

HEPATICAЕ SVALBARDENSIA EXSICCATAE. FASCICULUS I. (№№ 1-25)

ЭКСИКАТЫ ПЕЧЕНОЧНИКОВ ШПИЦБЕРГЕНА. ЧАСТЬ 1 (№№ 1-25)

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Abstract

The labels of 25 liverworts collections (20 species) from Svalbard are given. Each collection locality is annotated by description of geographic collecting place, habitat, coordinates, elevation, names of collectors, field number. The GenBank accession numbers for 13 specimens including 8 previously unpublished are provided. Eight species are published as exsiccatae from Svalbard for the first time.

Резюме

Приводятся данные этикеток 25 образцов (20 видов) печеночников, собранных на архипелаге Шпицберген. Для каждого образца указывается географический пункт сбора, координаты и высота над уровнем моря, местообитание, фамилии коллекторов, полевой номер. Для 13 видов приводятся номера ГенБанка, включая 8 публикуемых для архипелага впервые. Восемь видов публикуются в эксикатах для Шпицбергена впервые.

KEYWORDS: Arctic, liverworts, barcoding

INTRODUCTION

Since 2004, N.A. Konstantinova and A.N. Savchenko have been collecting liverworts in different parts of Svalbard almost every year. These were mostly short-term field trips, no more than 5-10 days. Despite the short duration and difficulties of collecting in the Arctic, we managed to collect some species enough for the publication of exsiccatae. The liverworts of Svalbard were published in exsiccatae twice. The largest set including 36 numbers of liverworts was published by Berggren (1875), cited by Frisvoll & Elvebakk (1996). However as stressed Frisvoll & Elvebakk (1996) the list of species collected by Berggren “has never been printed separately before”. Named authors (l.c.) compiled both a numerical and alphabetical list of Berggren’s exsiccatae including comments on the results of the revision of samples and modern names of species. The second set of Svalbard’s exsiccatae was published by Bednarek-Ochyra *et al.* (1987). It includes 80 numbers and 51 different names and only 2 numbers and 3 names belong to liverworts.

The first fascicle of Hepaticae Svalbardensia Exsiccatae includes 25 numbers and 20 species collected in different parts of Svalbard (Fig.). Coordinates and elevation are measured with GPS. Eight taxa are published as Exsiccatae from Svalbard for the first time (*Blepharostoma trichophyllum* subsp. *brevirete*, *Lophozia wenzelii* var. *lapponica*, *Lophozia polaris*, *Mesoptylia heterocolpos*, *Odontoschisma elongatum*, *Schistochilopsis opacifolia*, *Schljakovianthus quadrilobus*, *Tritomaria*

scitula). Some species are represented by two or even three specimens from different parts of Svalbard. We considered this appropriate because Arctic species or varieties are almost not represented in herbariums. In the course of preparing this issue, we obtained nucleotide sequence data for some samples and consider it useful to provide GenBank accession numbers for the studied specimens. Vouchers of the studied samples are stored in herbarium of Polar-alpine botanical Garden-institute (KPABG).

Some of the specimens have an admixture of one or more species. If an admixture is presented in most duplicates, it is indicated on the label by a “+” beneath the name of the main species. Data on the presence of gemmae (gem.), perianths (per.), androecia (and.), sporophytes (spor.) are given after the name of species.

Exsiccatae are available from Polar-Alpine Botanical Garden-Institute of Kola Science Center RAS (nadya50@list.ru).

1. *BLEPHAROSTOMA TRICHOPHYLLUM* (L.)

Dumort. *subsp. brevirete* (Bryhn et Kaal.) R.M. Schust., Bull. Natl. Mus. Canada 164: 16, 1959.

SVALBARD, SPITSBERGEN ISLAND, NORDENSKIÖLD LAND, Selisbukta, the first sea terrace, 78°06'07"N – 14°18'10"E, 12 m alt. In grass-Salix polaris-moss hummocky tundra, on hummocks. 30 July 2004, coll. Konstantinova N.A. & A.N. Savchenko K144-1-04, det. N.A. Konstantinova

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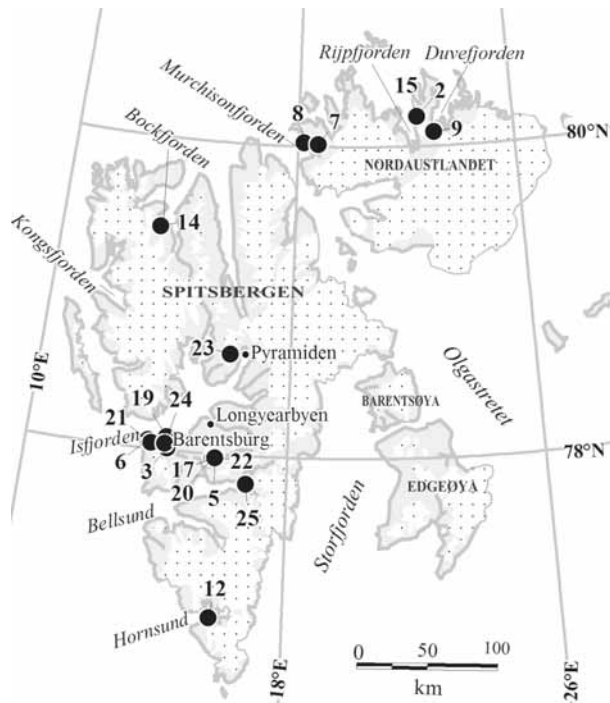


Fig. 1. Collecting localities (the numbers on the map correspond to the numbers on the labels).

2. CEPHALOZIELLA VARIANS (Gottsche) Steph., *Wiss. Ergebn. Schwed. Südpolar-Exped.* [1901–1903] 4 (1): 4. 1905. +*Marsupella arctica* (Berggr.) Bryhn et Kaal., +*Anthelia juratzkana* (Limpr.) Trevis, *pro parte*.

SVALBARD, NORDAUSLANDET, PRINS OSCAR LAND, east coast of Rijpfjorden, to the south of Bluffarden Mount, 80°13'5"N – 22°29'39"E, 26 m alt. On bank of lake, on sandy soil near rock. 3 July 2006, coll. Konstantinova N.A. & A.N. Savchenko K66-06, det. N.A. Konstantinova

3. GYMNOCOLEA INFLATA (Huds.) Dumort., *Recueil Observ. Jungerm.*: 17. 1835.

GenBank accession numbers: EU791787 (ITS1-2 nrDNA), EU791661 (*trnL-F* cpDNA).

SVALBARD, SPITSBERGEN ISLAND, NORDENSKIÖLD LAND, Grøndalen, the lower Grøndalselva, right bank of river, south facing slope of Akselvarden, 78°01'45"N – 14°20'37"E, 125 m alt. In mossy rivulet. 25 July 2004, coll. Konstantinova N.A. & A.N. Savchenko K118-1-04, det. N.A. Konstantinova

4. GYMNOTRION CORALLIODES Nees, *Naturgesch. Eur. Leberm.* 1: 118. 1833.

SVALBARD, SPITSBERGEN ISLAND, NORDENSKIÖLD LAND, east coast of Grønfjorden, Charitonovhofda Plateau at the foot of Ulov Mount, moraine terrace under Barentsburg, 78°03'23"N – 14°15'03"E, 276 m alt. In *Salix-polaris*-lichen *Gymnomitrium* tundra. 1 August 2015, coll. Konstantinova N.A. & A.N. Savchenko K5-1-15, det. N.A. Konstantinova

5. LOPHOZIA WENZELII (Nees) Steph. *var. lapponica* H. Buch et S.W. Arnell, *Svensk Bot. Tidskr.* 44(1):81. 1950.

GenBank accession number: MT338483 (*trnL-F* cpDNA).

SVALBARD, SPITSBERGEN ISLAND, NORDENSKIÖLD LAND, valley of Reindalselva River, Lågsnyta Mount, 77°59'34"N – 15°49'46"E, 48 m alt. Late snow bed community along seepage, on over moistened muddy soil. 29 July 2006, coll. Konstantinova N.A. & A.N. Savchenko K28-2-06, det. N.A. Konstantinova

6. LOPHOZIA WENZELII (Nees) Steph. *var. lapponica* H. Buch et S.W. Arnell, *Svensk Bot. Tidskr.* 44(1):81. 1950.

SVALBARD, SPITSBERGEN ISLAND, NORDENSKIÖLD LAND, west coast of Linnévatnet at the base of eastern slope of Griegaksla, 78°1'49"N – 13°43'58"E, 67 m alt. Depression along temporary stream, on soil. 23 July 2005, coll. Konstantinova N.A. & A.N. Savchenko K19-05, det. N.A. Konstantinova

7. LOPHOZIOPSIS POLARIS (R.M. Schust.) Konstant. et Vilnet, *Arctoa* 18: 67. 2009 [2010].

GenBank accession numbers: MT334459 (ITS1-2 nrDNA), MT338482 (*trnL-F* cpDNA).

SVALBARD, NORDAUSLANDET, GUSTAV V LAND, Murchisonfjorden, south-east slope on north-west coast of Nordvica Bay, 80°2'14"N – 18°49'18"E, 59 m alt. Under melting snowfield, between schists on moistened clay soil. 17 August 2007, coll. Konstantinova N.A. & A.N. Savchenko K129-07, det. N.A. Konstantinova

8. LOPHOZIOPSIS POLARIS (R.M. Schust.) Konstant. et Vilnet, *Arctoa* 18: 67. 2009 [2010].

SVALBARD, NORDAUSLANDET, GUSTAV V LAND, Murchisonfjorden, near Kinvika, 80°2'31"N – 18°16'08"E, 18 m alt. On peaty soil in depression, covered ca. 1.5 × 1.5 m. 28 July 2010, coll. Konstantinova N.A. & A.N. Savchenko K53-10, det. N.A. Konstantinova

9. LOPHOZIOPSIS POLARIS (R.M. Schust.) Konstant. et Vilnet, *Arctoa* 18: 67. 2009 [2010].

SVALBARD, NORDAUSLANDET, PRINS OSCAR LAND, south coast of Invika Bay, at base of height of 325 m, 80°6'36"N – 23°5'39"E, 38 m alt. On dried mosses in the bed of temporary stream between rocks under snowfield. 24 July 2011, coll. Konstantinova N.A. & A.N. Savchenko K307-11-11, det. N.A. Konstantinova

10. MARSUPELLA APICULATA Schiffn., Österr. Bot. Z. 53 (6): 249. 1903.

GenBank accession number: MT338488 (*trnL-F* cpDNA).

SVALBARD, SPITSBERGEN ISLAND, NORDEN-SKIÖLD LAND, east coast of Grøn fjorden, Charitonvøghøga west faced slope, at the foot of Ulov Mount, under Barentsburg, 78°3'24"N – 14°15'40"E, 291 m alt. Depression on moraine terrace. 1 August 2015, coll. Konstantinova N.A. & A.N. Savchenko K5-1-15, det. N.A. Konstantinova

11. MARSUPELLA ARCTICA (Berggr.) Bryhn & Kaal, Rep. Second Norweg. Arctic Exped. 11: 26, 1906. +*Cephaloziella varians pro parte*.

GenBank accession numbers: EU791815 (ITS1-2 nrDNA), EU791695 (*trnL-F* cpDNA).

SVALBARD, SPITSBERGEN ISLAND, NORDEN-SKIÖLD LAND, east coast of Grøn fjorden, Gunnarvarden, moist moss-liverwort tundra on shifting sand covering detritus, 78°05'06"N – 14°12'32"E, 135 m alt. 26 July 2004, coll. Konstantinova N.A. & A.N. Savchenko K128-04, det. N.A. Konstantinova

12. MESOPTYHIA HETEROCOLPOS (Thed. ex Hartm.) L. Söderstr. & Váňa, Phytotaxa 65: 53. 2012. Gemmae *pro parte*.

GenBank accession numbers: MT338487 (*trnL-F* cpDNA), MT338480 (*trnG-intron* cpDNA).

SVALBARD, SPITSBERGEN ISLAND, SØRKAPP LAND, south coast Hornsund Bay, at the base of Krykkjestupet, seeping cliffs under bird colonies, 76°57'54"N – 15°59'33"E, 1 m alt. On humus and fine earth between rocks. 16 August 2018, coll. Konstantinova N.A. & A.N. Savchenko K18-1-18, det. N.A. Konstantinova

13. ODONTOSCHISMA ELONGATUM (Lindb.) A.Evans, Rhodora 14 (157): 13. 1912.

GenBank accession numbers: JX629870 (ITS1-2 nrDNA), JX630001 (*trnL-F* cpDNA).

SVALBARD, SPITSBERGEN ISLAND, NORDEN-SKIÖLD LAND, Selisbukta, the first sea terrace, 78°06'07"N – 14°18'10"E, 12 m alt. Moist tundra on the edge of the lake. 30 July 2004, coll. Konstantinova N.A. & A.N. Savchenko K142-1-04, det. N.A. Konstantinova

14. SAUTERIA ALPINA (Nees) Nees, Naturgesch. Eur. Leberm. 4: 143. 1838.

SVALBARD, SPITSBERGEN ISLAND, NORTH-EAST OF HAAKON VII LAND, sandy western coast of Bockfjorden, at the bottom of moraine, 79°26'29"N – 13°21'22"E, 2-3 m alt. On sandy soil in dwarf-shrub moss tundra, up to 20% of plant cover. 30 July 2005, coll. Konstantinova N.A. & A.N. Savchenko K66-05, det. N.A. Konstantinova

15. SCAPANIA OBCORDATA (Berggr.) S.W. Arnell, Ark. Bot. (n.ser.) 4 (6): 117. 1959.

SVALBARD, NORDAUSLANDET, PRINS OSCAR LAND, east coast of Ripp Fjorden, north faced cliffs of Bluffarden Mount on southern bank of Heieren Lake, 80°12'39"N – 22°28'31"E, 70 m alt. The slope of mount, on muddy rocks in mossy bed of temperate stream. 4 July 2006, coll. Konstantinova N.A. & A.N. Savchenko K78-3-06, det. N.A. Konstantinova

16. SCAPANIA OBCORDATA (Berggr.) S.W. Arnell, Ark. Bot. (n.ser.) 4 (6): 117. 1959.

GenBank accession numbers: EU791734 (ITS1-2 nrDNA), EU791626 (*trnL-F* cpDNA).

SVALBARD, SPITSBERGEN ISLAND, NORDEN-SKIÖLD LAND, Selisbukta, the base of the second sea terrace, 78°05'53"N – 14°13'42"E, 48 m alt. Liverwort community in moist depression near road. 26 July 2004, coll. Konstantinova N.A. & A.N. Savchenko K123-1-04, det. N.A. Konstantinova

17. SCAPANIA SPITSBERGENSIS (Lindb.) Müll. Frib., Bull. Herb. Boissier (sér. 2) 1 (6): 607. 1901.

GenBank accession number: MT338485 (*trnL-F* cpDNA).

SVALBARD, NORDAUSLANDET, GUSTAV V LAND, Murchisonfjorden, Nordvika Bay, 80°2'5"N – 18°47'40"E, 32 m alt. The outcrops of the quartzite on the coast. 20 August 2007, coll. Konstantinova N.A. & A.N. Savchenko K162-07, det. N.A. Konstantinova

18. SCAPANIA TUNDRAE (Arnell) H. Buch, Scapan. N.-Eur. Sib.: 99. 1928.

GenBank accession numbers: MT334461 (ITS1-2 nrDNA), MT338486 (*trnL-F* cpDNA).

SVALBARD, SPITSBERGEN ISLAND, NORDEN-SKIÖLD LAND, valley of Reindalselva River, lower Gangdalskjegla, sedge-cotton grass fen in depression on south faced slope, 77°59'46"N – 15°51'27"E, 63 m alt. 30 July 2006, coll. Konstantinova N.A. & A.N. Savchenko K42-1a-06, det. N.A. Konstantinova

19. SCAPANIA TUNDRAE (Arnell) H. Buch, Scapan. N.-Eur. Sib.: 99. 1928.

GenBank accession numbers: EU791742 (ITS1 nrDNA), EU791725 (5.8S rRNA-ITS2 nrDNA), EU791634 (*trnL-F* cpDNA).

SVALBARD, SPITSBERGEN ISLAND, NORDEN-SKIÖLD LAND, Selisbukta, the first sea terrace, bank of stream near sea, 78°06'06"N – 14°17'33"E, 16 m alt. On soil covered rock. 30 July 2004, coll. Konstantinova N.A. & A.N. Savchenko K140-1-04, det. N.A. Konstantinova

20. SCHISTOCHILOPSIS OPACIFOLIA (Culm. ex Meyl.) Konstant., *Arctoa* 3: 125. 1994.

SVALBARD, SPITSBERGEN ISLAND, NORDENSKIÖLD LAND, valley of Reindalselva River, Lågsnyta Mount, hillock-moss tundra on steep slope, 77°59'25"N – 15°46'7"E, 212 m alt. On side of hillock on died *Sphagnum*. 29 July 2006, coll. Konstantinova N.A. & A.N. Savchenko K37-2-06, det. N.A. Konstantinova

21. SCHLJAKOVIANTHUS QUADRILOBUS (Lindb.) Konstant. et Vilnet, *Arctoa* 18: 66. 2009 [2010].

SVALBARD, SPITSBERGEN ISLAND, NORDENSKIÖLD LAND, Eastern slope of Linne Lake, rock field composed of huge rocks on steep slope, 78°3'15"N – 13°49'21"E, 61 m alt. Between rocks, on soil. 22 July 2005, coll. Konstantinova N.A. & A.N. Savchenko K12-1a-05, det. N.A. Konstantinova

22. SCHLJAKOVIA KUNZEANA (Huebener) Konstant. et Vilnet, *Arctoa* 18: 66. 2009 [2010].

GenBank accession number: MT338481 (*trnL-F* cpDNA).

SVALBARD, SPITSBERGEN ISLAND, NORDENSKIÖLD LAND, valley of Reindalselva River, Lågsnyta Mount, late snow bed along seepage, 77°59'34"N – 15°49'46"E, 48 m alt. On moist soil ca. 2 cm thick. 29 July 2006, coll. Konstantinova N.A. & A.N. Savchenko K28-4a-06, det. N.A. Konstantinova

23. TRILOPHOZIA QUINQUEDENTATA (Huds.) Bakalin, *Monogr. Lophozia*: 34, 2005.

GenBank accession numbers: MT334460 (ITS1-2 nrDNA), MT338484 (*trnL-F* cpDNA).

SVALBARD, SPITSBERGEN ISLAND, DICKSON LAND, Billefjorden, valley of Odinelva the left tributary of Mimerelva, terraces Planterigen at the bottom of Odinfelet, 78°39'48"N – 16°5'32"E, 328 m alt., Gentle slope under melting snowfield, on soil. 30 July 2008, coll. Konstantinova N.A. & A.N. Savchenko K70-08, det. N.A. Konstantinova

24. TRILOPHOZIA QUINQUEDENTATA (Huds.) Bakalin, *Monogr. Lophozia*: 34, 2005.

SVALBARD, SPITSBERGEN ISLAND, NORDENSKIÖLD LAND, east coast of Grønfjorden, Charitonovhøgda west faced slope, at the foot of Ulov Mount, under Barentsburg, 78°3'24"N – 14°15'40"E, 291 m alt. Bank of temporary stream, on loamy soil. 1 July 2015, coll. Konstantinova N.A. & A.N. Savchenko K2-2-15, det. N.A. Konstantinova

25. TRITOMARIA SCITULA (Taylor) Jørg, *Bergens Mus. Aarbok* 1919/20 (7): 3, 1922. +*Blepharostoma trichophyllum* (L.) Dumort. subsp. *brevirete* (Bryhn et Kaal.) R.M. Schust., +*Lophozia polaris* (R.M. Schust.) Konstant. et Vilnet., +*Schljakovianthus quadrilobus* (Lindb.) Konstant. et Vilnet, +*Mesoptychia heterocolpos* (Thed. ex Hartm.) L. Söderstr. et Váňa, *pro parte*

SVALBARD, SPITSBERGEN ISLAND, HEER LAND, Rindersbukta, Ottonset cabin, valley between two hills, north faced slope, nearest part, 77°50'13"N – 16°49'46"E, 130 m alt. Among small rocks, on soil. 18 August 2018, coll. Konstantinova N.A. & A.N. Savchenko K39-18, det. N.A. Konstantinova

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