei* – are new to Russia and Asia, *Marchandiomyces* and *Thamnogalla* being also new genera for the regions. Four species are new to Siberia: *Abrothallus bertianus*, *A. suecicus*, *Cercidospora verrucosaria*, and *Lichenosticta alcicornaria*. 18 species are new to various Russian provinces: *Sphaerellothecium minutum* – to Murmansk Region; *Bachmanniomyces uncialicola*, *Corticifraga peltigerae*, *Illosporium carneum*, *Intralichen christiansenii*, *Merismatium nigrillum*, *Phaeosporobolus alpinus*, *Raciborskiomyces peltigericola*, and *Sphaerellothecium minutum* – to Nenetskiy Avtonomnyi Okrug; *Abrothallus caeruleus*, *Carbonea supersparsa*, *Epicladonia stenospora*, *Phaeopyxis punctum*, *Sphaerellothecium minutum* – to Tyumen' Region; *Arthonia clemens*, *A. excentrica*, *Bachmanniomyces uncialicola*, *Lichenocodium lecanorae*, *Muellerella erratica*, *Phaeosporobolus alpinus*, *Pyrenidium actinellum*, *Sphaerellothecium minutum*, and *Stigmidium frigidum* – to Chukotskiy Avtonomnyi Okrug. *Buellia* and *Micarea* are new host genera for *Cercidospora punctillata*; *Sphaerophorus* – for *Lichenocodium lecanorae*; *Icmadophila* – for *Merismatium nigrillum*; *Rinodina* – for *Stigmidium congestum*. *Melanelia panniformis* is a new host species for *Abrothallus bertianus*; *Lepraria gelida* – for *Arthonia excentrica* and *Rhymbocarpus neglectus*; *Cladonia stygia* – for *Bachmanniomyces uncialicola*; *Pilophorus dovrensis* – for *Dactylospora deminuta*; *Cladonia coccifera* – for *Epicladonia stenospora*; *Rinodina roscida* – for *Intralichen christiansenii*; *Cladonia coccifera* – for *Lichenosticta alcicornaria*; *Cladonia cornuta* – for *Phaeosporobolus alpinus*; *Peltigera venosa* – for *Stigmidium leucophlebiae*.

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