

New national and regional biological records for Finland 7. Contributions to Bryophyta and Marchantiophyta

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Three species of mosses (Bryophyta: *Philonotis yezoana*, *Protobryum bryoides*, *Rhynchostegium murale*) and one of liverworts (Marchantiophyta: *Moerckia flotoviana*) are presented new for Finland. *Timmia megapolitana*, previously thought to be regionally extinct, is reported to being found again. New records in biogeographical provinces for 82 species of mosses and 34 species of liverworts are listed. Finally, 8 occurrences in provinces are removed due to misidentifications or missing specimens.

Introduction

Here we present 126 new records of bryophyte taxa for country and for Finnish biogeographical provinces during 2015–2016. Results are based

on field work and on herbarium studies. Only records based on public herbarium specimens are accepted. In special cases, on certain easily identifiable species, also observations based on photographs stored in the Finnish Museum of Nat-

ural History (LUOMUS) server, can be accepted. Photographs are downloaded using Löydös application (<http://loydos.luomus.fi/forms/luontohavainto>) and are accessible through Laji.fi internet address. Photographs may include also some protected and/or threatened species i.e. like *Buxbaumia viridis* and *Neckera pennata*, where collection needs special permissions or it is not recommended to collect living material in order to protect small populations. Main source of information now and in the future will be labelled dry herbarium specimens which provide invaluable archive for scientific studies including morphological and genetic taxonomy.

Four species are presented new for Finland and one regionally extinct (RE) species is reported to being found again. One of the species, *Philonotis yezoana*, is also new for Europe. In addition, we present 7 corrections for regional records. These are mainly corrections of misidentifications or deletions based on absent specimens. The publication is seventh in line after year 2010. Regional and national additions since 2010 have been published previously annually in Bryobrotherella, a publication of the Finnish Bryological Society (Ulvinen & Syrjänen 2010, 2011, Ulvinen et al. 2012, Juutinen et al. 2013, Juutinen & Ulvinen 2014, Juutinen et al. 2015). Updated distribution tables of all Finnish bryophytes can be found from the Internet (<http://www.ymparisto.fi>, Luonto/Lajit/Lajiensuojelutyö/Eliotyoryhmat/Sammalotyoryhma/Suomen_sammalet). Nomenclature is not updated in this paper according to Hodgetts (2015) and Söderström et al. (2016), instead it follows Juutinen & Ulvinen (2015).

Most of the specimens are digitalized in Kotka Collection Management System and their label data is, or will be, freely accessible using HTTP URI identifiers. Majority of the labels are originally written in Finnish. For *Cephalozia*, *Cephaloziella* and *Nardia* double blind determination is mostly required due to the large proportion of misidentifications in herbarium specimens (Ryömä et al. 2013). A short description of distribution, ecology and Red List status is given for nationally new species. Coordinates (if mentioned in herbarium specimens) are given in ETRS-TM35-FIN (EUREF-FIN) or Uniform Coordinate System (UCS). H= Botanical Museum, Finnish Museum of Natural History, Universi-

ty of Helsinki, OULU= Botanical Museum, University of Oulu, TUR= Herbarium, University of Turku, JYV = Natural history collections of Jyväskylä University Museum.

New records – Bryophyta

Amblyodon dealbatus (Hedw.) P.Beauv.

FINLAND. Lapponia inarensis (Li/InL), Utsjoki, Pulmanki, Lake Pulmankijärvi W, E bottom of Skaidegeašvarri, N shore of river Cuovtžajohka. Carbonated embankment of two meters high, moist top part of embankment. Abundant. UCS 7765980:3536854. Coll. Kimmo Syrjänen, 21.VIII.2015 (TUR <http://mus.utu.fi/TBR.120879>).

Amblystegium radicale (P.Beauv.) Schimp.

FINLAND. Ostrobothnia australis (Oa/EP), Isojoki, Pesämäenkylä, N shore of lake Haapajärvi, W from mouth of a stream. Birch swamp. About 2 dm² patch, with capsules. EUREF-FIN 6883616:236794. Coll. Timo Kypärä 2274, 29.IX.2016, conf. Tauno Ulvinen 2016 (OULU <http://tun.fi/GAT.356>).

Amblystegium subtile (Hedw.) Schimp.

FINLAND. Ostrobothnia australis (Oa/EP), Isojoki, Pesämäenkylä, N shore of lake Haapajärvi, W from mouth of a stream. *Populus tremula* forest. On two aspen trunks, altogether about 3 dm², with capsules. EUREF-FIN 6883648:236771. Coll. Timo Kypärä 2272, 29.IX.2016 (OULU <http://tun.fi/GAT.354>).

Breidleria pratensis (W.D.J.Koch ex Spruce)

Loeske

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Intsilä, Ruimunmäki. Bottom of old quarry, on spring-fed soil. Abundant. UCS 68335:36424. Coll. Tuomo Kuitunen 2876, 20.VII.2015, det. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/0044833>).

Bryum dichotomum Hedw.

FINLAND. Regio aboënsis (Ab/V), Turku, Ruissalo, 350 m to NE of the Ruissalo manor. At edge of an arable field, sparsely on clayey soil. UCS 6712086:3235542. Coll. Kimmo Syrjänen, 6.IV.2016 (TUR <http://mus.utu.fi/TBR.121692>).

Bryum pallescens Schleich. ex Schwägr.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Intsilä, Taplavaara quarry. Cliffs by the road, on gabbro. Scarce. UCS 68328:36422. Coll. Tuomo Kuitunen 3188, 14.VII.2016, conf. Ari Parnela 2016 (OULU <http://id.herb.oulu.fi/0044921>).

Bryum rubens Mitt.

FINLAND. *Savonia borealis* (Sb/PS), Kuopio, harbour, flowerbed at walkway by the shore, opposite to island Vassikkasaari. Bare ground, between *Phlox paniculata* and *Hosta* sp. Scarce. UCS 6976314:3535584. Coll. Kimmo Syrjänen, 16.IX.2015 (TUR <http://mus.utu.fi/TBR.121185>).

Buxbaumia viridis (Moug. ex Lam. & DC.) Brid. ex Moug. & Nestl.

FINLAND. Satakunta (St), Kankaanpää, Veneskoski, Siinahti, Soikanselkä-SW, small forest cape SE of Saunaluoto, E side. Soft, decaying stump of wind fallen *Picea abies* in spruce mire. Four new and two old capsules in an area of 2 dm². UCS 6861428:3245402. Coll. Kimmo Syrjänen, 27.IV.2015 (TUR <http://mus.utu.fi/TBR.120851>); Tavastia australis (Ta/EH), Janakkala, Myllylahti. In moist herb-rich environment, on natural stump of *Picea abies*. One sporophyte. EUREF-FIN 6762389:381483. Obs. Olli Manninen, 21.IV.2016 (no specimen taken but photograph stored in LUOMUS server and accessible through Laji.fi).

Calliergon giganteum (Schimp.) Kindb.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Intsilä, Ruimunmäki. Bottom of old quarry, in spring-fed depression. Abundant. UCS 68335:36424. Coll. Tuomo Kuitunen 2877, 20.VII.2015, conf. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/0044834>).

Campylocladus elodes (Lindb.) Kanda

FINLAND. Tavastia australis (Ta/EH), Hattula, Koski, rapids Myllykoski. There is an old mill and dam buildings in the river. UCS 67682:33504. Coll. Harri Arkkio, 13.VIII.2014, det. Tauno Ulvinen 2016 (OULU <http://id.herb.oulu.fi/0045986>).

Campylium stellatum (Hedw.) Lange &

C.E.O.Jensen

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Uukuniemi, Suursuo. Narrow rich fen strip along spring fed stream. UCS 6853450:3658379. Coll. Raimo Heikkilä & Markku Suoknuuti, 12.VIII.2015 (OULU <http://id.herb.oulu.fi/0044991>).

Campylophyllum halleri (Hedw.) M.Fleisch.

FINLAND. Tavastia australis (Ta/EH), Heinola, Mataraniemi – Kiistasniemi, Mäyrämäki W. Calcareous cliff, on calcite rock at base of wall. Quite abundant along 5–10 m length. UCS 6787761:3453620. Coll. Kimmo Syrjänen, 9.VIII.2016 (TUR <http://mus.utu.fi/TBR.121693>).

Dicranella crispa (Hedw.) Schimp.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Siikalahti, bird watching tower. Moist bank of a pathway, on loam. Abundant. UCS 68309:36365. Coll. Tuomo Kuitunen 2898, 21.VII.2015, det. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/0044855>).

Dicranella grevilleana (Brid.) Schimp.

FINLAND. Ostrobothnia australis (Oa/EP), Kauhajoki, Kauhajärvi, Kauhaneva-Pohjankangas National Park, middle part of gorge Katikankanjoni, Kolmentuulenlakki SW. Eroded slope of a ravine. Abundant, several dm², with capsules. EUREF-FIN 6910240:256613. Coll. Timo Kypärä 2219, 14.IX.2016, conf. Tauno Ulvinen 2016 (OULU <http://tun.fi/GAT.301>).

Dicranella rufescens (Dicks.) Schimp.

FINLAND. Ostrobothnia australis (Oa/EP), Kauhajoki, Muurahainen, Ruostetoja, Paholuoma river in Ruostekangas area S from rivulet Ruostetoja. Erosion sensitive riverbank. Abundant, about 10 md² in an area of 2 m², with capsules. EUREF-FIN 6901254:254085. Coll. Timo Kypärä 2234, 16.IX.2016, conf. Tauno Ulvinen 2016 (OULU <http://tun.fi/GAT.316>).

Dicranella staphylina H.Whitehouse

FINLAND. Nylandia (N/U), Inkoo, stubble field immediately N of the church. Coll. C.D. Preston, 8.V.2004 (H <http://id.luomus.fi/HA.H4227804>).

Didymodon rigidulus Hedw.

FINLAND. Ostrobothnia australis (Oa/EP), Kauhajoki, Kauhajärvi, Katikka, bridge over Katikanluoma river of road nr. 17039. Massive concrete bridge. Abundant, several dm², with gemmae. EUREF-FIN 6909744:257288. Coll. Timo Kypärä 2224, 14.IX.2016, conf. Tauno Ulvinen 2016 (OULU <http://tun.fi/GAT.306>).

Ditrichum flexicaule (Schwägr.) Hampe

FINLAND. Tavastia borealis (Tb/PH), Keitele, Keitele village center, NW from church. On top of a stone wall, on concrete. EUREF-FIN 7005627:467323. Coll. Timo Kypärä 2026, 21.6.2016 (OULU <http://tun.fi/GAT.108>).

Ditrichum heteromallum (Hedw.) E.Britton

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Salokylä, Varisvaara. On top of a quarry, rocky depression. Relatively abundant. UCS 68380:36431. Coll. Tuomo Kuitunen 3177, 14.VII.2016, conf. Ari Parnela 2016 (OULU <http://id.herb.oulu.fi/0044910>).

Ditrichum pusillum (Hedw.) Hampe

FINLAND. Ostrobothnia australis (Oa/EP), Kauhajoki, Lauhavuori National Park, Navettakangas, near the bor-

der of national park, S from Merarämäkkä. Ruderate, on forest road. Presumably common. EUREF-FIN 6906234:245417. Coll. Timo Kypärä 2206, 13.IX.2016 (OULU <http://tun.fi/GAT.288>).

***Encalypta ciliata* Hedw.**

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Oravaniemi, Erhonnieni. At cracks of a south sloping amphibolite bedrock. Scarce. UCS 682826:362889. Coll. Tuomo Kuitunen 3169, 13.VII.2016, conf. Ari Parnela 2016 (OULU <http://id.herb.oulu.fi/0044903>).

***Encalypta mutica* I.Hagen**

FINLAND. Tavastia australis (Ta/EH), Heinola, Mataraniemi – Kiistasniemi, Mäyrämäki W. Calcareous cliff, in steep slope, on bare soil. Sparsely. UCS 678776:345362. Coll. Kimmo Syrjänen, 9.VIII.2016 (TUR <http://mus.utu.fi/TBR.121687>).

***Fissidens dubius* P.Beauv.**

FINLAND. Savonia borealis (Sb/PS), Kuopio, Neulaniemi, lake Vuorilampi. Under a cliff. Coll. Kaarlo Linkola, 16.VI.1909, det. A.V. Auer 1941, conf. Tauno Ulvinen 2016 (H <http://id.luomus.fi/HA.H4064622>).

***Fissidens exilis* Hedw.**

FINLAND. Tavastia borealis (Tb/PH), Toivakka, Rutilahti, stream in Seppälä, 30 meters from shore of lake Päijänne. Herb rich forest, bank of river, on bare loam. UCS 6877668:3445251. Coll. Teppo Häyhä, 30.III.2015, conf. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/GAL.140>).

***Fissidens viridulus* (Sw. ex anon.) Wahlenb.**

FINLAND. Lapponia inarensis (Li/InL), Utsjoki, Kevo, Keneskoski. Wet amphibolite cliff, shady crevice. Scarce. UCS 773831:50190. Coll. Kimmo Syrjänen & Tuomo Kuitunen 3060, 18.8.2015, det. Kimmo Syrjänen 2015 (OULU <http://id.herb.oulu.fi/0044883>).

***Funaria hygrometrica* Hedw.**

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Siikalahti, bird watching tower. Moist bank of a pathway, loam – sand. Abundant. UCS 68309:36365. Coll. Tuomo Kuitunen 2895, 21.VII.2015, conf. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/0044852>).

***Grimmia elatior* Bruch ex Bals.-Criv. & De Not.**

FINLAND. Karelia borealis (Kb/PK), Lieksa, Ukko-Koli. Stony shore of Lake Pielisjärvi. UCS 7002:3642. Coll. Unto Laine, 6.VIII.1972, det. Kimmo Syrjänen 2014 (TUR 120566).

***Grimmia ovalis* (Hedw.) Lindb.**

FINLAND. Lapponia inarensis (Li/InL), Inari, Lemmenjoki National Park, Vajjoki. Rusty cliff, W exposition. A few cm², no capsules. EUREF-FIN 7614937:452921. Coll. Timo Kypärä 1815 & Tuomo Kuitunen, 13.VIII.2015, det. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/0042703>).

***Grimmia pulvinata* (Hedw.) Sm.**

FINLAND. Satakunta (St), Pöytyä, Yläne village church, W gate to church yard. On top of stone gate pillar, on concrete. Scarce, few small patches. EUREF-FIN 6758341:250753. Coll. Timo Kypärä 2033, 28.VI.2016 (OULU <http://tun.fi/GAT.115>).

***Hypnum andoi* A.J.E.Sm.**

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Oravaniemi, Erhonnieni. South facing amphibolite cliff. Abundant. UCS 682826:362889. Coll. Tuomo Kuitunen 3168, 13.VII.2016, det. Ari Parnela 2016 (OULU <http://id.herb.oulu.fi/0044902>).

***Loeskypnum badium* (Hartm.) H.K.G.Paul**

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Uukuniemi, Suursuo. Narrow rich fen strip along spring fed stream. UCS 6853450:3658379. Coll. Raimo Heikkilä & Markku Suoknuuti, 12.VIII.2015 (OULU <http://id.herb.oulu.fi/00449913>).

***Myrinia pulvinata* (Wahlenb.) Schimp.**

FINLAND. Savonia borealis (Sb/PS), Vieremä, Luvejoki, Niemelä, S shore of river Luvejoki, near an abandoned house and mouth of the ditch coming from the fields. On trunk of *Alnus incana*, on area covered by mineral flood soil. Abundant. UCS 709199:349025. Coll. Tauno Ulvinen, 31.VIII.2015 (OULU <http://id.herb.oulu.fi/0044654>).

***Orthothecium intricatum* (Hartm.) Schimp.**

FINLAND. Lapponia inarensis (Li/InL), Utsjoki, Mieraš-jävi-S, Ánotskáidi-W, N end of Suhkkesvuovdi, N end of Rievssatfällébákti bottom. Moist, eutrophic stone embankment. Crack at bottom part of embankment. Scarce. UCS 7713716:3507208. Coll. Kimmo Syrjänen, 16.VIII.2015 (TUR <http://mus.utu.fi/TBR.121009>).

***Orthotrichum affine* Schrad. ex Brid.**

FINLAND. Savonia borealis (Sb/PS), Kuopio, Matkus, lake Koiravesi, cape Keinälänniemi, c. 700 m N from adult education college. Base of a large *Populus tremula*, by the lake. Scarce, seen one patch (a few cm²), with capsules. EUREF-FIN 6965879:531994. Coll. Timo Kypärä 2003, 15.VI.2016, conf. Kimmo Syrjänen 2016 (OULU <http://tun.fi/GAT.85>).

Orthotrichum cupulatum Hoffm. ex Brid.

FINLAND. Tavastia australis (Ta/EH), Kangasala, Saha-lahti, by the side of church parking lot, on top of grave-yard stone wall. Scarce. UCS 6821:3357. Coll. Ari Parnela, 16.V.2015, det. Kimmo Syrjänen 2015 (OULU <http://id.herb.oulu.fi/0045480>).

Orthotrichum diaphanum Schrad. ex Brid.

FINLAND. Tavastia australis (Ta/EH), Vålkeakoski, Ritvala, Tervattu, cottage N from Sikosaari. Concrete well ring. UCS 678850:334701. Coll. Harri Arkkio, 29.III.2016, conf. Kimmo Syrjänen 2016 (OULU <http://id.herb.oulu.fi/GAP.16>).

Orthotrichum gymnostomum Bruch ex Brid.

FINLAND. Ostrobothnia australis (Oa/EP), Isojoki, Peuralankylä, Kankaanmaa E from Huhdantsuntti, about 350 m from border of commune Siikinen. Mesic heath forest with *Pinus sylvestris* and *Picea abies*, on trunk of a large *Populus tremula*. Abundant, numerous patches reaching several meters up on a trunk. EUREF-FIN 6886882:226621. Coll. Timo Kypärä 2255, 22.IX.2016 (OULU <http://tun.fi/GAT.337>).

Orthotrichum pallens Bruch ex Brid.

FINLAND. Karelia australis (Ka/EK), Miehkikkälä, Miehkikkälä village church, by the alley leading to church main door. Graveyard, *Acer plantanoides*. Scarce, a few 5 cm 2 patches, with capsules. EUREF-FIN 6726708:538388. Coll. Timo Kypärä 2071, 13.7.2016, conf. Kimmo Syrjänen 2016 (OULU <http://tun.fi/GAT.153>).

Orthotrichum stramineum Hornsch. ex Brid.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Huhmarinen, Siikalahti. At base of a large *Populus tremula*. UCS 683128:363618. Coll. Tuomo Kuitunen 3174a, 14.VII.2016, det. Kimmo Syrjänen 2016 (OULU <http://id.herb.oulu.fi/GAP.26>).

Philonotis yezoana Besch. & Cardot,
nipponinlähdesammal

FINLAND. Lapponia kittilensis (Lkk/KiL), Kolari, Pallas-Yllästunturi National Park, Ylläs mountain (probably Varkaankurunoja brook). UCS 7502:3381. Coll. Arvi Huuskonen, 9.8.1965, det. Tauno Ulvinen 2016, conf. Timo Kuitunen 2016 (OULU <http://id.herb.oulu.fi/GAP.13>).

New species for Finland and Europe. Red list status assessed by Finnish Bryophyte Expert Group in 2016: DD. *Philonotis yezoana* was rediscovered in 2016 from Varkaankurunoja by Timo Kypärä (OULU <http://id.herb.oulu.fi/GAP.11>). More on *Philonotis yezoana* see Ulvinen (2016) and Ulvinen & Kypärä (2016).

Plagiothecium piliferum (Sw.) Schimp.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Oranvieniemi, Ehronniemi. At amphibolite rock. Small patches. UCS 68284:36289. Coll. Tuomo Kuitunen 2902, 21.VII.2015, conf. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/0044859>).

Plagiothecium succulentum (Wilson) Lindb.

FINLAND. Lapponia inarensis (Li/InL), Utsjoki, Kevo, Tsieskula, protection area upstream of river Tsieskul. Moist herb rich mountain birch (*Betula pubescens* ssp. *cserepanovii*) forest. UCS 7740440:3502644. Coll. Kimmo Syrjänen, 17.VIII.2015 (TUR <http://mus.utu.fi/TBR.121112>).

Plagiothecium undulatum (Hedw.) Schimp.

FINLAND. Ostrobothnia australis (Oa/EP), Vaasa, Solv, Sundom, Långskär. On stone. Coll. Ragnar Bäck, 2.IX.1951 (H <http://id.luomus.fi/HA.H4115292>).

Platygyrium repens (Brid.) Schimp.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Siikalahti, nature center. Herb rich forest, by the path, at trunk of *Tilia cordata*. Abundant. UCS 68312:36362. Coll. Tuomo Kuitunen 2896, 21.VII.2015, det. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/0044853>).

Pogonatum dentatum (Menzies ex Brid.) Brid.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Särkisalmi, Mälkiänmäki, at road turnover place. Flank of a gravel road. Somewhat abundant. UCS 68382:36266. Coll. Tuomo Kuitunen 2911, 22.VII.2015, conf. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/0044868>).

Pohlia andalusica (Höhn.) Broth.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Särkisalmi, Oronmylly, at second highest step of path leading to shore. On sand. Scarce. UCS 68370:36262. Coll. Tuomo Kuitunen 2821, 18.VII.2015, det. Ari Parnela 2015, conf. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/0044778>); Tavastia borealis (Tb/PH), Laukaa. On clayey lawn. UCS 6923:3445. Coll. Sari Rautanen, 3.X.1994, det. Tauno Ulvinen 2008 (JYV).

Pohlia elongata Hedw.

FINLAND. Ostrobothnia media (Om/KP), Lestijärvi, Syri, river Puikonpuro. On shore. UCS 7055036:3375776. Coll. Eero Kaakinen, Tuula Kuusela & Kalevi Kuusela, 30.VII.1974, det. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/0033821>).

Pohlia prolifera (Kindb.) Lindb. ex Broth.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Intsilä, Taplavaara quarry. Cliffs by the road, on gabro. Scarce.

UCS 68328:36422. Coll. Tuomo Kuitunen 3189, 99.IX.2016, conf. Ari Parnela 2016 (OULU <http://id.herb.oulu.fi/0044922>).

***Pohlia sphagnicola* (Bruch & Schimp.) Broth.**

FINLAND. Ostrobothnia ouluensis (Obo/PeP), Pudasjärvi, Tirola, Jäniskallio W, E margin of mire Ruunalammisuo. *Sphagnum fuscum* bog, hummock. UCS 7241840:3523560. Coll. Tauno Ulvinen, 16.IX.2016 (OULU <http://id.herb.oulu.fi/GAP.21>); Lapponia inarensis (Li/InL), Inari, Lemmenjoki National Park, downstream of river Vajoki, ravine west of Vajoki. Swampy margin of a pond. Scarce. EUREF-FIN 7613820:452244. Coll. Timo Kypärä 1846 & Tuomo Kuitunen, 15.VIII.2015, conf. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/0044982>).

***Protobryum bryoides* (Dicks.) J.Guerra &**

M.J.Cano, umpisammal, heltuss (syn. *Tortula protobryoides*, *Pottia bryoides*)

FINLAND. Regio aboënsis (Ab/V), Parainen, Korppoo, Jurmo island. Dry calcareous species-rich grassland on shell marl. On bare soil at side of an ant mound. A few small patches. UCS 6647037:3196831. Coll. Kimmo Syrjänen 11.IV.2016 (TUR <http://mus.utu.fi/121694>).

New species for Finland. Red list status assessed by Finnish Bryophyte Expert Group in 2016: CR (criterion: B1, B2ac(iv)). This species is rare and with southern distribution in Fennoscandia. The locality is most northeastern in Europe. *Protobryum bryoides* is classified vulnerable (VU) in Sweden, present in Denmark but so far not known from Norway (Hodgetts 2015). It grows also in the Baltic countries and is classified as threatened in Estonia (VU) and Lithuania. It is more common in central and southern temperate and Mediterranean Europe, but has been decreasing in many countries due to overgrowth and eutrophication of calcareous grasslands.

***Racomitrium elongatum* Ehrh. ex Frisvoll**

FINLAND. Satakunta (St), Sastamala, Karkku, Kärppälä, Salokunta village church, on top of stone wall. One of the dominant species. UCS 6813:3292. Coll. Ari Parnela, 5.X.2015, det. Kimmo Syrjänen 2015 (OULU <http://id.herb.oulu.fi/0045468>); Tavastia australis (Ta/EH), Orivesi, Eräjärvi, Eräjärvi church yard, on top of a stone wall near a bell tower. Scarce. UCS 6832:3370. Coll. Ari Parnela, 11.IV.2015, conf. Tauno Ulvinen 2016 (OULU <http://id.herb.oulu.fi/0045703>); Karelia ladogensis (Kl/LK), Parikkala, Salokylä, Varisvaara. On top of a quarry, rocky depression. Relatively abundant. UCS 68380:36431. Coll. Tuomo Kuitunen 3176, 14.VII.2016, det. Ari Parnela 2016, conf. Kimmo Syrjänen 2016 (OULU <http://id.herb.oulu.fi/0044909>).

***Racomitrium ericoides* (Brid.) Brid.**

FINLAND. Ostrobothnia ouluensis (Obo/OP), Pudasjärvi, Pärjä, Common Forest 1 of Pärjänsuo, NW side of Pärjänsuo river, lower slope of S end of Ruskeakallio. Steep rock bank with dry heathy vegetation above a streamlet, growing as sparse moss mat on mineral soil. UCS 727425:351702. Coll. Martti Ohenoja, 26.VII.1994, det. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/0043808>).

***Rhynchostegium murale* (Hedw.) Schimp.,**

kalkkirensusammal, stennäbbmossa

FINLAND. Regio aboënsis (Ab/V), Parainen, Älön, Jusinniitty, old quarry of crystalline limestone at north side of Pappilanpelto open-pit mine. At base of moist and sheltered calcite wall in NE-corner of the quarry. Locally abundant. UCS 6697521:3238499. Coll. Kimmo Syrjänen, 27.IV.2015 (TUR <http://mus.utu.fi/TBR.116030>).

New species for Finland. Red list status assessed by Finnish Bryophyte Expert Group in 2015: VU (criterion D2). Since this first found this species has been found from three other localities during 2015–2016. Three known sites are situated in Parainen municipality and one in Salo (Särkisalo) municipality. In Finland *Rhynchostegium murale* grows mainly on moist and shady walls of old abandoned quarries of crystalline limestone. It is also found from moist siliceous rock outcrops close to a concrete factory (with a lot of -calcite dust). In all sites there are plenty of capsules. *Rhynchostegium murale* is a common species on base-rich rocky habitats in more southern countries of Europe. In Fennoscandia it occurs also in southern part of Sweden, Norway and Denmark and is not considered threatened (Hodgetts 2015). Also in Estonia it is considered as least concern (LC) species. Its presence on Finnish growing sites cannot be much more than 100 years old, and it has been speculated by the Finnish Bryophyte Expert Group whether occurrences are rather recent consequence of long distance dispersal and climate warming. However, habitats suitable for the species are very rare in Finland and thus the VU status is justified.

***Rhytidiadelphus loreus* (Hedw.) Warnst.**

FINLAND. Satakunta (St), Rauma, Olkiluoto, Liiklan-kari cape, nature protection area. Spruce mire border of black alder swamp near the shore, on decaying trunk of *Alnus glutinosa*. Scarce. UCS 6803837:3203051. Coll. Kimmo Syrjänen, 26.V.2015 (TUR <http://mus.utu.fi/TBR.120819>).

***Schistidium boreale* Poelt**

FINLAND. Tavastia australis (Ta/EH), Heinola, Mataraniemi – Kiistasniemi, Mäyrämäki -W, calcareous cliff, on crystalline limestone. UCS 678776:345362. Coll. Kimmo Syrjänen, 9.VIII.2016 (TUR <http://mus.utu.fi/TBR.121695>).

***Schistidium crenatum* H.H.Blom**

FINLAND. Tavastia australis (Ta/EH), Lempäälä, Mantere, N shore of Priikolinokka, E part. Shore cliff. UCS 6803:3227. Coll. Harri Arkkio, 13.V.2011, det. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/0025915>); Lapponia kittilensis (Lkk/KiL), Kolari, mouth of river Äkäsjoki, shore of river Muonionjoki, by Päiväkumpu house. Small low rock outcrop at waterline. UCS 74879:33594. Coll. Tauno Ulvinen, 5.IX.1998, det. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/0044773>); Lapponia enontekiensis (Le/EnL), Könkämaeno, Pättikkä. Coll. H. Roivainen, 15.VII.1934, det. Tauno Ulvinen 2015 (H 4201729).

***Schistidium flexipile* (Lindb. ex. Broth.) G.Roth**

FINLAND. Lapponia enontekiensis (Le/EnL), Enontekiö, Luoteis-Enontekiö, Kilpisjärvi, Malla, S slope, calcareous cliff. Coll. Mauno J. Kotilainen, 2.VII.1920, det. Tauno Ulvinen 2016 (H <http://id.luomus.fi/HA.H4216152>).

***Schistidium frigidum* H.H.Blom**

FINLAND. Ostrobothnia ultima (Obu/PeP), Keminmaa, Penikat, Keski-Penikka, base of hill's E slope, about 620 meters from cabin Jääkärikämpä SSW. Slopy serpentinite rock, at about one meter height. Small 4 cm² patch. UCS 7310412:3410646. Coll. Riikka Juutinen 6279, 5.IX.2013, conf. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/0038577>).

***Schistidium frivollianum* H.H.Blom**

FINLAND. Keuruu, Huhkoperä, S end of lake Huhkojärvi, Holmanpohja, E shore. Shore cliff, a few meters high inclined rock face, W exposition. Several patches in an area of 5 to 6 m². EUREF-FIN 6889889:387302. Coll. Timo Kypärä 1926 & Johanna Hallman, 4.IV.2016, det. Timo Kypärä 2016, conf. Tauno Ulvinen 2016 (OULU <http://id.herb.oulu.fi/GAP.15>).

***Schistidium lancifolium* (Kindb.) H.H.Blom**

FINLAND. Satakunta (St), Sastamala, Mouhijärvi, Tuisku, S from road to Pori. Herb rich forest slope, at side of a small rock outcrop, at mica schist, NE exposition. Scarce. UCS 68280:32886. Coll. Ari Parnela, 23.V.2009, conf. Tauno Ulvinen 2009 (OULU <http://id.herb.oulu.fi/0019696>).

***Schistidium pruinatum* (Wilson ex Schimp.)**

G.Roth

FINLAND. Tavastia australis (Ta/EH), Kuhmoinen, island Pieni Ristisaari, N side. On top of a cairn. A few small patches. EUREF-FIN 6842211:415098. Coll. Timo Kypärä 1787, 21.VII.2015, det. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/0042691>).

***Schistidium pulchrum* H.H.Blom**

FINLAND. Karelia ladogensis (Ki/LK), Parikkala, Rasvaniemi, Suurmäki, SW slope of hill Väntsävaara. On rock outcrop. UCS 68335:36433. Coll. Tauno Ulvinen, 14.IX.2003, det. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/0044788>).

***Schistidium sordidum* I.Hagen**

FINLAND. Ostrobothnia kajanensis (Ok/Kn), Kajaani, Koivukoski rapids. Shore cliffs. Coll. J.S.W. Koponen, 15.IX.1929, det. Tauno Ulvinen 2015 (H <http://id.luomus.fi/HA.H4220028>).

***Schistidium subjulaceum* H.H.Blom**

FINLAND. Lapponia enontekiensis (Le/EnL), Enontekiö, lake Kelottijärvi. Coll. J. P. Norrlin, 9.VIII.1867, det. Tauno Ulvinen 2016 (H4216136).

***Schistidium submuticum* H.H.Blom**

FINLAND. Karelia ladogensis (Ki/LK), Parikkala, Särkisalmi, Saunamäki, old shooting range. On concrete. Somewhat abundant. UCS 68382:36260. Coll. Tuomo Kuitunen 2836, 18.VII.2015, det. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/0044793>); Karelia borealis (Kb/KP), Joensuu. City center, street Rauhankatu, near cemetery flower shop. Concrete slab. UCS 69478:36421. Coll. Juhani Räsänen, 9.XI.2015, det. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/GAL.139>); Ostrobothnia media (Om/KP), Siikajoki, Ruukki. Center, at the place of an old bridge, S shore of river. Concrete wall. Scarce. UCS 7175463:3409588. Coll. Risto Virtanen, 6.V.2009, det. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/0001558>).

***Schistostega pennata* (Hedw.) F.Weber &**

D.Mohr

FINLAND. Lapponia enontekiensis (Le/EnL), Enontekiö, Pikku-Malla. Cliff Korppipahta. At the foot of cliff, back end of a hollow. A few dm². UCS 7677124:3251446. Obs. Kimmo Jääskeläinen, 16.VII.2015 (no specimen taken but photograph stored in LUOMUS server and accessible through Laji.fi).

***Sphagnum auriculatum* Schimp.**

FINLAND. Ostrobothnia ultima (Obu/PeP), Tervola, Loue, Isomännikkö SW, 300 m W from road to Kätkävaara, at the border of state and private lands. Wet paludi-

fied depression. UCS 73469:34085. Coll. Tauno Ulvinen, 5.8.2001, det. Teemu Tahvanainen 2013 (OULU <http://id.herb.oulu.fi/GAP.18>).

Sphagnum balticum (Russow) C.E.O.Jensen
FINLAND. Karelia ladogensis (KI/LK), Parikkala, Uukuniemi, Suursuo. Spring seepage and ombrotrophic hollow bog surrounding it. UCS 6853428:3658646. Coll. Raimo Heikkilä & Markku Suoknuuti, 12.VIII.2015 (OULU <http://id.herb.oulu.fi/0045016>).

Sphagnum contortum Schultz
FINLAND. Lapponia inarensis (Li/InL), Utsjoki, Pulman-kijärvi (Buolbmátjávri), Buolbmátjávri W, Skáidegeašvári E, Guovžajohka. Rich flark fen. EUREF-FIN 7762774:536743. Coll. Riikka Juutinen 6738, 21.VIII.2015 (OULU <http://tun.fi/GAK.210>).

Sphagnum cuspidatum Ehrh. ex Hoffm.
FINLAND. Karelia ladogensis (KI/LK), Parikkala, Salokylä, pond Hetteenlampi. In flarks near the pond. Abundant. UCS 683732:364437. Coll. Tuomo Kuitunen 3181, 14.VII.2016, conf. Ari Parnela 2016 (OULU <http://id.herb.oulu.fi/0044914>).

Sphagnum inundatum Russow
FINLAND. Kittilä, Kotakumpu, Pahlavuoma mire c. 700 meters S from the road to Sodankylä, 600 meters E from the road to Ounasjoki. Eutrophic birch flark fen, in flark. UCS 74074:34262. Coll. Tauno Ulvinen, 26.8.1993, det. Teemu Tahvanainen 2013 (OULU <http://id.herb.oulu.fi/GAP.20>).

Sphagnum jensenii H.Lindb.
FINLAND. Karelia ladogensis (KI/LK), Parikkala, Uukuniemi, Suursuo. Herb – flark fen. UCS 6853784:3658773. Coll. Raimo Heikkilä & Markku Suoknuuti, 12.VIII.2015 (OULU <http://id.herb.oulu.fi/0045008>).

Sphagnum majus (Russow) C.E.O.Jensen
FINLAND. Karelia ladogensis (KI/LK), Parikkala, Uukuniemi, Suursuo. Spring seepage with ombrotrophic hollow bog surrounding it. UCS 6853428:3658646. Coll. Raimo Heikkilä & Markku Suoknuuti, 12.VIII.2015 (OULU <http://id.herb.oulu.fi/0045017>).

Sphagnum rubellum Wilson
FINLAND. Lapponia inarensis (Li/InL), Inari, Lemmenjoki National Park, downstream of river Vajjoki, ravine west of Vajjoki. Swampy margin of a pond. A few dm². EUREF-FIN 7613979:452327. Coll. Timo Kypärä 1845 & Tuomo Kuitunen, 15.VIII.2015 (OULU <http://id.herb.oulu.fi/00449821>).

Syntrichia norvegica F.Weber
FINLAND. Tavastia australis (Ta/EH), Luhanka, Pilkan-selkä, island Lehtosaari. Flat shore cliff, by a cairn. Abundant. EUREF-FIN 6849996:432602. Coll. Timo Kypärä 1797, 29.VII.2015, conf. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/0042693>).

Syntrichia ruraliformis (Besch.) Cardot
FINLAND. Karelia australis (Ka/EK), Kotka, Haapasaaret, Vanhankylänmaa, SW sandy beach, base of Miehenkari. Upper part of sandy beach, by *Rubus idaeus* bushes. Patches. UCS 6686016:7507616. Coll. Kimmo Syrjänen, 26.VIII.2015 (TUR <http://mus.utu.fi/TBR.121188>).

Tayloria splachnoides (Schleich. ex Schwägr.)
Hook.

FINLAND. Lapponia kittilensis (Lkk/KiL), Kolari, Pallas-Ylläs National Park, lower part of Varkaankuru gorge. Des-tritus covered stone at river bank, under ferns. Two small patches, a few cm². EUREF-FIN 7499962:381619. Coll. Timo Kypärä 2110, 6.VIII.2016 (OULU <http://id.herb.oulu.fi/GAP.12>, Ulvinen & Kypärä 2016).

Thamnobryum alopecurum (Hedw.) Gangulee
FINLAND. St, Parkano, Ylinenpää, cliff on N side of mountain Alkkianvuori, middle part of the cliff. Cliff on N exposition, moist pothole like cavity at the foot of the cliff. Fairly scarce, patches altogether about 2 dm². EUREF-FIN 6899325:285263. Coll. Timo Kypärä 2240, 20.IX.2016, conf. Tauno Ulvinen 2016 (OULU <http://tun.fi/GAT.322>).

Timmia megapolitana Hedw.
FINLAND. Regio aboënsis (Ab/V), Parainen, Malmi, Malmnäs, SE from tennis court. Pine forest influenced by calcareous dust from nearby quarry and concrete factory, on decaying tree stumps of *Salix caprea*. Patches of couple of dm², with capsules. UCS 6695968:3240149. Coll. Kimmo Syrjänen, 10.V.2015 (TUR <http://mus.utu.fi/TBR.120814>).

Previously assessed in Finland as regionally extinct (RE) (Syrjänen et al. 2010). Red list status assessed by Finnish Bryophyte Expert Group in 2015: DD. Also collected from another location in Parainen in 2015 by Kimmo Syrjänen (specimens in TUR). In this other locality *Timmia megapolitana* is abundant. Growing habitat is a small (less than 0,5 hectare) *Salix* swamp forest close to a large quarry. of crystalline limestone. There is a lot of calcite dust in the site and *Timmia megapolitana* grows commonly on decaying stumps, bases of living willows and as tussocks on moist soil. Earlier *Timmia megapolitana* has been found in

southern Finland from town sites, at lawn close to Turku castle and in Helsinki botanical garden but it has disappeared from these sites (Virtanen 2009). The occurrences in Parainen are the only known existing ones in Fennoscandia. In Estonia *Timmia megapolitana* is met in northern part of the country, in moist and shady forests at vicinity of coastal calcareous cliffs. It is considered to be vulnerable (VU). It is also known from NE Russia and here and there in eastern and central Europe. In Russia, Germany and Poland it is not assumed to be threatened. It is also found rather recently from western Europe (Great Britain and the Netherlands) where it is classified threatened (Hodgetts 2015).

***Trichodon cylindricus* (Hedw.) Schimp.**

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Särkisalmi, Oronmylly, at shore path. On moist sand. Fairly abundant. UCS 68368:36264. Coll. Tuomo Kuitunen 2826, 18.VII.2015, conf. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/0044783>).

***Warnstorfia sarmentosa* (Wahlenb.) Hedenäs**

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Uukuniemi, Suursuo. Narrow rich fen strip along spring fed stream. UCS 6853450:3658379. Coll. Raimo Heikkilä & Markku Suoknuuti, 12.VIII.2015 (OULU <http://id.herb.oulu.fi/0044998>).

New records – Marchantiophyta

***Aneura maxima* (Schiffn.) Steph.**

FINLAND. Satakunta (St), Jämijärvi, Pitkäniemi, headwaters spring of the western spring brook running to Mielähti bay. UCS 6859:3277. Coll. Tauno Ulvinen, 27.VIII.1957, det. Kimmo Syrjänen 2016 (OULU <http://id.herb.oulu.fi/0041582>); Ostrobothnia australis (Oa/EP), Kauhajoki, Kauhaneva-Pohjankangas National Park, middle part of gorge Katikankanjoni, N part of Sianselkä. Large spring seepage. 4 dm² patch. EUREF-FIN 6910207:256630. Coll. Timo Kypärä 2215, 14.IX.2016, conf. Kimmo Syrjänen 2016 (OULU <http://tun.fi/GAT.297>); Karelia borealis (Kb/PK), Ilomantsi, Huhus, Koitajoki, mire Mykränsuo W from mire Kesonsuo and N from river Koitajoki, W border of the mire. Spring complex at the border of forestry drained pine mire and a forest. About 2 dm² patch. EUREF-FIN 6967779:689856. Coll. Timo Kypärä 2122, 17.VIII.2016, conf. Kimmo Syrjänen 2016 (OULU <http://tun.fi/GAT.204>).

***Calyptogeia fissa* (L.) Raddi**

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Uukuniemi, Suursuo. Spring seepage and ombrotrophic hollow bog surrounding it. UCS 6853428:3658646. Coll. Raimo Heikkilä & Markku Suoknuuti, 12.VIII.2015, det. Riikka Juutinen 2016 (OULU <http://id.herb.oulu.fi/0045015>); Karelia borealis (Kb/PK), Ilomantsi, Huhus, ravines between river Koitajoki and forest area Palokangas. Spring fed ditch in ravine pine mire. Scarce, scattered among other byophytes in an area of 2 dm². EUREF-FIN 6975063:696379. Coll. Timo Kypärä 2111 & Suvi Haapalehto, 10.VIII.2016 (OULU <http://tun.fi/GAT.193>).

***Calyptogeia muelleriana* (Schiffn.) Müll.Frib.**

Karelia ladogensis (KI/LK), Parikkala, Särkisalmi, Herlampi. At root clumps near the mouth of a stream. Scarce. UCS 68373:36254. Coll. Tuomo Kuitunen 2908, 22.VII.2015, conf. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/0044865>).

***Calyptogeia neesiana* (C.Massal. & Carestia)**

Müll.Frib.

Ostrobothnia ouluensis (Obo/OP), Pudasjärvi, Yli-Kurki, stream Haapuanjoja (western), downstream from the bridge crossing the gravel road, eastern shore. Shaded shore forest below a seeping slope, at rotten wood. UCS 725505:353198. Coll. Tauno Ulvinen, 11.VIII.2015, det. Ari Parnela 2015, conf. Riikka Juutinen 2016 (OULU <http://id.herb.oulu.fi/0045098>).

***Calyptogeia sphagnicola* (Arnell & J.Perss.)**

Warnst. & Loeske

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Särkisalmi, S side of marsh Vuorensuo. Fen, at *Sphagnum fuscum* hummocks. Scarce. UCS 68365:36264. Coll. Tuomo Kuitunen 2862, 19.VII.2015, conf. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/9944819>).

***Cephalozia bicuspidata* (L.) Dumort.**

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Särkisalmi, S side of marsh Vuorensuo. On decaying log of a duckboard. Scarce. UCS 68365:36264. Coll. Tuomo Kuitunen 2863, 19.VII.2015, det. Tuomo Kuitunen 2015, Timo Kypärä 2015 (OULU <http://id.herb.oulu.fi/9944820>).

***Cephalozia leucantha* Spruce**

FINLAND. Lapponia inarensis (Li/InL), Utsjoki, Skalluvärri, Gidešjohčielgi E base, W side of palsa mire. Thin-peated hummock bog ("pounikko"), intermediate surfaces and sides of hummocks. Occasional. UCS 7749548:3506572. Coll. Kimmo Syrjänen, 20.VIII.2015, det. Kimmo Syrjänen 2016, Turkka Korvenpää & Tarja Marsh 2016 (TUR <http://mus.utu.fi/TBR.121101>).

Cephalozia loitlesbergeri Schiffn.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Särkisalmi, Mälkiänmäki. Pine mire, intermediate surface. Occasional. UCS 68383:36264. Coll. Tuomo Kuitunen 2916, 22.VII.2015, det. Tuomo Kuitunen 2015 (conf. Ari Parnela 2015), Timo Kypärä 2015 (OULU <http://id.herb.oulu.fi/0044873>).

Cephaloziella spinigera (Lindb.) Warnst.

FINLAND. Satakunta (St), Sastamala, Kiiikoinen, E slope of Kartanonvuori. In a cavity. Single shoots among other bryophytes, pcc. UCS 68209:32698. Coll. Harri Arkkio & Ari Parnela, 28.VII.2015, det. Ari Parnela 2015, Riikka Juutinen 2015 (OULU <http://id.herb.oulu.fi/0044616>).

Cladipodiella francisci (Hook.) H.Buch ex Jørg.

FINLAND. Ostrobothnia australis (Oa/EP), Kauhaneva-Pohjankangas National Park, E side of lake Kauhalampi. Gravel path. Presumably abundant, seen a 2 dm² patch, with gemmae. EUREF-FIN 6905358:263334. Coll. Timo Kypärä 2226, 15.IX.2016 (OULU <http://tun.fi/GAT.308>).

Diplophyllum obtusifolium (Hook.) Dumort.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Särkisalmi, Mälkiänmäki, at road turnover place. Flank of a gravel road. Somewhat abundant. UCS 68382:36266. Coll. Tuomo Kuitunen 2915, 22.VII.2015, conf. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/0044872>); Lapponia kittilensis (Lkk/KiL), Muonio, Pallastunturi, near the top of fell Laukukero. Coll. Ilmari Hustich, 5.VII.1933, det. Hans Buch (H4254589). See also Ulvinen & Syrjänen 2011.

Gymnocolea inflata (Huds.) Dumort.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Salokylä, pond Hetteenlampi. Dried up flank near the pond. Abundant. UCS 683732:364437. Coll. Tuomo Kuitunen 3182, 14.VII.2016, conf. Ari Parnela 2016 (OULU <http://id.herb.oulu.fi/0044915>).

Gymnomitrium concinnatum (Lightf.) Corda

FINLAND. Karelia australis (Ka/EK), Kouvola, Enäjärvi, forest area Vääninsaari, S edge of mire Lupansuo. Open cliff face at the border of mire, N exposition. EUREF-FIN 6748831:510056. Coll. Timo Kypärä 2059, 12.VII.2016 (OULU <http://tun.fi/GAT.141>).

Jungermannia caespiticia Lindenb.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Särkisalmi, Mälkiänmäki. Flank of a new gravel road, on sand. Abundant. UCS 68382:36266. Coll. Tuomo Kuitunen 2834, 18.VII.2015, conf. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/00448791>).

Jungermannia leiantha Grolle

FINLAND. EP, Kauhajoki, Kauhajärvi, Kauhaneva-Pohjankangas Natura 2000 area (outside national park), gorge Katikankanjoni, lower part of rapids Pitkäkoski. Stone in rapids. Several stones with 1-2 dm² patches, with perianths. EUREF-FIN 6909895:256433. Coll. Timo Kypärä 2216, 14.9.2016 (OULU <http://tun.fi/GAT.298>).

Jungermannia obovata Nees

FINLAND. Kuopio, Maaninka, Tuovilanlahti, Korkeakoski nature protection area, W end, in a small rivulet that runs from NW. Steep rocky rapids of a small rivulet, on a rock at rivulet's bank. EUREF-FIN 7012604:503018. Coll. Timo Kypärä 2025, 21.VI.2016 (OULU <http://tun.fi/GAT.107>).

Leiocolea badensis (Gottsche) Jørg.

FINLAND. Tavastia australis (Ta/EH), Heinola, Matarniemi – Kiistasniemi, Mäyrämäki W. N-part of calcareous cliff, on moist fine-grained soil at base of an overhanging rock wall. About 2-3 dm² patch, with perianths. UCS 6787873:3453666. Coll. Kimmo Syrjänen, 9.VIII.2016 (TUR <http://mus.utu.fi/TBR.121686>).

Leiocolea bantriensis (Hook.) Jørg.

FINLAND. Lapponia inarensis (Li/InL), Inari, Urho Kekkonen National Park, Luujänkä, rivulet running N from Luulampi pond, W side of bridge, 0,5 meters from a beam that crosses the rivulet. Among other bryophytes. UCS 7586917:3522670. Coll. Riikka Juutinen 6400, 25.IX.2013, conf. Risto Virtanen (cf.) 2015 (OULU <http://id.herb.oulu.fi/0038551>).

Lophozia excisa (Dicks.) Dumort.

FINLAND. Satakunta (St), Sastamala, Vammala. Cemetery chapel of Roismala. On top of stone wall. UCS 6810:3281. Coll. Ari Parnela, 18.VIII.2015 (OULU <http://id.herb.oulu.fi/0045456>).

Lophozia incisa (Schrad.) Dumort.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Särkisalmi, Heralampi. Near the mouth of a stream, at waterline, on detritus. Scarce. UCS 68373:36254. Coll. Tuomo Kuitunen 2909, 22.VII.2015, det. Ari Parnela 2015 (OULU <http://id.herb.oulu.fi/0044866>).

Lophozia laxa (Lindb.) Grolle

FINLAND. Karelia borealis (Kb/PK), Ilomantsi, Koitajoki, Huhus, mire Kakkolansuo W from Koitajoki and adjacent to mire Kesonsuo, N from rivulet Ylä-Juurikkaanpuro (site 73, permanent plot number 10 for vegetation survey of restored mires, Metsähallitus Parks and Wildlife). Oligo-mesotrophic tall-sedge pine fen. Presumably scarce, single shoots among other bryophytes in an area of a few

cm². EUREF-FIN 6970785:691364. Coll. Timo Kypärä 2089, 2.VIII.2016 (OULU <http://tun.fi/GAT.171>).

Lophozia polaris (R.M.Schust.) R.M.Schust. & Damsh.

FINLAND. Regio kuusamoënsis (Ks), Salla, Aatsinginhauta S, Muotkavaara-NW, N end of Könkäänmaa, E slope. Dolomite embankment of about three meters high. Scarce among other bryophytes. UCS 7412501:3584146. Coll. Kimmo Syrjänen, 7.8.2015 (TUR <http://mus.utu.fi/TBR.120860>).

Lophozia sudetica (Nees ex Huebener) Grolle var. *anomala* (Schljakov) Schljakov (syn. *rufescens* Schljakov)

FINLAND. Lapponia inarensis (Li/InL), Inari, Lemmenjoki National Park, Vajjoki river. On wet cliff. Small patches. UCS 761970:345409. Coll. Tuomo Kuitunen 3050, 16.VIII.2015, det. Kimmo Syrjänen 2016 (OULU <http://id.herb.oulu.fi/0044882>).

Lophozia rufescens is no longer an accepted taxon in Europe (Söderström et al. 2016).

Marchantia polymorpha L. subsp. *montivagans* Bischl. & Boisselier

FINLAND. Ostrobottnia kajanensis (Ok/Kn), Puolanka, Siikavaara, SW of Meilikainen. Seeping herb-grass spruce mire. UCS 7227:3546. Coll. Saara Keränen, 28.7.1993, det. Tauno Ulvinen 2015 (OULU <http://id.herb.oulu.fi/0044881>).

Marchantia polymorpha L. subsp. *ruderalis* Bischl. & Boisselier

FINLAND. Savonia australis (Sa/ES), Villmanstrand. Fuktig äng. Coll. Hans Buch, 2.VI.1905, det. Helmi Jokinen 1972 (H4224769).

Marsupella sparsifolia (Lindb.) Dumort.

FINLAND. Lapponia inarensis (Li/InL), Inari, Lemmenjoki National Park, middle part of river Vajjoki. Stony spring. Scarce. EUREF-FIN 7611568:451597. Coll. Timo Kypärä 1837 & Tuomo Kuitunen, 14.VIII.2015 (OULU <http://id.herb.oulu.fi/0044980>).

Moerckia blyttii (Moerch ex Hornem.) Brockm.

FINLAND. Lapponia inarensis (Li/InL), Utsjoki, Boratbokca W, Njallavari. On top of a N slope of fell, snow bed. Scattered in an area of a few m². EUREF-FIN 7771625:523811. Coll. Timo Kypärä 1870, Kimmo Syrjänen & Tuomo Kuitunen, 19.VII.2015 (OULU <http://id.herb.oulu.fi/0045093>).

Moerckia flotoviana (Nees) Schiffn.

FINLAND. Ostrobottnia ultima (Obu/PeP), Rovaniemi, Petäjävaara, wet mire depression W from Petäjävaara hill, about 500 m S from road Petäjävaarantie. Small open rich fen with pine fen borders. A patch of 1 dm², fertile. EUREF-FIN 7355386:430039. Coll. Niina Sankari, 18.VI.2015, det. Riikka Juutinen 2015 (OULU <http://tun.fi/GAK.99>).

New species for Finland. Red list status assessed by Finnish Bryophyte Expert Group in 2015: DD. Previously *Moerckia hibernica* has been treated in Finland in a broad sense. Crandall-Stotler & Stotler (2007) showed that *Moerckia hibernica* s.lat actually includes two species: *Moerckia hibernica* s.str. and *Moerckia flotoviana*. Juutinen (2016) discusses in brief what is known of the two in Finland so far. Both species occur in Finland, but because only limited number of specimens has been studied, both species' distributions and ecological preferences still remain uncertain.

Nardia breidlerii (Limpr.) Lindb.

FINLAND. Lapponia inarensis (Li/InL), Utsjoki, Skällovärri N, palsa mire E from Gidešjohčielgi. Border zone between palsa mire and fjell heath. Compacted peat. A few 10 cm². EUREF-FIN 7746442:506438. Coll. Riikka Juutinen 6727, 20.8.2016, conf. Xiaolan He 2016 (OULU <http://id.herb.oulu.fi/0045045>).

Nowellia curvifolia (Dicks.) Mitt.

FINLAND. Karelia australis (Ka/EK), Miehikkälä, Saareksi, river Vaalimaanjoki, rapids Vuorikoski, Kammaramäki, lower part of rapids, W shore. Swamp, on fallen trunk of large *Populus tremula*. Small patches along 0,5 m distance. EUREF-FIN 6732309:536317. Coll. Timo Kypärä 2069, 13.VII.2016 (OULU <http://tun.fi/GAT.151>).

Odontoschisma elongatum (Lindb.) A.Evans

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Uukuniemi, Suursuo. Narrow rich fen strip along spring fed stream. UCS 6853450:3658379. Coll. Raimo Heikkilä & Markku Suoknuuti, 12.VIII.2015, det. Ari Parnela 2016 (OULU <http://id.herb.oulu.fi/0044992>).

Radula lindenbergiana Gottsche ex C.Hartm.

FINLAND. Ostrobottnia australis (Oa/EP), Kristiinankaupunki, Isokorpi, S slope of mountain Etelävuori, Bastuväggen rock. 3-4 meters deep, 1,5 meters wide and 20 meters long rock pass, moist rock wall. Relatively abundant, 3 dm² in an area of 2 m², fertile. EUREF-FIN 6915810:221321. Coll. Timo Kypärä 2247, 21.IX.2016 (OULU <http://tun.fi/GAT.329>); Tavastia borealis (Tb/PH),

Toivakka, Viisarimäki, pond Iso Kylkislampi, rivulet running from Iso Kylkislampi. Rocky rivulet, vertical surface of a large rock. EUREF-FIN 6882147:447957. Coll. Timo Kypärä 1967, 24.V.2016 (OULU <http://id.herb.oulu.fi/GAP.24>).

***Riccardia chamedryfolia* (With.) Grolle**

FINLAND. Lapponia inarensis (Li/InL), Inari, Urho Kekkonen National Park, E from pond Pessinlampi. Rich fen. Among other bryophytes in an area of 1 dm². UCS 7587267:3522162. Coll. Riikka Juutinen 6396, 24.IX. 2013 (OULU <http://id.herb.oulu.fi/0038542>).

***Tritomaria exsectiformis* (Breidl.) Schiffn. ex**

Loeske

FINLAND. Lapponia inarensis (Li/InL), Utsjoki, Kevo, research station, in front of main building. On side of path. A few cm². EUREF-FIN 7738770:500335. Coll. Timo Kypärä 1870, 21.VIII.2015 (OULU <http://id.herb.oulu.fi/0045091>).

Corrections – Bryophyta

***Bryum klinggraeffii* Schimp.**

FINLAND. Tavastia borealis (Tb/PH). No specimen found from museums. Occurrence in Tb is deleted.

***Dicranoweisia crispula* (Hedw.) Milde**

FINLAND. Karelia ladogensis (KI/LK). Municipality and biogeographical province were incorrect in specimen label (Juutinen & Ulvinen 2014). Correct municipality is Kitee, not Parikkala (LK) and biogeographical province is thus Karelia borealis (Kb/PK). Occurrence in LK is removed.

***Plagiomnium medium* (Bruch & Schimp.)**

T.J.Kop.

FINLAND. Lapponia inarensis (Li/InL). No specimen found from museums (H, OULU, TUR). Occurrence in Li is deleted. All observed herbarium specimens and probably also old literature references under the name *Plagiomnium medium* from Lapponia inarensis seem to belong to *Plagiomnium curvifolium*.

***Rhytidadelphus subpinnatus* (Lindb.) T.J.Kop.**

FINLAND. Ostrobotnia australis (Oa/EP). No specimen found from museums (H, OULU, TUR). Occurrence in Oa is deleted.

***Schistidium lancifolium* (Kindb.) H.H.Blom**

FINLAND. Lapponia sompiensis (Lks/SoL). Misidentification, previous voucher <http://id.herb.oulu.fi/0019264>, Juutinen et al. 2013) is *S. frigidum*, det. Tauno Ulvinen 2015. Occurrence in Lks is deleted.

***Schistidium platyphyllum* (Mitt.) H.Perss.**

FINLAND. Regio Kuusamoënsis (Ks). All specimens in museums are from Russia. Occurrence in Ks is deleted.

Corrections – Marchantiophyta

***Moerckia hibernica* (Hook.) Gottsche**

FINLAND. Savonia australis (Sa/ES), Savonlinna, Haapalahti, Pyörissalo, N end of mire in Pyörissalo forest area. Eutrophic pine fen. UCS 6870625:3606199. Coll. Timo Kypärä 590 & Päivi Korhonen, 31.10.2009 (OULU B70871, Ulvinen & Syrjänen 2010). Misidentification, specimen is *Pellia* sp., det. Riikka Juutinen 2015. According to Hertta database (SYKE), there are no other observations from Sa. Occurrence in Sa is deleted.

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