

Lichens and allied fungi from the Pechenga district and surroundings (Lapponia Petsamoënsis, Murmansk Region, Russia)

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Abstract: 168 species of lichens are specified for the Pechenga district and surroundings. *Microcalicium ablneri* and *Placidium norvegicum* are new for the Murmansk Region. 18 species are new for Lapponia Petsamoënsis. *Stereocaulon dactylophyllum* is included into the Red Data Book of the Russian Federation. *Caloplaca diphodes*, *Dermatocarpon meiophyllizum*, *Haematomma ochroleucum*, *Phlyctis argena* and *Stereocaulon dactylophyllum* are included into the Red Data Book of the Murmansk Region.

Keywords: lichens; new records; Pechenga and Kola districts; Murmansk Region

INTRODUCTION

Lapponia Petsamoënsis, one of the biogeographic provinces of the Murmansk Region, is located in the northwestern part of the region, and is relatively well studied from the point of view of lichens diversity. Investigation of lichens in the Murmansk Region started in 19th century. Before the World War II Lapponia Petsamoënsis belonged to Finland and was studied by Finnish lichenologists (Vainio, 1881; Räsänen, 1943). Currently about 750 species of lichens and allied fungi are known for Lapponia Petsamoënsis, constituting about 60% of all lichens known from the Murmansk Region (Urbanavichus et al., 2008; Urbanavichus, 2014; 2016; Konoreva, 2016). Pasvik Reserve is the most studied area of Lapponia Petsamoënsis (Fadeeva et al., 2011; 2013; Urbanavichus, Fadeeva, 2013; 2014; 2015; Urbanavichus, 2015; 2016). Pechenga Tundra Mountains were studied mainly by Räsänen (1943); nowadays several localities noted in earlier lichenological literature have been destroyed during the economic activity of Pechenganikel factory.

MATERIAL AND METHODS

In September 2013 we organized a field trip to the Pechenga and Kola districts of the Murmansk Region. We mainly concentrated on the area studied by the Finnish botanists (Karsten,

1866; Vainio, 1881; Räsänen, 1943; Rikkinen, 1987; Uotila, 2013). About 150 field samples (about 700 specimens of lichens) were collected in ten localities. Localities 1–8 belong to the Pechenga district; localities 9 and 10 belong to the Kola district (Fig. 1). The specimens were determined in the laboratory of Flora and Vegetations of Polar-Alpine Botanical Garden and Institute and stored in KPABG. The nomenclature follows Santesson's list (<http://www.evolutionsmuseet.uu.se/databaser/santesson.html>).

Studied localities (Fig. 1):

1. Pechenga district, floodplain of Pechenga River, rocks on river banks, 69°19'44.1"N, 30°53'40.0"E, altitude 88 m, 17.09.2013.
2. Pechenga district, floodplain of Pechenga River, near waterfall, rocks on river banks, 69°19'28.0"N, 30°52'39.9"E, altitude 86 m, 17.09.2013.
3. Pechenga district, floodplain of Kuvernerinyoki and rocks in river valley, *Betula* forest with big stones, 69°30'31.6"N, 30°27'42.6"E, altitude 104 m, 18.09.2013.
4. Pechenga district, near Pitkyaoluokko Bay, Kuetsyaur Lake, *Betula* forest with *Populus tremula*, 69°29'53.4"N, 30°17'18.3"E, altitude 74 m, 19.09.2013.
5. Pechenga district, ibid, 69°29'53.6"N, 30°17'18.2"E, altitude 74 m, 19.09.2013.

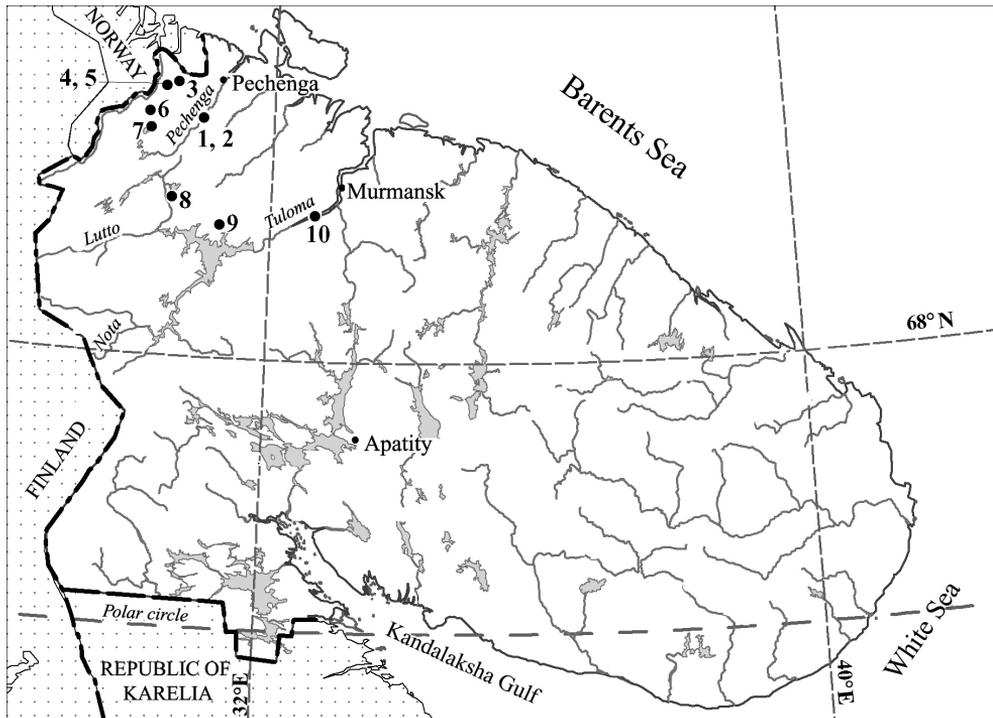


Fig. 1. Map of the Murmansk Region with the studied localities (black numbered dots).

6. Pechenga district, waterfalls on Schuonijoki River, *Betula* forest with *Populus tremula*, 69°20'41.9"N, 30°02'40.9"E, altitude 72 m, 19.09.2013.
7. Pechenga district, neighborhoods of Shuoniyaur Lake, floodplain of Schuonijoki River, boulders in river, 69°15'44.3"N, 30°05'23.1"E, altitude 178 m, 20.09.2013.
8. Pechenga district, near Hutoyavr Lake, alder thicket with fern and *Picea-Betula* forest, 68°52'28.1"N, 30°28'30.3"E, altitude 160 m, 21.09.2013.
9. Kola district, on the way to water reservoir Verhnetulomskoe, near Solozero Lake, river and lake with boulders, 68°44'34.8"N, 31°12'25.7"E, altitude 100 m, 21.09.2013.
10. Kola district, near bridge over Päive River, 68°48'46.4"N, 32°40'21.4"E, altitude 19 m, 22.09.2013.

LIST OF SPECIES

Data on localities and substrates are provided for each species. Taxa indicated with an asterisk

(*) are new for Lapponia Petsamoënsis (Lps), taxa marked with "S" are reported for Lapponia Petsamoënsis for the second time (they were known only from the Pasvik Nature State Reserve so far), and species signed by "!" are included in the Red Data Book of the Murmansk Region (2014).

ACAROSPORA SINOPICA (Wahlenb.) Körb. – 5, dry rock wall, on stone.

ADELOLECIA KOLAËNSIS (Nyl.) Hertel & Rambold – 4, on stone.

Note – This species was stated for the Murmansk Region only based on the literature (Nylander, 1882; Räsänen, 1943) and was confirmed by our findings.

ALECTORIA OCHROLEUCA (Hoffm.) A. Massal. – 2, 9, on soil and plant debris.

ALECTORIA NIGRICANS (Ach.) Nyl. – 2, on soil and plant debris.

AMANDINEA PUNCTATA (Hoffm.) Coppins & Scheid. – 4, 6, 7, 10, on bark of *Salix* sp., *Ulmus* sp., *Betula* sp., *Alnus incana*.

AMYGDALARIA PANAEOLA (Ach.) Hertel & Brodo – 7, 9, on stone.

- ARCTOPARMELIA CENTRIFUGA (L.) Hale – 3, 5, 8, on stone.
- ARCTOPARMELIA INCURVA (Pers.) Hale – 2, on dead branches (lignum).
- ARTHONIA MEDIELLA Nyl. – 5, 10, on bark of *Sorbus gorodkovii*, *Salix* sp., *Alnus incana*.
- ARTHONIA RADIATA (Pers.) Ach. – 5, on bark of *Salix* sp.
- ARTHORRHAPHIS ALPINA (Schaer.) R. Sant. – 5, on soil.
- ARTHORRHAPHIS CITRINELLA (Ach.) Poelt – 5, 9, on soil.
- §BACIDINA INUNDATA (Fr.) Vězda – 1, on stone.
- BAEOMYCES PLACOPHYLLUS Ach. – 2, 9, in surroundings of waterfall, on soil and on stone near waterfall.
- BAEOMYCES RUFUS (Huds.) Rebent. – 2, on soil on roadside.
- BELLEMERIA CINEREORUFESCENS (Ach.) Clauzade & Cl. Roux – 3, 10, on stone.
- BIATORA GLOBULOSA (Flörke) Fr. – 8, on bark of *Betula* sp., on polyporoid fungi.
- §BIATORA SUBDUPLEX (Nyl.) Räsänen ex Printzen – 5, 7, on soil and on saxicolous mosses.
- BRYORIA FUSCESCENS (Gyeln.) Brodo & D. Hawksw. – 8, 9, 10, on stone, soil and bark of *Betula* sp.
- §BRYORIA NADVORNIKIANA (Gyeln.) Brodo & D. Hawksw. – 8, on branches of *Picea abies*.
- BRYORIA SIMPLICIOR (Vain.) Brodo & D. Hawksw. – 8, on bark of *Betula* sp., on branches of *Picea abies*.
- BUELLIA SCHAEERERI De Not. – 1, on bark of *Sorbus gorodkovii*.
- CALICIUM DENIGRATUM (Vain.) Tibell – 8, on lignum.
- CALICIUM TRABINELLUM (Ach.) Ach. – 8, on bark and lignum of *Betula* sp.
- !CALOPLACA DIPHYODES (Nyl.) Jatta – 10, on stone. Note – The species was known in the Murmansk Region only from old collections (as *Callopiisma helygeoides* and *Lecanora helygeoides* in Vainio 1881 and Räsänen 1943). From this locality it was already cited by Frolov & Konoreva (2016).
- CANDELARIELLA KUUSAMOËNSIS Räsänen – 5, on stone. Rare in Russia and in the Murmansk Region.
- CANDELARIELLA VITELLINA (Hoffm.) Müll. Arg. – 5, 8, rock near waterfall, on stone.
- *CARBONEA VORTICOSA (Flörke) Hertel – 5, 8, rock near waterfall, on stone. Rare in the Murmansk Region.
- §CATILLARIA NIGROCLAVATA (Nyl.) Schuler – 6, on bark of *Betula* sp. Rare in the Murmansk Region.
- CATOLECHIA WAHLENBERGII (Ach.) Körb. – 2, on soil. Rare in the Murmansk Region.
- CETRARIA ACULEATA (Schreb.) Fr. – 2, rock near waterfall, on basic soil on stone.
- CETRARIA ERICETORUM Opiz – 2, 8, rock near waterfall, on basic soil on stone.
- CETRARIA MURICATA (Ach.) Eckfeldt – 2, on soil and plant debris.
- CETRARIA SEPINCOLA (Ehrh.) Ach. – 2, 7, 8, on bark of *Betula* sp. among mosses.
- CETRARIELLA COMMIXTA (Nyl.) A.Thell & Kärnefelt – 1, on stone.
- §CHAENOTHECA BRUNNEOLA (Ach.) Müll. Arg. – 8, on lignum.
- CHAENOTHECA TRICHIALIS (Ach.) Th.Fr. – 8, on branches of *Picea abies*.
- CLADONIA AMAUROCRAEA (Flörke) Schaer. – 5, 8, on soil.
- CLADONIA ARBUSCULA (Wallr.) Flot. – 1, 8, on basic soil on stone near river.
- CLADONIA BOTRYTES (K.G. Hagen) Willd. – 8, on polyporoid fungi, on lignum.
- CLADONIA CHLOROPHAEA (Flörke ex Sommerf.) Spreng. – 3, 8, on soil and mosses.
- CLADONIA COCCIFERA (L.) Willd. – 2, rock near waterfall, on basic soil on stone.
- CLADONIA CORNUTA (L.) Hoffm. – 1, 8, on basic soil on stone near river.
- CLADONIA DEFORMIS (L.) Hoffm. – 1, 3, 9, on stone near river, on soil.
- CLADONIA MACILENTA Hoffm. – 8, on lignum, on polyporoid fungi.
- CLADONIA MITIS Sandst. – 2, 8, rocks near waterfall, on soil.
- CLADONIA PLEUROTA (Flörke) Schaer. – 3, 8, on basic soil on stone, on soil.
- CLADONIA PYXIDATA (L.) Hoffm. – 2, rocks near waterfall, on basic soil on stone.
- CLADONIA SQUAMOSA Hoffm. – 3, 7, 9, on basic soil on stone, on soil.
- CLADONIA SUBFURCATATA (Nyl.) Arnold – 2, rocks near the waterfall, on basic soil on stone.
- *COLLEMA FLACCIDUM (Ach.) Ach. – 5, 9, on stone. Rare in the Murmansk Region.
- COLLEMA GLEBULENTUM (Nyl. ex Cromb.) Degel. – 5, 8, on stone. Rare in the Murmansk Region.
- §CYSTOCOLEUS EBENEUS (Dillwyn) Thwaites – 3, 8, on stone.

- DERMATOCARPON LURIDUM (With.) J. R. Laundon – 5, 9, 10, on stone lapped by water. Rare in the Murmansk Region.
- *!DERMATOCARPON CF. MEIOPHYLLIZUM Vain. – 8, on stone. Rare in the Murmansk Region.
- DIBAEIS BAEOMYCES (L.f.) Rambold & Hertel – 4, 9, on stone.
- DIPLOSCHISTES MUSCORUM (Scop.) R. Sant. – 8, on stone.
- FLAVOCETRARIA NIVALIS (L.) Kärnefelt & A.Thell – 2, 9, rocks near waterfall, on soil on stone.
- *FUSCIDEA PUSILLA Tønsberg – 3, 7, on bark of *Betula* sp.
- !HAEMATOMMA OCHROLEUCUM (Neck.) J. R. Laundon – 3, on stone. Rare in the Murmansk Region.
- §HELOCARPON CRASSIPES Th. Fr. – 3, 7, on soil and mosses on stone.
- HYPOCENOMYCE SCALARIS (Ach.) M. Choisy – 6, 8, on lignum of *Betula* sp.
- HYPOGYMNIA AUSTRERODES (Nyl.) Räsänen – 2, rocks near waterfall, on stone, on lignum.
- HYPOGYMNIA PHYSODES (L.) Nyl. – 2, 6, 7, 8, 9, 10, on bark and branches of *Betula* sp. and *Picea abies*, on lignum, on bark of *Salix* sp., on polyporoid fungi, on basic soil on stone.
- HYPOGYMNIA TUBULOSA (Schaer.) Hav. – 10, on bark of *Alnus incana*.
- ICMADOPHILA ERICETORUM (L.) Zahlbr. – 1, 7, on soil and mosses.
- IMSHAUGIA ALEURITES (Ach.) S. L. F. Mey. – 2, 8, near waterfall, on branches, bark and lignum of *Picea abies*.
- IONASPIS LACUSTRIS (With.) Lutzoni – 5, 7, on stone in water.
- JAPEWIA TORNOËNSIS (Nyl.) Tønsberg – 2, 7, on branches and bark of *Betula* sp.
- LECANORA ALBELLULA VAR. ALBELLULA (Nyl.) Th. Fr. – 3, 10, on bark of old growth *Betula* sp.
- LECANORA BOLIGERA (Norman ex Th. Fr.) Hedl. – 3, 4, 6, 7, 8, 10, on bark of *Alnus incana*, *Salix* sp., *Betula* sp., *Sorbus gorodkovii*, on plant debris, on branches of *Betula* sp.
- *LECANORA CAMPESTRIS (Schaer.) Hue – 5, 7, on stone.
- LECANORA CHLAROTERA Nyl. – 6, 7, 8, 10, on bark of *Betula* sp., *Alnus incana*, branches of *Picea abies*.
- LECANORA FUSCESCENS (Sommerf.) Nyl. – 2, 4, 6, 7, 8, near waterfall and lake, on branches and bark of *Salix* sp., *Betula* sp.
- LECANORA INTRICATA (Ach.) Ach. – 2, rocks near waterfall, on stone.
- LECANORA POLYTROPA (Ehrh. ex Hoffm.) Rabenh. – 1, 5, 7, on stone near river.
- LECANORA SYMMICTA (Ach.) Ach. – 10, on bark of *Alnus incana*.
- LECIDEA SILACEA (Hoffm.) Ach. – 2, on stone. Rare in the Murmansk Region.
- LECIDELLA ELAEOCHROMA (Ach.) M. Choisy – 10, on bark of *Alnus incana*.
- LEPTORHAPHIS EPIDERMIDIS (Ach.) Th. Fr. – 8, on bark of *Betula* sp.
- §LICHENOMPHALIA UMBELLIFERA (L.:Fr.) Redhead et al. – 3, 5, on soil.
- LOBOTHALLIA MELANASPIS (Ach.) Hafellner – 2, 5, rocks near waterfall, on stone.
- LOPADIUM CORALLOIDEUM (Nyl.) Lynge – 3, on basic soil on stone.
- MELANELIA HEPATIZON (Ach.) A. Thell – 1, 5, 9, on stone, basic soil on stone.
- MELANELIA STYGIA (L.) Essl. – 2, 3, 5, rocks near waterfall, on basic soil on stone, on stone.
- MELANOHALEA OLIVACEA (L.) O. Blanco et al. – 5, 6, 8, 10, on bark of *Salix* sp., *Alnus incana*, *Betula* sp., *Sorbus gorodkovii*, on branches of *Picea abies*.
- §MICAREA LAPILLICOLA (Vain.) Coppins & Muhr – 8, on stone. Rare in Russia and in the Murmansk Region.
- *MICAREA PRASINA Fr. – 8, on rotten wood.
- MICAREA RHABDOGENA (Norman) Hedl. – 8, on lignum. Rare in Russia and in the Murmansk Region (Konoreva, 2016).
- *MICROCALICIUM AHLNERI Tibell – 3, on lignum. Reported for the first time from the Murmansk Region. Rare in Russia and in the Murmansk Region.
- MIRIQUIDICA DEUSTA (Stenh.) Hertel & Rambold – 2, rocks near waterfall, on stone.
- MIRIQUIDICA GRISEOATRA (Flot.) Hertel & Rambold – 2, on stone.
- MIRIQUIDICA LEUCOPHAEA (Flörke ex Rabenh.) Hertel & Rambold – 5, on stone.
- MONTANELIA DISJUNCTA (Erichsen) Divakar et al. – 5, on stone.
- MYCOBLASTUS SANGUINARIUS (L.) Norman – 5, 8, 9, on bark, on basic soil on stone.
- §MYRIOSPORA SMARAGDULA (Wahlenb. ex Ach.) Nägeli ex Uloth – 5, 8, on stone.
- NEPHROMA ARCTICUM (L.) Torss. – 5, 8, on bark of *Betula* sp. and mosses.
- NEPHROMA PARILE (Ach.) Ach. – 5, 9, on stone.
- OCHROLECHIA ANDROGYNA (Hoffm.) Arnold – 3, 7, 8, on stone, on soil, on bark of *Betula* sp., on plant debris.

- OCHROLECHIA FRIGIDA (Sw.) Lynge – 2, 3, 5, 9, rocks near waterfall, on basic soil on stone, on soil.
- OPHIOPARMA VENTOSA (L.) Norman – 2, 5, rocks near waterfall, on stone.
- PARMELIA OMPHALODES (L.) Ach. – 2, 5, rocks near waterfall, on stone.
- PARMELIA SAXATILIS (L.) Ach. – 5, on stone.
- PARMELIA SULCATA Taylor – 2, 5, 8, 10, on bark of *Sorbus gorodkovii*, *Betula* sp., on branches.
- PARMELIOPSIS AMBIGUA (Wulfen) Nyl. – 4, 5, 6, 8, 9, 10, on bark of *Salix* sp., *Betula* sp., *Alnus incana*, *Sorbus gorodkovii*, branches of *Picea abies*, on mosses, on lignum.
- PARMELIOPSIS HYPEROPTA (Ach.) Arnold – 4, 8, 9, on bark of *Betula* sp.
- PELTIGERA DIDACTYLA (With.) J. R. Laundon – 5, near waterfall, on soil among mosses.
- *PELTIGERA ELISABETHAE Gyeln. – 5, on stone, on soil. Rare in the Murmansk Region.
- PELTIGERA LEUCOPHLEBIA (Nyl.) Gyeln. – 3, 5, on stone above mosses.
- §PELTIGERA NECKERI Hepp ex Müll.Arg. – 5, near waterfall, on soil among mosses.
- PELTIGERA RUFESCENS (Weiss) Humb. – 5, on soil and mosses.
- PELTIGERA VENOSA (L.) Hoffm. – 5, on soil and mosses.
- PHAEOPHYSCIA SCIASTRA (Ach.) Moberg – 5, on stone.
- *!PHLYCTIS ARGENA (Spreng.) Flot. – 8, on bark of *Betula* sp. Rare in the Murmansk Region.
- PHYSICIA CAESIA (Hoffm.) Fűrnr. – 3, 5, rocks, on stone.
- *PLACIDIUM NORVEGICUM (Breuss) Breuss – 3, 5, on stone. Reported for the first time from the Murmansk Region.
- §PLACYNTHIELLA DASAEA (Stirt.) Tønsberg – 8, on bark of *Betula* sp.
- PLACYNTHIUM ASPERELLUM (Ach.) Trevis. – 3, 5, on stone above water.
- PLACYNTHIUM FLABELLOSUM (Tuck.) Zahlbr. – 5, riverbed of dry periodically flooded creek, on stone.
- PLACYNTHIUM NIGRUM (Huds.) Gray – 3, 5, on stone.
- PLACYNTHIUM ROSULANS (Th. Fr.) Zahlbr. – 3, 5, on stone. Rare in Russia and in the Murmansk Region.
- PLATISMATIA GLAUCA (L.) W. L. Culb. & C. F. Culb. – 3, 9, on basic soil on stone.
- PORPIDIA FLAVICUNDA (Ach.) Gowan – 2, rocks near waterfall, on stone.
- PORPIDIA MELINODES (Körb.) Gowan & Ahti – 1, 3, on stone near river.
- PROTOPARMELIA BADIA (Hoffm.) Hafellner – 2, rocks near waterfall, on stone.
- PROTOPANNARIA PEZIZOIDES (Weber) P. M. Jørg. & S. Ekman – 3, on basic soil on stone.
- PROTOPARMELIOPSIS MURALIS (Schreb.) M. Choisy – 2, rocks near waterfall, on stone.
- *PROTOTHLENELLA LEUCOTHELIA (Nyl.) H. Mayrhofer & Poelt – 2, in surroundings of waterfall, on soil. Rare in Russia and in the Murmansk Region.
- PSEUDEPHEBE PUBESCENS (L.) M. Choisy – 2, 3, 10, rocks near waterfall, on stone.
- PYCNORA PRAESTABILIS (Nyl.) Hafellner – 3, on bark of *Betula* sp.
- *PYCNORA SOROPHORA (Vain.) Hafellner – 4, on lignum of stump.
- RAMALINA POLLINARIA (Westr.) Ach. – 3, 9, on basic soil on stone.
- RHIZOCARPON BADIOATRUM (Flörke ex Spreng.) Th. Fr. – 2, rocks near waterfall, on stone.
- RHIZOCARPON GEMINATUM Körb. – 3, 5, rocks near waterfall, on stone.
- RHIZOCARPON GEOGRAPHICUM (L.) DC. – 2, 3, 7, rocks near waterfall, on stone.
- RHIZOCARPON HOCHSTETTERI (Körb.) Vain. – 3, 7, on stone.
- RHIZOCARPON POLYCARPUM (Hepp) Th. Fr. – 1, 2, 7, on stone near river, on bark of *Sorbus gorodkovii*.
- *RHIZOCARPON SUPERFICIALE (Schaer.) Vain. – 2, on stone.
- *RHIZOCARPON VIRIDIATRUM (Wulfen) Körb. – 2, on stone.
- RINODINA OLIVACEOBRUNNEA C. W. Dodge & G. E. Baker – 2, 3, on soil.
- RINODINA SEPTENTRIONALIS Malme – 10, on bark of *Sorbus gorodkovii*.
- RUSAVSKIA SOREDIATA (Vain.) S. Y. Kondr. & Kärnefelt – 3, on stone.
- SCOLIOSPORUM CHLOROCOCCUM (Graewe ex Stenh.) Vězda – 4, 6, on bark of *Ulmus* sp., *Salix* sp., *Betula* sp.
- SPHAEROPHORUS FRAGILIS (L.) Pers. – 2, 9, rocks near waterfall, on basic soil on stone.
- SPHAEROPHORUS GLOBOSUS (Huds.) Vain. – 2, 3, on basic soil on stone.
- STEREOCAULON ALPINUM Laurer – 2, 7, rocks near waterfall, on soil.
- *STEREOCAULON CAPITELLATUM H.Magn. – 2, on basic soil on stone.

- STEREOCAULON CONDENSATUM Hoffm. – 1, 7, on soil.
 *STEREOCAULON DACTYLOPHYLLUM Flörke – 1, 9, on stone. Red Data Book of the RF (2008).
 STEREOCAULON SAXATILE H. Magn. – 1, 3, 7, on basic soil on stone.
 STEREOCAULON SYMPHYCHEILUM I. M. Lamb – 3, on stone.
 STEREOCAULON TOMENTOSUM Fr. – 1, 7, on soil.
 STEREOCAULON VESUVIANUM Pers. – 2, on stone.
 *TONINIA SQUALESCENS (Nyl.) Th.Fr. – 1, 3, on basic soil and mosses on stone. Rare in Russia and in the Murmansk Region.
 §TOENSBERGIA LEUCOCOCCA (R.Sant.) Bendiksby & Timdal – 3, on lignum.
 TRAPELIOPSIS FLEXUOSA (Fr.) Coppins & P. James – 1, 3, 4, 6, 7, on bark of old growth *Betula* sp., on bark of *Salix* sp., on lignum.
 TRAPELIOPSIS GRANULOSA (Hoffm.) Lumbsch – 2, 3, in surroundings of waterfall, on soil, on lignum of stump, on stone.
 TREMOLECIA ATRATA (Ach.) Hertel – 1, 2, 5, rocks near waterfall, on stone.
 TUCKERMANNOPSIS CHLOROPHYLLA (Willd.) Hale – 2, 8, on branches of *Picea abies*.
 UMBILICARIA DEUSTA (L.) Baumg. – 2, rocks near waterfall, on stone.
 UMBILICARIA HYPERBOREA (Ach.) Hoffm. – 1, 2, on stone near river.
 UMBILICARIA VELLEA (L.) Hoffm. – 2, on stone near river.
 VERRUCARIA AETHIOBOLA Wahlenb. – 5, riverbed of dry creek that flooded in season, on stone.
 VULPICIDA PINASTRI (Scop.) J.-E. Mattsson & M. J. Lai – 6, 8, on bark of *Betula* sp. and mosses.
 XYLOGRAPHA PARALLELA (Ach.:Fr.) Fr. – 2, 5, 7, 8, 9, on plant debris, on lignum, on bark and lignum of *Picea abies*.
 XYLOGRAPHA VITILIGO (Ach.) J. R. Laundon – 5, 8, on lignum.
 §XYLOPSORA CARADOCENSIS (Nyl.) Bendiksby & Timdal – 4, on lignum of stump.
 XYLOPSORA FRIESII (Ach.) Bendiksby & Timdal – 6, on bark of *Betula* sp.

DISCUSSION

Lichen diversity of the Kola peninsula is quite well-studied. However, the last checklist of lichens of the region with full information about species distribution in the area was published nearly 50 years ago (Dombrovskaya, 1970). In our days most of the publications present lists

of rare species and species new for the region or checklists without information about localities (Urbanavichus et al., 2008; Urbanavichus, 2014; 2015; Urbanavichus et al., 2014; Frolov & Konoreva, 2016; Konoreva, 2016). There are only two checklists with localities cited for each species – for the Lapland Biosphere Reserve and for the Pasvik Nature Reserve (Fadeeva et al., 2011; Urbanavichus et al., 2013). Absence of such checklists for other territories of the Kola peninsula causes difficulties in mapping species contemporary distribution, estimating their rarity, monitoring studies, and compiling full detailed checklist of the Murmansk region. That is why we presented here a full list of the lichen species (including common, widely distributed species) of the studied area.

We detected 168 species of lichens and allied fungi in the Pechenga and Kola districts. Two of them (*Microcalicium ahneri* and *Placidium norvegicum*) are new for the Murmansk Region, whereas 18 species are new for Lapponia Petsamoënsis, and 13 species are reported for the area for the second time (being previously known only from the Pasvik Natural State Reserve). *Stereocaulon dactylophyllum* is included into the Red Data Book of the Russian Federation (2008) and *Caloplaca diphyodes*, *Dermatocarpon meio-phyllizum*, *Haematomma ochroleucum*, *Phlyctis argena* and *Stereocaulon dactylophyllum* – into the Red Data Book of the Murmansk Region (2014). Seven species are rare in Russia, and 19 species are rare in the Murmansk Region. Two species from our list (*Adelolecia kolaënsis* and *Caloplaca diphyodes*) were last time collected in the Murmansk region in the first half of the 20th century.

High diversity of lichens in Lapponia Petsamoënsis is determined by the geography of the area. The northwestern part of the Murmansk Region is under the influence of the warm marine currents and the climate is much milder there than in the central and eastern parts of the Kola Peninsula. However, the proximity of the Arctic also has a significant impact on the lichens. Thus recent studies have revealed some interesting lichenological findings in the Murmansk Region in spite of the considerable anthropogenic pressure (e.g. Urbanavichus, 2015; Urbanavichus, Fadeeva, 2013, 2014).

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