

Interesting records of lichens on the coast of Baydaratskaya Bay (Yamal-Nenets Autonomous District, Russia)

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Abstract: 38 rare or new to certain areas lichen species are recorded from two localities on the coast of Baydaratskaya Bay of the Kara Sea. *Micarea lapillicola* and *Xylographa opegraphella* are new for the Arctic; *Micarea denigrata* and *Pycnora leucococca* – for the Russian Arctic. 10 species are new for the Polar Ural area of the Arctic; 31 species are new for the Yamal Peninsula.

Kokkuvõte: Huvitavaid samblikuleide Baidaratskaja lahe rannikult (Jamal-Neenetsi autonoomne ringkond, Venemaa).

Teatatakse 38 haruldase või mõnele piirkonnale uue samblikuliigi leidmisest Kara mere äärest, Baidaratskaja lahe rannikult. *Micarea lapillicola* ja *Xylographa opegraphella* on uued liigid Arktikale; *Micarea denigrata* ja *Pycnora leucococca* on uued Venemaa arktilistele aladele. Kümme liiki on esmasleiud Põlaar-Uraalis ja 31 liiki – Jamali poolsaarel.

INTRODUCTION

The Baydaratskaya Bay is situated in the western part of the Kara Sea, in the Russian Arctic Region (Fig. 1).

The published data about lichens of the Baydaratskaya Bay coast are very fragmentary (Andreev, 1984; Kotlov, 1994; Pristyazhnyuk, 1994), however, the role of lichens in plant communities of this area is presently under research (Ektova & Magomedova, 2006; Magomedova & Ektova, 2006a).

The research area is located in the south of the typical (north hypoarctic) tundra's subzone. The vegetation includes different variations of dry and swampy tundras, willow shrubs and bogs. Sometimes, due to deflation process and very intensive reindeer pasturing different erosive plots develop which consist of bare sand with rubble inclusions.

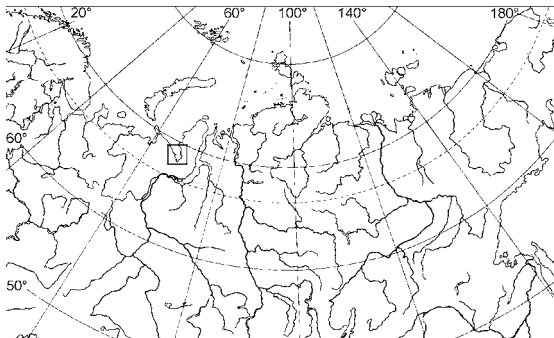


Fig. 1. Location of the Baydaratskaya Bay.

MATERIALS AND METHODS

The author investigated the following two localities in July and August 2007 (Fig. 2).

I. The south-western coast of Baydaratskaya Bay, Yamal-Nenets Autonomous District, Priuralsky Administrative District, to the east of the mouth of the Ngoyuyakha (Oyuyakha) River, about 68°50'N, 66°50'E.

II. The east coast of Baydaratskaya Bay, Yamal-Nenets Autonomous District, Yamalsky Administrative District, near the mouth of the Yarayakha River, about 69°20'N, 68°10'E.

According to Andreev et al. (1996) and Kristinsson et al. (2006), locality I is situated in the Polar Ural area and locality II – in the Yamal-Gydan area of the Arctic.

RESULTS

Altogether 146 lichen species were recorded from the two localities, including 97 species in locality I and 108 species in locality II. Detailed collection data are presented below for 38 species which appear new for certain territories. *Micarea lapillicola* and *Xylographa opegraphella* are new for the Arctic; *Micarea denigrata* and *Pycnora leucococca* – for the Russian Arctic (Andreev et al., 1996; Kristinsson et al., 2006). 10 lichen species are new for the Polar Ural area of the Arctic. 31 species are new for the Yamal Peninsula, including 24 species that are new for the Yamal-Gydan area of the Arctic (Andreev et al., 1996; Magomedova et al., 2006; Kristinsson et al., 2006; Magomedova & Ektova, 2006b).



Fig. 2. Investigated localities.

List of species

The nomenclature follows Andreev et al. (1996), Blanco et al. (2004) and Santesson et al. (2004). Numbers I and II indicate the two localities listed above. Explanation of symbols: * – new for the Polar Ural area, + – new for the Yamal Peninsula, ** – new for the Yamal-Gydan area.

+ *ACAROSPORA VERONENSIS* A. Massal. – II: 69°16'04.2"N 68°05'21.8"E, dry tundra with erosive plots on the upper slope, on pebbles on disturbed soil, 3.08.2007 (LE).

** *ASPICILIA PERRADIATA* (Nyl.) Hue – II: 69°12'42.0"N 68°11'52.9"E, rubbly slope in the valley of the Lyyakha River, on pebbles, 8.08.2007 (LE).

* ** *BACIDIA XYLOPHILA* Malme – I: 68°50'34.5"N 66°55'26.5"E, boggy tundra, on wood of log, 27.07.2007 (LE); II: 69°16'13.2"N 68°07'28.3"E, building ruins among boggy tundra, on wood, 6.08.2007. Endemic species for the Siberian Arctic. Formerly known from the arctic coasts of East Siberia only (Malme, 1932).

BACIDIA SP. – II: 69°14'40.7"N 68°14'57.0"E, plot of disturbed rubbly soil in an elevated place, on small stones, 8.08.2007. Probably an unknown species. Thallus thick to warty, areolate, dark-fuscous-brown, slightly glossy; apothecia almost entirely sunken, slightly projecting above thallus surface, flat, with protruding margins, black; epithecium green, hymenium colorless, hypothecium brown to

dark-brown; spores needle-like, with indistinct septa, 30–50×1–2 μ.

** *BIATORA MEIOCARPA* (Nyl.) Arnold – II: 69°18'41.0"N 68°06'18.4"E, dry tundra on ravine slope, on bark of small *Salix* sp. 2.08.2007 (LE); 69°20'29.9"N 68°09'12.1"E, willow shrubs, on bark of dead *Salix lanata*, 10.08.2007. In the Russian Arctic formerly known from Chukotka (Andreev et al., 1996; Kristinsson et al., 2006).

* ** *BUELLIA ECTOLECHIOIDES* (Vain.) Erichsen – I: 68°49'32.2"N 66°53'03.2"E, dry tundra, on pebbles, 29.07.2007 (LE); II: 69°16'04.2"N 68°05'21.8"E, dry tundra with erosive plots on the upper slope, on pebbles on disturbed soil, 3.08.2007; 69°14'40.7"N 68°14'57.0"E, plot of disturbed rubbly soil on elevated place, on small stones and pebbles, 8.08.2007; 69°12'42.0"N 68°11'52.9"E, rubbly slope in valley of the Lyyakha River, on pebbles, 8.08.2007. Often intermixed with *B. aethalea* (Ach.) Th. Fr.; distinguished from it by dispersed thallus, consisting of separate areoles. In the Russian Arctic formerly known from Novaya Zemlya and Chukotka (Andreev et al., 1996; Kristinsson et al., 2006).

** *B. INSIGNIS* (Nägeli ex Hepp) Körb. – I: 68°49'41.8"N 66°52'15.5"E, dry tundra, on mosses, 29.07.07; II: 69°17'39.0"N 68°04'49.5"E, shore of lagoon, on rotting wood of logs, 3.08.2007 (LE).

* *B. VILIS* Th. Fr. – II: 69°12'42.0"N 68°11'52.9"E, rubbly slope in valley of the Lyyakha River, on pebbles, 8.08.2007 (LE). In the Russian Arctic formerly known from Novaya Zemlya, the Gydan Peninsula and Chukotka (Andreev, 1994; Andreev et al., 1996; Kristinsson et al., 2006).

* + *CALOPLACA CAESIORUFELLA* (Nyl.) Zahlbr. – I: 68°49'30.3"N 66°51'59.5"E, lake shore, on wood of board, 29.07.2007; II: 69°16'04.2"N 68°05'21.8"E, dry tundra with erosive plots on the upper slope, on wood of dead shrubs, 3.08.2007; 69°16'13.2"N 68°07'28.3"E, building ruins among boggy tundra, on wood, 6.08.2007; 69°20'29.9"N 68°09'12.1"E, willow shrubs, on bark of dead *Salix lanata*, 10.08.2007; 69°20'24.3"N 68°08'16.9"E, humid tundra, on bark of dead *Betula nana*, 10.08.2007.

** *IMMERSARIA ATHROOCARPA* (Ach.) Rambold & Pietschm. – II: 69°14'40.7"N 68°14'57.0"E, plot of disturbed rubbly soil in an elevated place, on small stones, 8.08.2007 (LE).

- **LECANIA SUBFUSCULA (Nyl.) S. Ekman – II: 69°18'05.9"N 68°03'17.7"E, sandy seashore, on shed reindeer horns, 5.08.2007 (LE).
- *LECANORA INTRICATA (Ach.) Ach. – II: 69°14'40.7"N 68°14'57.0"E, plot of disturbed rubbly soil in an elevated place, on pebbles, 8.08.2007.
- **L. MARGINATA (Schaer.) Hertel & Rambold – II: Ibid., on small stones, 8.08.2007 (LE).
- **L. ORAE-FRIGIDAE R. Sant. – I: on wood; II: on wood. Frequent.
- *LECIDIA RAMULOSA Th. Fr. – II: 69°18'42.0"N 68°05'30.3"E, meadows in the stream valley, on plant debris, 2.08.2007 (LE).
- *L. TESSELLATA Flörke – I: 68°45'57.8"N 66°43'17.7"E, sheer rocks with west exposition on the right bank of the Ngoyuyakha River, on stones, 28.07.2007 (LE).
- **L. TURGIDULA Fr. – II: 69°17'44.6"N 68°05'00.6"E, dry tundra, on wood of board, 2.08.2007 (LE).
- **LECIDELLA CARPATHICA Korb. – II: 69°20'13.5"N 68°07'37.0"E, dry spotty tundra on top of hill, on bones, 10.08.2007 (LE).
- **L. ELAEOCHROMA (Ach.) M. Choisy – II: 69°20'29.9"N 68°09'12.1"E, willow shrubs, on bark of dead *Salix lanata*, 10.08.2007 (LE).
- **MICAREA DENIGRATA (Fr.) Hedl. – II: 69°16'13.2"N 68°07'28.3"E, building ruins among boggy tundra, on wood, 6.08.2007 (LE). New species for the Russian Arctic. In the Arctic formerly known from the Canadian Arctic Region and West Greenland (Kristinsson et al., 2006).
- **M. LAPILLICOLA (Vain.) Coppins & Muhr – II: 69°14'40.7"N 68°14'57.0"E, plot of disturbed rubbly soil in an elevated place, on pebbles, 8.08.2007 (LE). New species for the Arctic. In Russia formerly known from Karelia only (Fadeeva et al., 2007).
- *M. TURFOSA (A. Massal.) Du Rietz – I: 68°51'00.0"N 66°55'05.1"E, boggy tundra, on plant debris (dead mosses), 30.07.2007 (LE). Often intermixed with *M. melaena* (Nyl.) Hedl.; distinguished from it by darker, blackish thallus, lighter hypothecium with reddish-brown spots, having 1-celled spores besides 2–4-celled, growing on bare turf and mosses (*M. melaena* prefers wood), and being distributed mainly in arctic and alpine regions.
- **MIRIQUIDICA GRISEOATRA (Flot.) Hertel & Rambold – II: 69°14'40.7"N 68°14'57.0"E, plot of disturbed rubbly soil in an elevated place, on pebbles, 8.08.2007 (LE).
- *PERTUSARIA SOLITARIA H. Magn. – I: 68°45'57.8"N 66°43'17.7"E, sheer rocks with west exposition on the right bank of the Ngoyuyakha River, on stones, 28.07.2007 (LE).
- *PHEOPHYSCIA ENDOCOCINA (Korb.) Moberg – I: Ibid., on stones, 28.07.2007.
- *PLACYNTHIELLA ICMALEA (Ach.) Coppins & P. James – I: 68°51'00.0"N 66°55'05.1"E, boggy tundra, on bare turf, 25.07.2007; 68°50'36.7"N 66°56'49.1"E, boggy tundra, on dead *Sphagnum* mosses, 27.07.2007.
- **PSEUDEPHEBE MINUSCULA (Nyl. ex Arnold) Brodo & D. Hawksw. – II: 69°12'42.0"N 68°11'52.9"E, rubbly slope in the valley of the Lyyakha River, on pebbles, 8.08.2007.
- **PYCNORA LEUCOCOCCA (R. Sant.) R. Sant. – II: 69°20'24.3"N 68°08'16.9"E, humid tundra, on bark of dead *Betula nana*, 10.08.2007 (LE). New species for the Russian Arctic. In the Arctic formerly known from West Greenland only (Kristinsson et al., 2006).
- **RHIZOCARPON EXPALlescens Th. Fr. – II: 69°16'04.2"N 68°05'21.8"E, dry tundra with erosive plots on the upper slope, on pebbles on disturbed soil, 3.08.2007. In Russia formerly known from Karelia, Murmansk Region, Novaya Zemlya and Taimyr Peninsula (Andreev et al., 1996; Kristinsson et al., 2006; Fadeeva et al., 2007; Urbanavichus et al., 2008).
- **R. FERAX H. Magn. – II: 69°20'13.5"N 68°07'37.0"E, dry spotty tundra on top of hill, on pebbles on melkozem spots, 10.08.2007.
- *R. LECANORINUM Anders – II: 69°14'40.7"N 68°14'57.0"E, plot of disturbed rubbly soil in an elevated place, on small stones, 8.08.2007. In the Russian Arctic formerly known from Franz-Josef Land and the Gydan Peninsula (Andreev, 1994; Andreev et al., 1996; Kristinsson et al., 2006).
- **R. OEDERI (Weber) Korb. – II: 69°16'04.2"N 68°05'21.8"E, dry tundra with erosive plots on the upper slope, on pebbles on disturbed soil, 3.08.2007; 69°20'13.5"N 68°07'37.0"E, dry spotty tundra on top of hill, on pebbles on melkozem spots, 10.08.2007 (LE). In the Russian Arctic formerly known from Novaya Zemlya only (Andreev et al., 1996; Kristinsson et al., 2006).
- *RINODINA SEPTENTRIONALIS Malme – II: 69°20'29.9"N 68°09'12.1"E, willow shrubs, on bark of dead *Salix lanata*, 10.08.2007.
- **STEREOCAULON CUMULATUM (Sommerf.) Timdal – II: 69°15'38.2"N 68°05'40.1"E, dry tundra, on disturbed soil, 9.08.2007 (LE).

- ***THELIDIUM DECIPIENS** (Nyl.) Kremp. – I: 68°45'57.8"N 66°43'17.7"E, sheer rocks with west exposition on the right bank of the Ngoyuyakha River, on carbonaceous stones, 28.07.2007 (LE). In the Russian Arctic formerly known from Novaya Zemlya and Wrangel Island (Andreev et al., 1996; Kristinsson et al., 2006).
- ****UMBILICARIA PROBOSCIDEA** (L.) Schrad. – I: 68°50'07.6"N 66°53'25.0"E, dry disturbed tundra, on pebbles on melkozem spots, 26.07.2007; 68°45'57.8"N 66°43'17.7"E, sheer rocks with west exposition on the right bank of the Ngoyuyakha River, on stones, 28.07.2007; II: 69°14'40.7"N 68°14'57.0"E, plot of disturbed rubbly soil in an elevated place, on small stones, 8.08.2007.
- *****U. TORREFACTA** (Lightf.) Schrad. – I: 68°50'34.5"N 66°55'26.5"E, boggy tundra, on stone, 27.07.2007; 68°45'57.8"N 66°43'17.7"E, sheer rocks with west exposition on the right bank of the Ngoyuyakha River, on stones, 28.07.2007; II: 69°14'40.7"N 68°14'57.0"E, plot of disturbed rubbly soil in an elevated place, on small stones, 8.08.2007.
- ******XYLOGRAPHA OPEGRAPHELLA** Nyl. ex Rothr. – I: on wood; II: on wood. Frequent. New species for the Arctic. In Russia formerly known from Karelia and Murmansk Region (Fadeeva et al., 2007; Urbanavichus et al., 2008). One of the most frequently found species on wood in the research area. Growing exclusively on old wood on seashores (Randlane, 2006). It distinguished from close related, widely distributed species *X. parallela* (Ach.: Fr.) Fr. by more distinct, mainly thick to verrucose thallus, less longer, often branched apothecia, smaller spores (9–13×3–5 μ), containing norstictic acid.
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