

New records of lichenicolous fungi from the vicinity of Colesbukta Bay (Svalbard Archipelago)

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Abstract. A list of 28 species of lichenicolous fungi is given for the Colesbukta Bay area (Svalbard Archipelago). *Endococcus complanatae* is newly reported for the Arctic; *Cercidospora cecidiiformans*, *Echinothecium reticulatum*, *Endococcus stigma*, *Sphaerellothecium soechtingii*, and *Stigmidium fuscatae* are new for Svalbard. Another seven species are recorded for the first time for Nordenskiöld Land. An unusual lichen-like organism growing on another lichen and morphologically resembling species of *Sphaerellothecium* is noted and illustrated.

Keywords: biodiversity, lichen parasites, new finds, Arctic.

Новые находки лихенофильных грибов в окрестностях бухты Колсбей (архипелаг Шпицберген)

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Резюме. Приводится список 28 видов лихенофильных грибов для окрестностей бухты Колсбей (Шпицберген). *Endococcus complanatae* впервые отмечен в Арктике; *Cercidospora cecidiiformans*, *Echinothecium reticulatum*, *Endococcus stigma*, *Sphaerellothecium soechtingii*, и *Stigmidium fuscatae* являются новыми для Шпицбергена. Еще семь видов впервые отмечены на Земле Норденшельда. Отмечен и проиллюстрирован необычный лишайникоподобный организм, растущий на другом лишайнике и морфологически напоминающий виды *Sphaerellothecium*.

Ключевые слова: биоразнообразие, паразиты лишайников, новые находки, Арктика.

Lichenicolous fungi are an ecological group of fungi that inhabits lichens and form at least partly external fruiting bodies (Lawrey, Diederich, 2003). In a narrow sense, they are understood as non-lichenized fungi obligately inhabiting lichens; in a broad sense, this group also includes non-lichenized fungi that facultatively inhabit lichens, as well as lichens that obligately or facultatively inhabit other lichens. The knowledge of the taxonomic diversity of this group of fungi is currently rapidly increasing: over the past seven years, the number of known obligately lichenicolous non-lichenized taxa has risen from 2000 (Diederich *et al.*, 2018) to 2419 (Diederich *et al.*, 2025). The lichenicolous mycobiota of the Arctic also continues to attract researchers' attention, with recent checklists of these fungi published for Alaska (Spribille *et al.*, 2023) and the Russian Arctic (Zhurbenko, 2025).

For Svalbard, the most recent comprehensive summary on lichenicolous fungi was provided by Zhurbenko and Brackel (2013), who reported 136 species of lichenicolous fungi and 42 species of

lichens occurring on other lichens based on original data and a compilation of 52 literature sources. Subsequent data on the occurrences of these fungi in the archipelago are found in the publications by Wietrzyk *et al.* (2017), Zhurbenko and Pino Bodas (2017), Wietrzyk-Pelka *et al.* (2018), Konoreva and Chesnokov (2022, 2023), Zhurbenko (2022), and Konoreva *et al.* (2024), which added six species and increased the total list of these fungi to 142 species.

According to the accepted system of zonal division of the Svalbard Archipelago (Øvstedal *et al.*, 2009), its territory is divided into the polar desert zone (areas with an average temperature of the warmest month below +3 °C), northern arctic tundra (average temperature +3...+5 °C) and middle arctic tundra (+5...+7 °C). The southern arctic tundra, which represents areas within +7...+9 °C, is absent on Svalbard but may be represented by small areas inhabited by relatively thermophilic species (for example, *Betula nana* L., *Campanula gieseckiana* Vest ex Schult. or *Calamagrostis*

purpurascens R. Br.). These areas are rare on Svalbard and are of great interest to researchers, since plant and fungal species that are not typical for high latitudes can be found there.

One of such anomalously warm areas is the Colesbukta Bay area, located between Barentsburg and Longyearbyen. This is the only place in the archipelago where *Betula nana* grows, as well as the northernmost location of the epiphytic facultatively lichenized fungus *Stictis radiata* Pers. (Konoreva, Chesnokov, 2024). Until recently, information about lichens of the Colesbukta Bay area has remained rather scarce. Only 40 species were listed in the Svalbard Lichen Database (2025). Another 29 species were mentioned in the checklist of lichens of Svalbard (Øvstedal et al., 2009). Konoreva and Chesnokov (2018) reported 121 species, and currently 234 species have been documented for this area (Konoreva, Chesnokov, 2025). Information about lichenicolous fungi of this area is presented here for the first time.

Material and Methods

Lichenicolous fungi were found by the first author during the examination of the lichen collection gathered by the second author in the Colesbukta Bay area in 2009 and 2015 (Fig. 1). The map was created using the GIS Axioma 4.4 program based on information obtained from the Topographical

Svalbard Map Service of the Norwegian Polar Institute (2025). Geographical coordinates are given in the coordinate system WGS 84. Microscopy was carried out using MBS 10 and Zeiss Stemi 2000-CS stereomicroscopes and Zeiss Primo Star and Zeiss Axio Imager A1 compound microscopes. Microscopic characters were studied using razor blade cut sections mounted in water, 10 % potassium hydroxide (K), and Lugol's iodine directly (I) or after a K pre-treatment (K/I). Measurements were taken from water mounts and rounded to the nearest 0.5 μm . When the number of measurements (n) > 10, the dimensions of structures, as well as the length/width ratio (l/w) of the ascospores, are given as $(\text{min}-)(\bar{x} - \text{SD}) - (\bar{x} + \text{SD})(-\text{max})$, where min and max are the extreme values observed, \bar{x} the arithmetic mean, and SD the corresponding standard deviation. Specimens identified by M. P. Zhurbenko are marked in the list with the notation «det. Zhurbenko», specimens without such a mark were identified by S. V. Chesnokov. The studied specimens are stored in the herbaria of the Komarov Botanical Institute (LE) and the Avrorin Polar-Alpine Botanical Garden-Institute (KPABG). The nomenclature of lichenicolous fungi and lichens mainly follows Diederich et al. (2018) and Westberg et al. (2021), respectively.

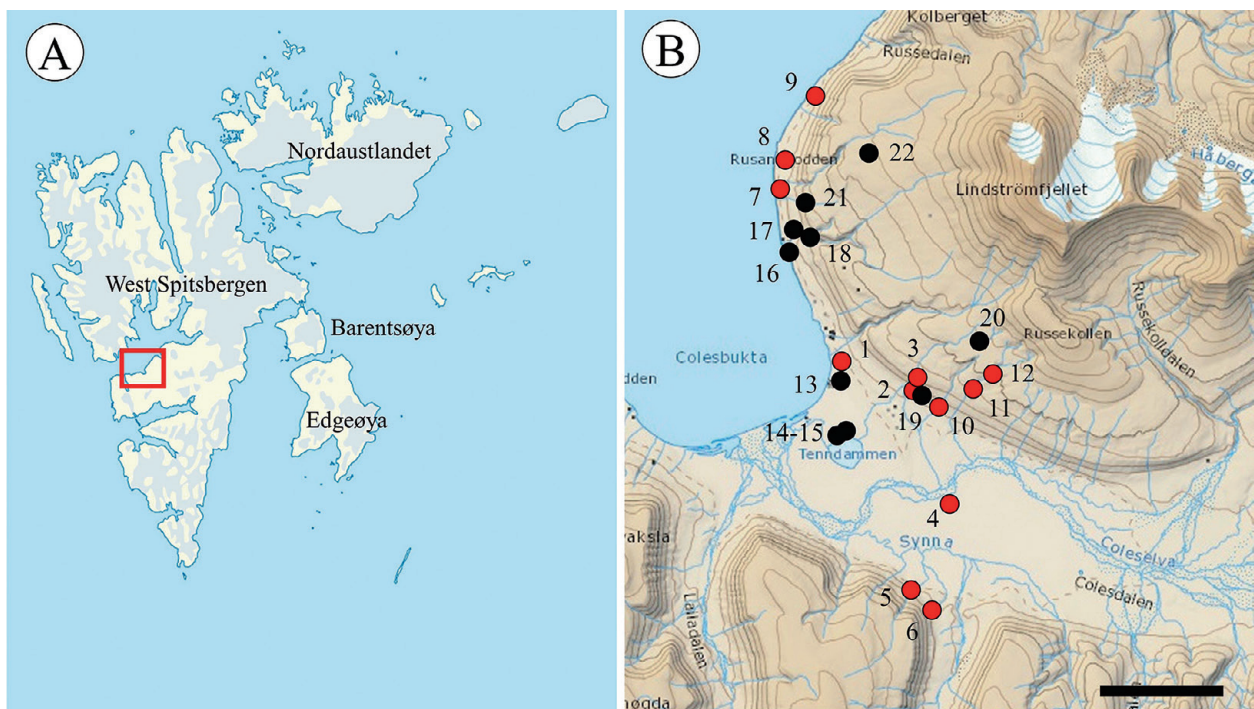


Fig. 1. Study area in the Svalbard Archipelago.

A – the location of Colesbukta Bay in West Spitsbergen is marked with a square; B – collection sites in the vicinity of Colesdalen in 2009 (red dots) and 2015 (black dots).

Scale bar: B – 2 km.

Sampling locations

Svalbard, West Spitsbergen, Nordenskiöld Land: 1 – surroundings of the abandoned Kolsbey settlement, 78°06'44.8"N, 15°01'59.8"E, 11 m a. s. l., remains of wooden and concrete buildings, 29 VII 2009; 2 – *ibid.*, 78°06'33.4"N, 15°04'43.3"E, 165 m a. s. l., stone scatter among the willow-moss tundra, 29 VII 2009; 3 – *ibid.*, top of the hill, 78°06'39.1"N, 15°04'57.2"E, 190 m a. s. l., moss-grass tundra, 29 VII 2009; 4 – Colesdalen valley, 78°05'32.3"N, 15°06'34.9"E, 6 m a. s. l., moss-sedge swamp opposite the settlement across the river, 30 VII 2009; 5 – *ibid.*, 78°04'47.1"N, 15°04'48.6"E, 65 m a. s. l., peat-covered stone scatter, 30 VII 2009; 6 – *ibid.*, 78°04'38.6"N, 15°05'39.0"E, 58 m a. s. l., stone scatter, 30 VII 2009; 7 – the first coastal terrace by the road to Grumant, 78°08'16.6"N, 14°58'58.3"E, 6 m a. s. l., moss-willow tundra, 31 VII 2009; 8 – *ibid.*, 78°08'30.3"N, 14°59'37.4"E, 40 m a. s. l., moss-grass-willow tundra on the slope, 31 VII 2009; 9 – *ibid.*, 78°09'13.3"N, 15°00'34.6"E, 19 m a. s. l., remains of wooden structures, 31 VII 2009; 10 – Colesdalen valley, 78°06'26.2"N, 15°06'00.8"E, 85 m a. s. l., slope with *Betula nana*, 1 VIII 2009; 11 – *ibid.*, 78°06'38.7"N, 15°07'49.7"E, 212 m a. s. l., moss-willow slope, 1 VIII 2009; 12 – *ibid.*, 78°06'46.2"N, 15°08'33.6"E, 271 m a. s. l., wet rocks at the base of the canyon with a stream, 1 VIII 2009; 13 – Coleselva River floodplain, 78°06'35.7"N, 15°01'52.9"E, 17 m a. s. l., slope to the river, above the swamp, *Cassiope tetragona* on a slope among grass and moss areas, 5 VIII 2015; 14 – Colesdalen valley, shore of Tenndammen Lake, 78°06'06.7"N, 15°01'51.4"E, 11 m a. s. l., willow-moss tundra, 5 VIII 2015; 15 – *ibid.*, 78°06'09.7"N, 15°02'07.2"E, 10 m a. s. l., spots with mosses and willows, 5 VIII 2015; 16 – surroundings of the abandoned settlement Kolsbey, road to Grumant, near Rusanov's house, the second coastal terrace, 78°07'45.8"N, 14°59'40.9"E, 66 m a. s. l., community with *Betula nana*, *Dryas*, polar willow and grasses, 5–6 VIII 2015; 17 – *ibid.*, stream near Rusanov's house, 78°07'54.4"N, 14°59'47.9"E, 114 m a. s. l., stone scatter along the stream, 6 VIII 2015; 18 – *ibid.*, 78°07'52.3"N, 15°00'18.7"E, 144 m a. s. l., stone scatter at the ridge, 6 VIII 2015; 19 – slope of Coleselva River valley, 78°06'27.6"N, 15°05'22.8"E, 130 m a. s. l., stone scatter, 7 VIII 2015; 20 – terrace of Coleselva River valley, plateau near Mount Russekollen, 78°06'56.5"N, 15°07'52.6"E, 320 m a. s. l., moss-willow-sedge tundra, 7 VIII 2015; 21 – surroundings of the abandoned Kolsbey settlement, road to Grumant, 78°08'08.0"N, 15°00'21.8"E, 229 m a. s. l., 3rd terrace, stone scatter, 8 VIII 2015; 22 – *ibid.*, 78°08'37.5"N, 15°03'11.7"E, 342 m a. s. l., swampy lowland on the terrace, 8 VIII 2015.

Results and Discussion

An annotated list of species is presented in alphabetical order. Species newly recorded in the

Arctic are denoted by "!", new for Svalbard by "!", new for Nordenskiöld Land by "*". The collector's name L. A. Konoreva is abbreviated as *LK*.

Arthonia pannariae Zhurb. et Grube – 11: on apothecia of *Psoroma hypnorum* (Vahl) Gray growing on soil, *LK 154*, LE F-358620.

The species is known from several locations in Nordenskiöld Land (Zhurbenko, Brackel, 2013).

A. peltigerina (Almq.) H. Olivier – 15, 20: on thallus of *Solorina crocea* (L.) Ach. growing on soil, *LK 112*, *LK 175*, LE F-358626, LE F-358642.

The species is known from many locations on Nordenskiöld Land and has been found once on Albert I Land (Zhurbenko, Brackel, 2013).

A. stereocaulina (Ohlert) R. Sant. – 22: on phyllocladia of *Stereocaulon alpinum* Laurer growing on soil, *LK 193*, LE F-358645.

The species is known from several locations in Nordenskiöld Land (Zhurbenko, 2010; Zhurbenko, Brackel, 2013).

***Carbonea vitellinaria** (Nyl.) Hertel – 13: on thallus of *Candelariella vitellina* (Hoffm.) Müll. Arg. growing on stone, *LK 97*, LE F-358624.

The species has been reported from Hornsund as *Lecidea vitellinaria* Nyl. (Fries, 1860, 1867), Nordaustlandet (Zhurbenko, Brackel, 2013), and Woodfjorden, Bockfjorden, Sverrefjellet, Klippenrippe (Hafellner, 2021).

***Catillaria stereocaulorum** (Th. Fr.) H. Olivier – 14: on phyllocladia of *Stereocaulon rivulorum* H. Magn. growing on soil, *LK 111*, LE F-358625.

The species has been reported from several locations on Nordaustlandet [Fries, 1867, as *Biatorina stereocaulorum* Th. Fr.; Hagen, 1950, as *Scutula stereocaulorum* (Th. Fr.) Karb.; Konoreva *et al.*, 2024], Ny-Friesland (Fries, 1867, as *Biatorina stereocaulorum*), Haakon VII Land (Hafellner, 1982; Alstrup, Olech, 1993), Dickson Land (Zhurbenko, 2010; Zhurbenko, Brackel, 2013) and Prins Karls Forland (Konoreva, Chesnokov, 2023).

!**Cercidospora cecidiiformans** Grube et Hafellner – 13: on thallus of *Rhizocarpon geographicum* (L.) DC. growing on stone, *LK 97*, LE F-358623.

The species parasitizes yellow species of *Rhizocarpon*. It forms pillow-like galls on the thalli of the host with numerous submerged perithecia. It is known from Europe: Austria (Hafellner, 1993), France (Roux *et al.*, 2025), Germany (Cezanne *et al.*, 2023), Italy (Brackel, Berger, 2019), Montenegro (Strasser *et al.*, 2015), Norway (Hafellner, 1993), Sweden (Ihlen, Wedin, 2005), Switzerland (Hafellner, 1993), and North America: Alaska (Spribille *et al.*, 2010), California (Knudsen, Kocourková, 2014), Greenland (Hafellner *et al.*, 2002).

C. punctillata (Nyl.) R. Sant. – 4, 5, 15: on thalli of *Solorina crocea* and *Protopannaria pezizoides* (Weber) P. M. Jørg. et S. Ekman growing on soil, *LK 95*, *LK 96*, *LK 112*, *LK 116*, LE F-358612, LE F-358613, LE F-358627, LE F-358629.

Previously reported from Sørkapp Land [Alstrup, Olech, 1993, as *Cercidospora lichenicola* (Zopf) Hafellner], Haakon VII Land (Hafellner, 1982, 1987, as *C. lichenicola*), Nordenskiöld Land (Zhurbenko, Alstrup,

2004; Zhurbenko, 2009b; Zhurbenko, Brackel, 2013) and Nordaustlandet (Zhurbenko, 2009a).

Cercidospora stereocaulorum (Arnold) Hafellner — 22: on phyllocladia of *Stereocaulon arcticum* Lynge growing on soil, *LK 191*, LE F-355662.

Previously reported from Sørkapp Land (Alstrup, Olech, 1993), Dickson Land (Zhurbenko, 2010; Zhurbenko, Brackel, 2013), Nordenskiöld Land (Zhurbenko, Brackel, 2013), Nordaustlandet (Zhurbenko 2010; Zhurbenko, Brackel, 2013), and Prins Karls Forland (Konoreva, Chesnokov, 2023).

***C. trypetheliza** (Nyl.) Hafellner et Obermayer — 18: on thallus of *Arthrorhaphis alpina* (Schaer.) R. Sant. growing on soil, *LK 148*, LE F-358639.

Previously reported from Dickson Land (Zhurbenko, Brackel, 2013). This is the second find of the species in Svalbard.

Echinothecium reticulatum Zopf — 16: on thallus of *Parmelia saxatilis* (L.) Ach. growing on stone, *LK 129*, det. Zhurbenko, LE F-358633.

This is a subcosmopolitan species (Brackel, 2014), also known from many records in the Arctic (e. g., Zhurbenko, 2025).

!!Endococcus complanatae Arnold — 10: on thallus of *Miriquidica griseoatra* (Flot.) Hertel et Rambold growing on stone, *LK 152*, det. Zhurbenko, LE F-355156.

Perithecia (100)115–145(165) μm diam. ($n = 22$). Asci 8-spored. Ascospores ellipsoid to narrowly ellipsoid, with rather acute but not attenuated ends, (12)13.5–16.5(18.5) \times (4.5)5–6.5(7.5) μm , $l/w = (2)2.3\text{--}2.9(3.3)$ ($n = 75$), 1-septate, not or occasionally slightly constricted at the septum, with a smooth wall 0.5–1 μm thick, sometimes with 1–3 conspicuous guttules in each cell, irregularly biseriate in the ascus.

The species was described from the Alps, growing on *Miriquidica complanata* (Körb.) Hertel et Rambold (Arnold, 1873). The features of the ascospores given in the protologue (15–16.5 \times 4–5 μm , ends attenuated) differ slightly from those of our specimen.

The taxonomic status of this fungus confined to *Miriquidica* Hertel et Rambold lichen hosts was assessed differently, for example, Triebel (1989) considered it as a synonym of *Endococcus perpusillus* Nyl.; however, we adhere to the views of such authors as Hafellner et al. (2014) and Diederich et al. (2018), who recognized it as an independent species.

According to the literature we know, including recent checklists of arctic lichenicolous fungi (Kristinsson et al., 2010; Zhurbenko, Brackel, 2013; Spribille et al., 2023; Zhurbenko, 2025), the species is here newly reported for the Arctic. The northernmost record of the species to date was from Southern Norway (Hafellner et al., 2014).

***E. macrosporus** (Hepp ex Arnold) Nyl. — 21: on thallus of *Rhizocarpon geographicum* growing on stone, *LK 182*, det. Zhurbenko, LE F-358644.

Perithecia (130)140–180(200) μm diam. ($n = 12$), protruding in the ostiolar region to 1/3 erumpent, up to 10 per host areole; induction of distinct swellings of the host areoles not observed. Asci (4)8-spored. Ascospores light greyish brown to medium brown, the terminal portions of the wall and septum of mature spores are often

darker, mainly ellipsoid, with \pm rounded ends, (13)15.5–19.5(21) \times (6.5)7–8.5(9) μm , $l/w = (1.6)2\text{--}2.6(2.8)$ ($n = 40$), (0)1-septate, not constricted at the septum, occasionally with 1–2 conspicuous guttules in each cell, with a smooth wall 0.5–1 μm thick, irregularly biseriate in the ascus.

Despite the absence of noticeable gall-formation characteristic of *Endococcus macrosporus*, the examined specimen corresponds well to the description of this species by Brackel and Berger (2019) and the differences from the morphologically similar *E. sardous* Brackel (also growing on *Rhizocarpon geographicum*) noted by these authors.

Previously reported from Sørkapp Land as *E. cf. macrosporus* (Zhurbenko, Brackel, 2013) and Prins Karls Forland (Konoreva, Chesnokov, 2023).

***E. propinquus** (Körb.) D. Hawksw. s. str. — 5, 16: on thallus of *Porpidia flavicunda* (Ach.) Gowan and *Sagedia zonata* Ach. growing on stones, *LK 102*, *LK 129*, LE F-358614.

Endococcus propinquus s. str. occurs only on the thalli of *Porpidia* spp. (Sérusiaux et al., 1999), while *E. propinquus* s. l. is widespread and has been recorded on a wide variety of crustose lichens (Ihlen, Wedin, 2008). *Endococcus propinquus* s. l. is known in Svalbard from Sørkapp Land, Albert I Land, Ny-Friesland, Bjørnøya and Nordaustlandet [Fries, 1860, 1867, as *Endococcus gemmifer* (Taylor) Nyl.; Paulson, 1923; Konoreva, Chesnokov, 2021]. It has been reported to grow on *Lecanora* spp., *Lecidea* spp., *Rhizocarpon* sp. and *Sporastatia polyspora* (Nyl.) Grunmann. *Endococcus propinquus* s. str. is known in the archipelago only from Wedel Jarlsberg Land (Kukwa, Jabłońska, 2008) and Prins Karls Forland (Konoreva, Chesnokov, 2023).

!E. stigma (Körb.) Stizenb. s. str. — 13: on thallus of *Acarospora fuscata* (Schrad.) Th. Fr. growing on stone, *LK 97*, det. Zhurbenko, LE F-355155b.

Ascospores mostly ellipsoid, with acute (90%) [including clearly attenuated (10–20%)] or occasionally rounded ends, (11)13–16.5(18) \times 6.5–7.5 μm , $l/w = (1.6)1.8\text{--}2.4(2.6)$ ($n = 23$), with a verruculose wall (as clearly seen in K).

The examined material corresponds well to the description of this species by Kainz, Triebel (2004), except that the latter authors characterized its ascospores as smooth. However, other researchers (e. g., Knudsen, Kocourková, 2007; Schiefelbein et al., 2017) also noted that its spores are ornamented.

Endococcus stigma s. str. is known from Europe [e. g., Macaronesia (Hafellner, 2002), Denmark (Alstrup et al., 2004), Austria, Italy, Sweden, Switzerland (Hafellner, 2019), Germany (Schiefelbein et al., 2017)], Asia [Tajikistan (Kondratyuk, Kudratov, 2002)] and North America [USA (Hafellner et al., 2002; Knudsen, Kocourková, 2007)].

Epilichen glauconigellus (Nyl.) Hafellner — 15: on thallus of *Baeomyces carneus* Flörke growing on soil, *LK 116*, LE F-358630.

Previously reported from two locations on Nordenskiöld Land (Zhurbenko, Brackel, 2013).

Geltingia associata (Th. Fr.) Alstrup et D. Hawksw. — 15: on thallus of *Ochrolechia frigida* (Sw.) Lynge growing on soil, *LK 116*, LE F-358628.

Previously reported from Albert I Land (Fries, 1867, as *Lecidea associata* Th. Fr.; Rambold, Triebel, 1990), Nordaustlandet (Fries, 1867, as *Lecidea associata*), Oskar II Land (Elvebakk, 1984, as *Nesolechia associata* (Th. Fr.) Sacc. et D. Sacc.) and Nordenskiöld Land (Zhurbenko, Brackel, 2013).

Lasiosphaeriopsis stereocaulicola (Linds.) O. E. Erikss. et R. Sant. — 12, 20: at the base of pseudopodetium of *Stereocaulon alpinum* and *Stereocaulon* sp. growing on soil, LK 164, LK 175, LE F-358621, LE F-358643.

Previously reported from Ny-Friesland (Fries, 1867, as *Sphaeria* sp.; Eriksson, Santesson, 1986), Sørkapp Land (Alstrup, Olech, 1993), Nordaustlandet (Zhurbenko, 2010; Zhurbenko, Brackel, 2013; Konoreva, Chesnokov, 2021) and Nordenskiöld Land (Zhurbenko, 2010).

Lichenostigma alpinum (R. Sant. et al.) Ertz et Diederich — 2, 3, 6, 10, 16, 17, 19: on thallus of *Ochrolechia frigida* growing on soil, mosses, plant debris and wood, LK 69, LK 74, LK 108, LK 118, LK 135, LK 149, LK 155, LK 157, LE F-358609, LE F-358610, LE F-358615, LE F-358619, LE F-358631, LE F-358635.

Previously reported as *Phaeosporobolus alpinus* R. Sant. et al. from Haakon VII Land (Alstrup, Hawksworth, 1990), Edgeøya (Aptroot, Alstrup, 1991), Sørkapp Land (Alstrup, Olech, 1993), Bünsow Land (Zhurbenko, Alstrup, 2004; Zhurbenko, Brackel, 2013), Albert I Land, Nordenskiöld Land, Dickson Land and Nordaustlandet (Zhurbenko, Brackel, 2013).

Merismatium nigrtellum (Nyl.) Vouaux — 19: on thallus of *Lopadium pezizoideum* (Ach.) Körb. and *Biatora subduplex* (Nyl.) Räsänen ex Printzen growing on soil, LK 163, KPABG 21536.

Previously reported from Sørkapp Land (Alstrup, Olech, 1993), Nordenskiöld Land, Bünsow Land and Dickson Land (Zhurbenko, Brackel, 2013).

Muellerella erratica (A. Massal.) Hafellner et V. John — 21: on *Lecanora polytropia* s. l. growing on stone, LK 187, LE F-355659.

Previously reported from Nordenskiöld Land, Albert I Land, Bünsow Land and Dickson Land (Zhurbenko, Brackel, 2013).

***M. lichenicola** (Sommerf.) D. Hawksw. — 2, 3, 7, 17, 19: on thallus of *Porpidia crustulata* (Ach.) Hertel et Knoph, *Lecidea auriculata* Th. Fr., *L. lapicida* var. *pantherina* Ach. and *Rhizocarpon geographicum* growing on stones, LK 66, LK 85, LK 117, LK 136, LK 152, LE F-358608, LE F-358611, LE F-358616, LE F-358636, LE F-358640.

Previously reported from Ny-Friesland and Nordaustlandet [Fries, 1867, as *Endococcus pygmaeus* (Körb.) Th. Fr., revised by R. Santesson according to Elvebakk, Hertel, 1996].

M. pygmaea (Körb.) D. Hawksw. s. l. — 8, 13: on thalli of *Lecidea praenubila* Nyl. and *Tephromela atra* (Huds.) Hafellner growing on stones, LK 97, LK 139, LE F-355155a, LE F-358617.

Previously reported from Albert I Land, Ny-Friesland, Nordaustlandet (Fries, 1860, 1867), Bjørnøya (Paulson, 1923; Lyng, 1926), Haakon VII Land (Hafellner, 1982) and Edgeøya (Aptroot, Alstrup,

1991). *Muellerella pygmaea* s. str. is known from Albert I Land, Edgeøya (Zhurbenko, Brackel, 2013) and Nordenskiöld Land (Triebel, 1989).

***Plectocarpon linitae** (R. Sant.) Wedin et Hafellner — 9: on thallus of *Lobaria linita* (Ach.) Rabenh. growing on soil, LK 146, LE F-358618.

Previously reported from Sørkapp Land [Alstrup, Olech, 1993, as *Plectocarpon lichenum* (Sommerf.) D. Hawksw.].

Sclerococcum deminutum (Th. Fr.) Ertz et Diederich — 16: on thallus of *Biatora cuprea* (Sommerf.) Fr. growing on soil, LK 125, LE F-358632.

This is a common and widespread species in the Arctic (Kristinsson *et al.*, 2010; Spribille *et al.*, 2023; Zhurbenko, 2025) also known from many regions of Svalbard growing on various hosts (Zhurbenko, Brackel, 2013).

Sphaerellothecium araneosum (Rehm ex Arnold) Zopf — 19: on thallus of *Ochrolechia grimmiae* Lyng. growing on dead *Racomitrium lanuginosum* (Hedw.) Brid., LK 159, LE F-358641.

Previously reported from Sørkapp Land (Alstrup, Olech, 1993), Edgeøya, Nordenskiöld Land, Oskar II Land, Dickson Land, Albert I Land and Nordaustlandet (Zhurbenko, Brackel, 2013).

!**S. soechtingii** Zhurb. et Alstrup — 17, 18: on thallus of *Arthrorhaphis alpina* (Schaer.) R. Sant. growing on soil, LK 141, LK 143, LE F-358637, LE F-358638.

The fungus has small ascomata, the characteristic iodine reactions, the superficial net of dark brown vegetative hyphae and narrowly soleiform, lower cells narrower than the upper ones, (1–)3(–5)-transseptate or rarely submuriform ascospores (Zhurbenko, 2007).

The species was first reported from Austria, Norway and Russia (Zhurbenko, 2007) and later also from Switzerland (Zimmermann, 2021).

!**Stigidium fuscatae** (Arnold) R. Sant. — 2: on squamules of *Acarospora fuscata* growing on stone, LK 66, LE F-355663.

The species is rather common and widespread in the Northern Hemisphere (Brackel, 2014).

S. mitchellii Cl. Roux et Bricaud — 1: on thallus and apothecia of *Psoroma hypnorum*, growing on soil, LK 54, LE F-358607.

The species is known from several locations in Nordenskiöld Land (Zhurbenko, 2009b; Zhurbenko, Brackel, 2013).

An enigmatic 'lichen' — 22: on thallus of *Pilophorus cereolus* (Ach.) Th. Fr. growing on stone, LK 192, det. Zhurbenko, LE F-355660. A lichen-like association habitually resembling a species of *Sphaerellothecium* Zopf was observed on thallus of saxicolous lichen *Pilophorus cereolus* (Fig. 2). Similar associations of unclear origin were described and illustrated in Zhurbenko, Triebel (2008) and Zhurbenko (2019) based on specimens from northern Norway and arctic Russia. These associations morphologically resemble gonocysts; however, the latter have a different ontogeny and do not form a superficial network of vegetative hyphae.

Although the material on which this study is based was collected to identify the local lichen

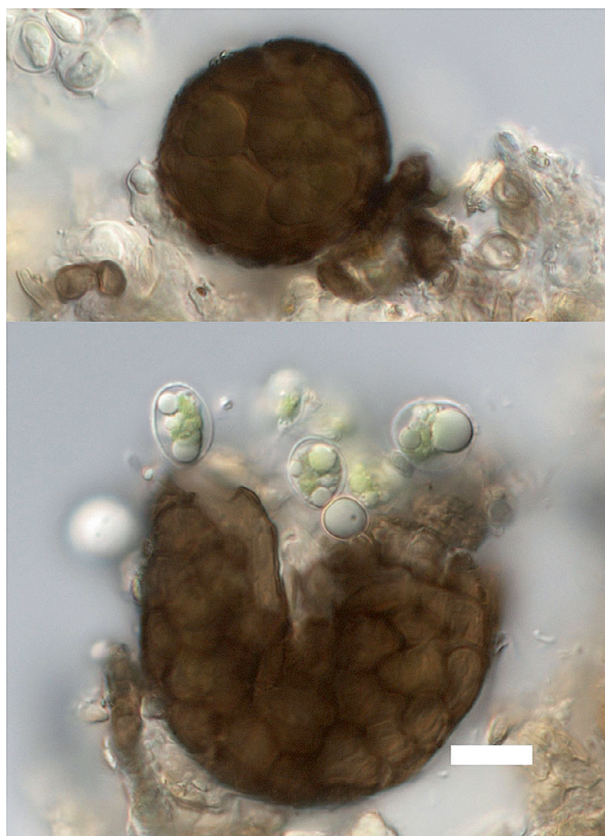


Fig. 2. An enigmatic 'lichen' growing on thallus of *Pilophorus cereolus* (LE F-355660). Perithecium-like structures filled with algae, formed on well-developed brown superficial hyphae, in water. Scale bar: 10 μ m.

flora, meaning that lichen parasites were not specifically collected, the results obtained (one species new to the Arctic and five species new to the archipelago) turned out to be quite significant. This may indicate that the diversity of lichenicolous fungi in Spitsbergen, of which 142 species are currently known, is still far from fully revealed.

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