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## New national and regional biological records for Finland 9. Contributions to Bryophyta and Marchantiophyta 8

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Five species of mosses (Bryophyta: *Oncophorus demetrii*, *Oncophorus integerrimus*, *Oxyrrhynchium speciosum*, *Sphagnum divinum* and *Sphagnum medium*) and one of liverworts (Marchantiophyta: *Kurzia trichoclados*) are presented as new for Finland. *Seligeria calcarea* and *Seligeria pusilla*, previously thought to be regionally extinct from Finland, are reported to be found again. New records in biogeographical provinces for 74 species of mosses and 36 species of liverworts are listed. Finally, 17 occurrences in provinces are removed due to misidentifications or missing specimens.

## Introduction

We present here 180 new records of bryophyte taxa for country and for Finnish biogeographical provinces that have come to our attention during 2017-2018. The publication is eighth in line after year 2010 (Ulvinen & Syrjänen 2010, 2011a, Ulvinen et al. 2012, Juutinen et al. 2013, Juutinen & Ulvinen 2014, Juutinen et al. 2015, Juutinen et al. 2016). Results are based on field work, on herbarium studies and on complete checkup of two databases. Several people have made new records on the field and others have confirmed determinations. Tauno Ulvinen has revised Finnish herbarium material of *Oncophorus*. Sanna Huttunen has revised material of *Rhynchostegium riparioides* and together with Katariina Vuorinen material of *Fissidens bryoides*, *F. gymnanthus* and *F. viridulus* (Huttunen et al. 2018). According to their observations, these taxa cannot be reliably distinguished from each other with morphological characters that are currently used in identification keys. Below we follow their treatment and recognize these taxa at variety level. Riikka Juutinen has compared the Hertta Eliölajit threatened species database of the Finnish Environmental Administration (content on 25.8.2018) and the Finnish Biodiversity Info Facility (FinBIF, <https://laji.fi/en>), including Collection Management System Kotka of Finnish herbaria (content on 22.9.-14.10.2018, depending on taxa) with previous distribution tables of Finnish bryophytes (Juutinen & Ulvinen 2017). It has been suggested, that the information on species occurrence in Finnish biogeographical provinces or other areas could be directly derived from databases. However, because of frequent misidentifications both in reported observations and in herbarium specimens, reliable information on species' distribution will require that bryophyte experts must assess each record before they are accepted. Finally, personnel of herbaria have digitized specimens appearing in this paper and provided information on specimens that are not yet digitized. Harri Vasander came up with the Finnish name for *Sphagnum divinum*. Riikka Juutinen has compiled all the records.

We present six species as new for Finland and report two regionally extinct (RE) species to being found again. Five of the new species are re-

sults of a recent splitting. Tauno Ulvinen has re-determined *Oncophorus* specimens in Finnish herbaria after Lars Hedenäs (2017, 2018) published one new combination and one new species: *Oncophorus demetrii* and *O. integerrimus*. *Sphagnum divinum* and *S. medium* are results of splitting what was formerly known as *S. magellanicum* (Hassel et al. 2018). And finally, *Oxyrrhynchium speciosum* is separated from *Rhynchostegium riparioides* (Huttunen in prep.). In addition, we present 17 corrections for old regional records. These are mainly corrections of misidentifications or deletions based on absent specimens. Updated distribution tables of all Finnish bryophytes can be found from the Internet (<http://www.ymparisto.fi>, Luonto/Lajit/Lajiensuojelutyö/Eliotyoryhmat/Sammaltuoryhma/Suomen\_sammallet). Nomenclature in this paper follows Hodgkett (2015) and Söderström et al. (2016), except for the newly split species (Hassel et al. 2018, Hedenäs 2017, 2018, Huttunen et al. 2018).

We have only accepted records based on public herbarium specimens. Observations based on field determinations or specimens in private herbaria cannot be confirmed and we regard them uncertain. Main source of information now and in the future will be labelled dried herbarium specimens, which provide invaluable archive for scientific studies including biogeography, ecology, morphological and genetic taxonomy. We had to leave out some interesting and valuable bryophyte observations, including *Acaulon muticum* (previously regionally extinct RE) and *Oleolophozia perssonii* in Regio aboënsis (Hertta Eliölajit database 2.11.2018), *Cephalozia elachista* in Satakunta (Laaka-Lindberg & Kalinauskaitė 2014), *Crossocalyx hellerianus* in Karelia ladogensis (Syrjänen et al. 2004) and *Grimmia alpestris* in Regio kuusamoënsis (Juutinen et al. 2017) because of missing specimens. These will be added later if specimens are deposited in public herbaria.

Most of the specimens presented here are digitalized in Kotka Collection Management System and their label data is freely accessible using HTTP URI identifiers. Because specimen data is already accessible through FinBIF, records were not digitalized in Hertta Eliölajit threatened species database, which was done as standard procedure in editions 1-7 of new bryophyte records

for Finland. Majority of the labels are originally written in Finnish and are translated into English here. Additions to original label data are marked with square brackets. In many cases, what is original label data, is inferred from how things are written in Kotka. For *Cephalozia*, *Fuscocephaloziopsis*, *Cephaloziella* and *Nardia* double blind determination was mostly required due to the large proportion of misidentifications in herbarium specimens (Ryömä et al. 2013). Coordinates are given in ETRS-TM35-FIN (EUREF-FIN), Uniform Coordinate System (UCS) or WGS84 degrees. Abbreviations for herbaria follow Index Herbariorum (Thiers 2018): H= Botanical Museum, Finnish Museum of Natural History, University of Helsinki, JYV= Natural History Collections of Jyväskylä University Open Science Centre, KUO= Kuopio Natural History Museum, OULU= Botanical Museum, University of Oulu, TUR= Herbarium, University of Turku.

## New records – Bryophyta

### *Aloina rigida* (Hedw.) Limpr.

FINLAND. Savonia borealis (Sb/PS), Siilinjärvi, Kuuslahti, Jaakonmäki hill, W slope. Rocky slope. UCS 7003:3537. Coll. Reino Fagerstén, 19.8.1974 (KUO <http://tun.fi/SBR.58259>).

### *Anomodon viticulosus* (Hedw.) Hook. & Taylor

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Pitkäpohja, Kalliosaari, cliff E from mountain, N part. Between boulders and on small cliffs. Abundant. UCS 68392:36465. Coll. Tuomo Kuitunen 3563, 17.VII.2018, conf. Ari Parnela 2018 (OULU <http://id.herb.oulu.fi/GAP49>).

### *Barbula convoluta* Hedw.

FINLAND. Lapponia enontekiensis (Le/EnL), Enontekiö, Hetta church village, Hetta church S. Tiled stone stairs of the church, S exposition, on mineral soil. Scarce, small patches and single shoots among other bryophytes. EUREF-FIN 7589485:361609. Coll. Timo Kypärä 2651, 1.IX.2018 (OULU <http://tun.fi/GAT.736>).

### *Brachythecium mildeanum* (Schimp.) Schimp.

FINLAND. Lapponia inarensis (Li/InL), Utsjoki, Mantojärvi, Church Hut Museum. Shore. UCS 77538:35005. Coll. Juhani Räsänen 16/928s, 28.VI.2016, det. Tauno Ulvinen 2017, conf. Sanna Huttunen 2017 (OULU <http://id.herb.oulu.fi/GAL.850>).

### *Bryum tenuisetum* Limpr.

FINLAND. Tavastia australis (Ta/EH), Pälkäne, Kortteenpohja, Haukijärvi. Sandy bank of a forest road, open and sunny spot. Relatively abundant. UCS 68103:33796. Coll. Tuomo Kuitunen 3409, 3.VIII.2017, conf. Kimmo Syrjänen 2018 (OULU <http://id.herb.oulu.fi/GAP50>).

### *Campyliadelphus chrysophyllus* (Brid.) R.S.Chopra

FINLAND. Karelia australis (Ka/EK), Miehikkälä, Hauhia, N from Muhikko, W shore of Vaalimaanjoki river, close to Vuorikoski rapids. At foot of a rock wall. UCS 6735:3536. Coll. Reino Fagerstén, 11.IX.1971 (KUO <http://tun.fi/SBR.32964>).

### *Cirriphyllum piliferum* (Hedw.) Grout

FINLAND. Lapponia kittilensis (Lkk/KiL), Muonio, Pallastunturit, Rihmakuru gorge, SW part. Herb-rich forest in a slope, N exposition. UCS 7560:3377. Coll. Risto Virtanen, 15.VI.1990, det. Risto Virtanen 2007 (OULU <http://id.herb.oulu.fi/0025490>).

### *Cnestrum alpestre*

(Wahlenb. ex Huebener) Nyholm ex Mogensen

FINLAND. Karelia borealis (Kb/PK), Juuka, Tahkovaara, northern gorge of Pirunkirnu. Rocky slope, under a protruding rock outcrop. Scarce, a few cm<sup>2</sup>. EUREF-FIN 7007279:605183. Coll. Timo Kypärä 2468, 13.IX.2017 (OULU <http://tun.fi/GAT.551>).

### *Cratoneuron filicinum* (Hedw.) Spruce

FINLAND. Savonia borealis (Sb/PS), Kuopio, Vuorimäki, upper part of Pölkky puro stream dell, NW from stream curve. In a spring. UCS 69751:35310. Coll. Reino Fagerstén, 23.VIII.2002 (KUO <http://tun.fi/SBR.58083>).

### *Dichelyma capillaceum* (L. ex Dicks.) Myrin

FINLAND. Lapponia sompiensis (Lks/SoL), Sodankylä, Mataraoja brook, upstream the mine, but very close. 1–3 m wide, shaded and stony small brook. EUREF-FIN 7510644:497007. Coll. Minna Kuoppala 24.VIII.2017, det. Krister Karttunen 2018, conf. Kimmo Syrjänen 2018 (H <http://id.luomus.fi/HA.H4260297>).

### *Dichodontium palustre* (Dicks.) M.Stech

FINLAND. Ostrobothnia media (Om/KP), Pyhäjärvi, Haapamäki, Rimpimäki, bottom part of Maaselänlahti bay, shore line close to water works. Sandy shore, on mineral soil. Several small patches in an area of 10 m<sup>2</sup>. EUREF-FIN 7041271:453099. Coll. Timo Kypärä 2675, 18.IX.2018 (OULU <http://tun.fi/GAT.760>).

### *Dicranella grevilleana* (Brid.) Schimp.

FINLAND. Tavastia australis (Ta/EH), Orivesi, Eräjärvi, Vihasjärvi, Tiirikainen N, between road and Längelmäve-

si lake. Edge of herb rich forest strip, side of a field ditch. UCS 682757:337309. Coll. Ari Parnela, 6.V.2016, det. Ari Parnela 2017 (OULU <http://id.herb.oulu.fi/GAL.2103>).

***Dicranella subulata*** (Hedw.) Schimp.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Särkisalmi, Oronmylly. Sandy side of a forest road. Scarce. UCS 683735:362624. Coll. Tuomo Kuitunen 3377, 17.VII.2017 (OULU <http://id.herb.oulu.fi/GAL.2313>).

***Dicranum fragilifolium*** Lindb.

FINLAND. Savonia australis (Sa/ES), Sulkava, Partalansaari island, P. Isoviita summer place. [UCS 684:357] Coll. Reino Fagerstén, 15.VII.1988 (KUO <http://tun.fi/SBR.58056>).

***Dicranum laevidens*** R.S.Williams

FINLAND. Laponia enontekiensis (Le/EnL), Enontekiö, Kilpisjärvi, Malla Strict Nature Reserve, Iso-Malla (Gih-sibákti), SE slope. Oligotrophic *Sphagnum fuscum* fjell mire, among *Sphagnum*. Patches, scarce and occasional. UCS 7678986:3249003. Coll. Kimmo Syrjänen, 29.VII.2016 (TUR <http://mus.utu.fi/TBR.122136>).

***Dicranum leioneuron*** Kindb.

FINLAND. Savonia borealis (Sb/PS), [Pieksämäki] Jäppilä, Suonpohjansuo mire. *Papillosum* fen, severely drained, on hummock. UCS 692838:351443. Coll. Teppo Häyhä, 19.VI.2000, conf. Tauno Ulvinen 2018 (OULU <http://id.herb.oulu.fi/HT.24606>).

***Didymodon fallax*** (Hedw.) R.H.Zander

FINLAND. Tavastia borealis (Tb/PH), Viitasaari, Haapa-saari, Viitasaari church, next to churchyard main gate, NE side. Massive, masoned stone fence, on concrete. Few 20–30 cm<sup>2</sup> sized patches in a stretch of two meters. EUREF-FIN 6994180:442023. Coll. Timo Kypärä 2557, 5.VII.2018, conf. Tauno Ulvinen 10/2018 (OULU <http://tun.fi/GAT.642>).

***Didymodon ferrugineus***

(Schimp. ex Besch.) M.O.Hill

FINLAND. Tavastia australis (Ta/EH), Heinola, Mataraniemi-Kiistasniemi, Mäyrämäki, calcareous embankments W from nature protection area. An open steep calcareous meadow slope between two embankments. UCS 6787761:3453620. Coll. Kimmo Syrjänen, 9.VIII.2016 (TUR <http://mus.utu.fi/TBR.122138>).

***Ditrichum flexicaule*** (Schwägr.) Hampe

FINLAND. Ostrobothnia australis (Oa/EP), Teuva, Luovankylä, Iso-Parra S, middle part of Sikakallio rocks. Cave at foot of a rock face. Probably relatively scarce. EUREF-FIN 6930701:233063. Coll. Timo Kypärä 2427, 16.VIII.2017 (OULU <http://tun.fi/GAT.510>).

***Ditrichum zonatum*** (Brid.) Kindb.

FINLAND. Savonia borealis (Sb/PS), Kuopio, Nilsä, Lastukoski, N end of Pisa hill, Pirunkellari E. Rock face. Relatively abundant, a few dm<sup>2</sup>. EUREF-FIN 7011643:566457. Coll. Timo Kypärä 2382, 24.VII.2017 (OULU <http://tun.fi/GAT.465>); Ostrobothnia kajanensis (Ok/Kn), Suomussalmi, Hossa National Park, S shore of lake Somerjärvi, near Värikallio. Rock face, moist crack, NW exposition. Relatively scarce, a few cm<sup>2</sup>. EUREF-FIN 7267928:605456. Coll. Timo Kypärä 2326, 14.VI.2017 (OULU <http://tun.fi/GAT.409>).

***Drepanocladus sordidus*** (Müll.Hal.) Hedenäs

FINLAND. Alandia (Al/A), Eckerö, Storby, Posthuset W, S side of a dirt road leading to Postbryggan. Moist *Carex panicea* depression. UCS 6701955:3087261. Coll. Kimmo Syrjänen, 2.IX.2001 (TUR <http://mus.utu.fi/TBR.119873>).

***Encalypta procera*** Bruch

FINLAND. Nylandia (N/U), Helsinki, Västersundom, Tryvik. *Picea abies* -dominated herb-rich forest, abandoned lime quarry, on wall. UCS 668144:339842. Coll. Juha Pykälä 32286, 18.I.2008. (H <http://id.luomus.fi/HA.H4258248>).

***Fissidens bryoides*** Hedw.

var. *bryoides* (*Fissidens bryoides*)

FINLAND. Nylandia (N/U), Hfors [Helsinki] Humleberg [Humalisto]. On sandy soil on high river bank. [UCS 6676:3384] Coll. Alfred Oswald Kihlman & Ragnar Hult, 17.V.1877, det. Katariina Vuorinen & Sanna Huttunen 2017 (KUO <http://tun.fi/SBR.4805>); Savonia borealis (Sb/PS), Kuopio, Puijo, (plot no. 10). On mineral ground at a base of rich forest slope. [UCS 6980: 3534] Coll. Matti Haapaasaari 3278 & Reino Fagerstén, 30.VI.1976, det. Katariina Vuorinen & Sanna Huttunen 2017 (KUO <http://tun.fi/SBR.50069>); Karelia borealis (Kb/PK), Tohmajärvi, Akkala, Hiidenvaara NE slope. Steep, shaded cliff. UCS 6903: 3671. Coll. Matti Haapaasaari & Ilkka Kytövuori, 25.V.1964, det. Katariina Vuorinen & Sanna Huttunen 2017 (KUO <http://tun.fi/SBR.21416>); Ostrobothnia kajanensis (Ok/Kn), Puolanka, Hepoköngäs, Heinijoki river. Riverside, cavity in a rock wall. Scarce, single shoots among other bryophytes. UCS 7191924: 3541430. Coll. Timo Kypärä 1696 & Niina Onttonen, 21.VIII.2014, det. Sanna Huttunen 2018 (JYV <http://tun.fi/LC.20654>); Ostrobothnia ultima (Obu/PeP), Tervola, river Louejoki, Myllyköngäs rapids. [UCS 7347:3413] Coll. Mauno J. Kotilainen, 22.VIII.1924, det. Katariina Vuorinen & Sanna Huttunen 2017 (TUR <http://mus.utu.fi/TBR.12412>); Regio kuusamoënsis (Ks/Ks), Kuusamo, river Kitkajoki, Juuma gorges. [WGS84 66.27153 °N 29.39135 °E] Coll. Viktor Ferdinand Brothrus, 22.VII.1883, det. Katariina Vuorinen & Sanna Huttunen 2017 (H <http://id.luomus.fi/HA.H4065672>). See also Huttunen et al. (2018).



***Fissidens bryoides*** Hedw.

var. *gymnandrus* (Buse) R. Ruthe (*F. gymnandrus*)  
FINLAND. Tavastia australis (Ta/EH), Urjala, Menonen, Kivijärvi nature protection area. Swamp depression in a mature forest, on stones and sides of depression. EUREF-FIN 6769995:3307981. Coll. Turcka Korvenpää, 17.VIII.2010, conf. Katariina Vuorinen & Sanna Huttunen 2017 (TUR <http://mus.utu.fi/TBR.116455>); Karelia borealis (Kb/PK), Tohmajärvi, Kemie, Musko, Havukavaara E slope, lower part. *Picea abies* dominated forest, from steep, shaded rock faces. [UCS 6908:670] Coll. Matti Haapasaari 4056, 30.V.1966, det. Katariina Vuorinen & Sanna Huttunen 2017 (KUO <http://tun.fi/SBR.21420>); Lapponia enontekiensis (Le/EnL), Enontekiö, Markkina, river Jietajoki (Hietajoki). In terra inundata arenosoturfosa. [WGS84 68.53 °N 22.39 °E] Coll. Ritva Soini, 3.VIII.1966, det. Katariina Vuorinen & Sanna Huttunen 2017 (H <http://id.luomus.fi/HA.H4065686>). See also Huttunen et al. (2018).

***Fontinalis dichelymoides*** Lindb.

FINLAND. Savonia australis (Sa/ES), Puumala, Rokansalo, Syrjälampi pond. Oligo-dystropic pond, submerged. UCS 68275:35559. Coll. Teppo Häyhä, 11.VI.2001 (TUR <http://mus.utu.fi/TBR.100595>).

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

FINLAND. Tavastia borealis (Tb/PH), Konnevesi, Siikakoski. UCS 6946:3466. Coll. Veli Saari, 27.VI.1996 (JYV <http://tun.fi/LC.20775>).

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

FINLAND. Lapponia enontekiensis (Le/EnL), Enontekiö, Porojärvet, Jokashpakti. [UCS 7684:3283] Coll. Laila Ollila & Heikki Roivainen, 29.VII.1955, det. Tauno Ulvinen 2013 (H <http://id.luomus.fi/HA.H4070523>).

***Grimmia unicolor*** Hook.

FINLAND. Satakunta (St/St), Eura, Haveri, Sieravuori, Pyhäjärvi. Flat, open rock shore, relatively close to waterfront, on cracks. UCS 67743:32424. Coll. Ari Parnela, 13.X.2012 (OULU <http://id.herb.oulu.fi/0035695>).

***Herzogiella seligeri*** (Brid.) Z.Iwats.

FINLAND. Karelia borealis (Kb/PK), Joensuu, Linnunlahti, Vainolahti, between two paths leading from kindergarten to Vainolahti bay. SE end of a shaded depression, on rotten wood. UCS 694724: 363995. Coll. Juhani Räsänen 16/314s b, 17.IV.2016, det. Tauno Ulvinen 2017 (OULU <http://id.herb.oulu.fi/GAL.825>).

***Hygrohypnum ochraceum***

(Turner ex Wilson) Loeske

FINLAND. Karelia ladogensis (KI/LK), Rautjärvi, Koskenkulma, Lohioja. On rapid stones. Abundant, as a mat.

UCS 681774:362155. Coll. Tuomo Kuitunen 3559, 19.VII.2018, conf. Ari Parnela 2018 (OULU <http://id.herb.oulu.fi/GAP.52>).

***Hygrohypnum smithii*** (Sw.) Broth.

FINLAND. Ostrobothnia kajanensis (Ok/Kn), Suomussalmi, Hossa National Park, Korkeakangas, Somerjoki river, Lihapyöre NW. River rock under the waterline. Probably scarce, seen a few shoots. EUREF-FIN 7267594:608621. Coll. Timo Kypärä 2344, 15.VI.2017, conf. Tauno Ulvinen 2017 (OULU <http://tun.fi/GAT.427>).

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

FINLAND. Karelia borealis (Kb/PK), Kontiolahti, Kyykkä, Kirveskallio, lower part of W slope of forested hill, S end of rock face. Crack of a rock, quartzite. UCS 69752:36503. Coll. Juhani Räsänen 16/1846s, 31.VIII.2016, det. Tauno Ulvinen 2017 (OULU <http://id.herb.oulu.fi/GAL.919>).

***Hypnum recurvatum*** (Lindb. & Arnell) Kindb.

FINLAND. Savonia australis (Sa/ES), Savonlinna, Punnaharju, Hiukkajoki, Hannula 400 m E. Abandoned lime quarry, on calcareous boulders. UCS 6855495:3634899. Coll. Juha Pykälä 47636, 9.IX.2014 (H <http://id.luomus.fi/HA.H4258252>).

***Leucodon sciuroides*** (Hedw.) Schwägr.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Pitkäpohja, Kalliosaari, cliff E from mountain, N part. Between boulders and on small cliffs. Scarce. UCS 68390:36465. Coll. Tuomo Kuitunen 3564, 17.VII.2018, conf. Ari Parnela 2018 (OULU <http://id.herb.oulu.fi/GAP.53>).

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

FINLAND. Savonia australis (Sa/ES), Juva, mire on W shore of lake Lentunen. Mesotrophic tall-sedge pine fen, flark-intermediate surface. UCS 68391:35540. Coll. Teppo Häyhä, 25.VII.2000 (OULU <http://id.herb.oulu.fi/HT.24646>).

***Myurella julacea*** (Schwägr.) Schimp.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Intsilä, Väntsävaara. Ultramafic rock outcrop, crack in a vertical rock face. Very scarce. UCS 683356:363433. Coll. Tuomo Kuitunen 3403, 20.VII.2017, conf. Ari Parnela 2017 (OULU <http://id.herb.oulu.fi/GAL.2317>).

***Neckera pumila*** Hedw.

FINLAND. Nylandia (N/U), Kirkkonummi, Laitamaa, Kakarsberget. Cliff, W exposition, shaded oligotrophic rock wall, on vertical crack. UCS 6683106:3361095. Coll. Esa Ervasti 1181 & Esko Vuorinen, 10.IX.2018 (TUR <http://mus.utu.fi/TBR.124257>).

***Oncophorus demetrii*** (Renauld & Cardot) Hedenäs, ryhmytiHKusammal, fjällknölmossa

FINLAND. Regio kuusamoënsis (Ks/Ks), Kuusamo, Juuma, Jäkälävuoma gorge. UCS 735[3]:360[9]. Coll. Timo Koponen 2381, 26.VI.1964, det. Tauno Ulvinen 2018 (H <http://id.luomus.fi/HA.H4098107>); Lapponia enontekiensis (Le/EnL), NW-Le [Enontekiö] Kilpisjärvi, SW-Saana. Paludified place. [UCS 7674:3254] Coll. Laila & Heikki Roivainen, 14.VII.1958, det. Tauno Ulvinen 2018 (H <http://id.luomus.fi/HA.H4098231>); Lapponia inarensis (Li/InL), Utsjoki, Kistuskaidi, N slope. Mountain birch zone, on a wet cliff. [WGS84 69.93°N 26.52 °E] Coll. Yrjö Mäkinen, 26.VII.1956, det. Tauno Ulvinen 2018 (TUR <http://mus.utu.fi/TBR.42703>).

New species for Finland. Recently presented as new for Scandinavia (Hedenäs 2018). It's type locality is in Canada and it has probably a circumpolar distribution. The species grows in northern part of Fennoscandia on moist mountain heaths, wet meadows, fens, wet rocks, brooks and river shores. It is more calciphilous than other *Oncophorus* species.

***Oncophorus elongatus*** (I.Hagen) Hedenäs

FINLAND. Alandia (Al/A), Eckerö, Torp, Degersand. Low-lying, flat seashore rock surface, in a crack. UCS 6694061:3089881. Coll. Kimmo Syrjänen, 1.X.2001, det. Tauno Ulvinen 2018 (TUR <http://mus.utu.fi/TBR.119923>); Regio aboënsis (Ab/V), [Salo] Perniö, Pohjankylä, E from Pohjanjärvi lake. On rotten wood in a moist rock slope. [UCS 6692:3286] Coll. Unto Laine, 22.VIII.1966, det. Tauno Ulvinen 2018 (TUR <http://mus.utu.fi/TBR.88785>); Nylandia (N/U), Espoo, Metsämaa, stream running from Kringelkärr mire. On rotten wood. [UCS 6691:3376] Coll. Timo Koponen, 12.X.1964, det. Tauno Ulvinen 2018 (H <http://id.luomus.fi/HA.H4097889>); Karelia australis (Ka/EK), [Hamina] Vehkalahti, Onkamaa, Pirijsjoki. [UCS 673:352] Coll. Lars Fagerström, 10.VI.1972, det. Tauno Ulvinen 2018 (KUO <http://tun.fi/SBR.18490>); Satakunta (St/St), Kankaanpää, Luomajärvi, Vääräneva. Margin of a mire. [UCS 6866:3239] Coll. Matti Laurila, 17.VI.1935, det. Tauno Ulvinen 2018 (TUR <http://mus.utu.fi/TBR.42264>); Tavastia australis (Ta/EH), Orivesi, Pukala, Neejärvi, a stream running from Neejärvi lake, rapids between road and Isolahti bay in Pukala. On rotten wood in a stream. UCS 68454:33512. Coll. Ari Parnela, 5.X.2006, det. Tauno Ulvinen 2018 (OULU <http://herb.oulu.fi/GAP.59>); Savonia australis (Sa/ES), [Joutsa] Leivonmäki, along the road 5 km from Rutalahti to highway 4, brook crossing. Brookside. UCS 6875:3450. Coll. Reino Fagerstén 15183, 29.IX.1980, det. Tauno Ulvinen 2018 (KUO <http://tun.fi/SBR.54752>); Karelia ladogensis (Kl/LK), [Parikkala] Ukuniemi. [UCS 685:3365] Coll. [Theodor] Simming, 22.VII.1861, det. Tauno Ulvinen 2018 (H <http://id.luomus.fi/HA.H4097956>); Ostrobothnia australis (Oa/EP), Kauhajoki, Muurahainen, Paholuoma, Ruostekangas, S from Ruoste-

toja. Rotten log that has fallen to the river. Scarce, c. 20 cm<sup>2</sup>. EUREF-FIN 6901130:254085. Coll. Timo Kypärä 2233, 16.IX.2016, det. Tauno Ulvinen 2018 (OULU <http://tun.fi/GAT.315>); Tavastia borealis (Tb/PH), Ähtäri, Keskinen Sappio, NE shore. Boulder field ("pirunpelto") behind shore cliffs, in a cavity between rocks. UCS 69494:33470. Coll. Ari Parnela & Harri Arkkio, 26.V.2016, det. Tauno Ulvinen 2018 (OULU <http://id.herb.oulu.fi/GAL.1131>); Savonia borealis (Sb/PS), Tuusniemi, Seinävuori, Pieni Seinälampi pond. On walls of the rocky gorge, bottom of the gorge. UCS 6975:3574. Coll. Reino Fagerstén 4017, 17.VI.1976, det. Tauno Ulvinen 2018 (KUO <http://tun.fi/SBR.33979>); Karelia borealis (Kb/PK), Ilomantsi, Käenkoski. NE from turnaround of a forest road, east from south projecting part of Leppäsuo mire. On rotten wood close to a pond. UCS 698630:370814. Coll. Juhani Räsänen 17/931s and Leena Pulkkinen, 2.VIII.2017, det. Tauno Ulvinen 2018 (OULU <http://id.herb.oulu.fi/GAL.3539>); Ostrobothnia media (Om/KP), [Kokkola] Kälviä, Renögrund [Krunni]. On sea shore rocks. [UCS7103:3311] Coll. A.V. Auer, 5.8.1933, det. Tauno Ulvinen 2018 (TUR <http://mus.utu.fi/TBR.18495>); Ostrobothnia kajanense (Ok/Kn), Vaala, Manamansalo, Martinkanta, NW from the road. Mesotrophic fen, in a hummock at the side of a flark. Abundant. UCS 71450:35070. Coll. Tauno Ulvinen, 12.VIII.1989, det. Tauno Ulvinen 2018 (OULU <http://id.herb.oulu.fi/0037530>); Ostrobothnia ouluensis (Obo/OP), Pudasjärvi, Korpinen, W from Pieni Huosioislampi pond, a stream running from Ollinlampi pond by the path. Side of a stream, on rotten stump. UCS 72309: 35434. Coll. Tauno Ulvinen, 14.VI.2000, det. Tauno Ulvinen 2018 (OULU <http://id.herb.oulu.fi/0037531>); Ostrobothnia ultima (Obu/PeP), Ranua, Hosio, Laitakarinoja. Moist forest by the side of brook, on rotten wood. UCS 7313:3448. Coll. Tauno Ulvinen, 17.VII.1972, det. Tauno Ulvinen 2018 (OULU <http://id.herb.oulu.fi/GAP.58>); Regio kuusamoënsis (Ks/Ks), Taivalkoski, Kirvesoja brook, rocky rapids by the edge of a *Picea abies* forest. Side of a brook. UCS 7248775:3558919. Coll. Risto Virtanen, 19. IX.2007, det. Tauno Ulvinen 2018 (OULU <http://id.herb.oulu.fi/0001116>).

***Oncophorus integerrimus*** (I.Hagen) Hedenäs,

silotiHKusammal, slät skruvknölmossa

FINLAND. Alandia (Al/A), Vårdö, Töftö. In a moist place. [UCS 6698:3129] Coll. Paul Olofsson, 16.IX.1945, det. Tauno Ulvinen 2018 (H <http://id.luomus.fi/HA.H4098396>); Ostrobothnia kajanensis (Ok/Kn), Suomussalmi, Kianta village, Portti (between Salov[aara] and Saarijärvi). Marshy place. [UCS 7241:3606] Coll. Olli Kyyhkynen, 2.VIII.1917, det. Tauno Ulvinen 2018 (H <http://id.luomus.fi/HA.H4098407>); Ostrobothnia ouluensis (Obo/OP), Pudasjärvi, Nuorunka, Nuukavaara. Springy place on a slope in SW-part of hills Näsiäkummut. UCS 7294:3527. Coll. Tauno Ulvinen & Esteri Ohenoja, 24.VII.1973, det. Tauno Ulvinen 2018 (H <http://id.luomus.fi/HA.H4098411>); Ostrobothnia ultima (Obu/PeP), Tervola, Vähäjoki, Vääräkoski rapids. [UCS7342:3430] Coll. Mauno J. Kotilainen, 18.

VIII.1924, det. Tauno Ulvinen 2018 (H <http://id.luomus.fi/HA.H4098416>); Regio kuusamoënsis (Ks/Ks), Kuusamo parish, Juuma, Jäkälävuoma gorge. Edge of pool, on peat. UCS 7353:3610. Coll. Aune & Timo Koponen 27665, 26. VIII.1980, det. Tauno Ulvinen 2018 (H <http://id.luomus.fi/HA.H4098469>); Lapponia kittilensis (Lkk/KiL), Kittilä, Tepsa, Lomajärvi, between Keski- and Ala-Lomajärvi. Eutrophic fen depression in a valley, calcareous ground. UCS 75083448. Coll. Tauno Ulvinen, 13.IX.1983, det. Tauno Ulvinen 2018 (OULU <http://id.herb.oulu.fi/GAP.67>); Lapponia sompiensis (Lks/SoL), Sodankylä, Rajala, Pahtakoski rapids in Saittajoki river, c. 300 m E from cottage on N side of river. Rich fen, in a moist spruce fen passage. UCS 75036:34663. Coll. Tauno Ulvinen, 17.VII.1996, det. Tauno Ulvinen 2018 (OULU <http://id.herb.oulu.fi/GAP.68>); Lapponia enontekiensis (Le/EnL), Enontekiö, Kilpisjärvi, W Saana. [UCS 7675:3259] Subalpine herb rich forest. On stone in a rivulet. Coll. Matti Haapasaaari 2121, 17.VII.1964, det. Tauno Ulvinen 2018 (H <http://id.luomus.fi/HA.H4098567>); Lapponia inarensis (Li/InL), [Inari] Laanila, 3 km north of Mt. Kaunispää. Along brook in *Betula tortuosa* forest. [UCS 7597:3519] Coll. Timo Koponen 26506, 29.VII.1975, det. Tauno Ulvinen 2018 (H <http://id.luomus.fi/HA.H4098627>).

New species for Finland. Recently presented as new for Scandinavia (Hedenäs 2017). Majority of specimens earlier named as *O. virens* belong to this species. Distribution is circumpolar. Additionally, there are specimens collected from the Middle European mountains. In Finland it has a separate locality in Ahvenanmaa (Al/Al), but the main area of distribution is in the northern part of the country north of Kainuu (Kn/Kn). It grows most often in open wetlands, eutrophic fens, moist meadows and shores.

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

FINLAND. Ostrobothnia australis (Oa/EP), Teuva, Luovankylä, Iso-Parra S, middle part of Sikakallio rocks. Top part of a fallen aspen. Probably relatively scarce, a few tufts. EUREF-FIN 6930684:233049. Coll. Timo Kypärä 2429, 16.VIII.2017 (OULU <http://tun.fi/GAT.512>); Karelia borealis (Kb/PK) Ilomantsi, Palopohja, Pötönkangas graveyard. On aspen in the middle of the graveyard. Scarce, one tuft, some cm<sup>2</sup>. EUREF-FIN 6956301:701748. Coll. Timo Kypärä 2404, 31.VII.2017, conf. Kimmo Syrjänen 2017 (OULU <http://tun.fi/GAT.487>).

### *Orthotrichum cupulatum* Hoffm. ex Brid.

FINLAND. Nylandia (N/U), Raasepori, Jussarö E, Österflada SW, hostel yard. On concrete garden tiles. EUREF-FIN 6636898:307951. Coll. Timo Kypärä 2437, 30.VIII.2017 (OULU <http://tun.fi/GAT.520>).

### *Oxyrrhynchium speciosum* (Brid.) Warnst., tursonsammal, strandspötmossa

FINLAND. Regio aboënsis (Ab/V), Raasepori, Pohjanpitäjänlahti, Flada. Growing at 1,5 m depth. WGS84 60.05171 °N 23.53702 °E. Coll. Roosa Mikkola & Anna Lyssenko, 7.IX.2016, det. Sanna Huttunen 2017 (TUR <http://mus.utu.fi/TBR.121367>); Nylandia (N/U), [Raasepori] Tammisaari, Björknäs. [EUREF-FIN 66567:302875] Coll. Hans Luther, 4.IX.1939, det. Sanna Huttunen 2017 (H <http://id.luomus.fi/HA.H4130640>); Karelia australis (Ka/EK), Virolahti, Vilkkilä, bay NW from Kirskaalioniemi cape (Ruosviikinlahti bay). On loam bottom, c. 50,5 m depth, brackish water. UCS 67146:35395. Coll. Tapio Rintanen, 17.IX.1980, det. Sanna Huttunen 2017 (TUR <http://mus.utu.fi/TBR.107691>); Tavastia australis (Ta/EH), Sysmä, lake Päijänne, Majutvesi, Muurisalmi, in lake between the easternmost tip of Pitkäniemi and island Päiväsaari. UCS 6818326:3428049. Coll. Sanna Huttunen 2.VII.2010, det. Sanna Huttunen 2017 (TUR <http://mus.utu.fi/TBR.120402>); Tavastia borealis (Tb/PH), Konnevesi, Hytölä, Vanginvesi. At the bottom of the lake, at a depth of 3–4 meters. Sparsely in a relatively large area, several hundred m<sup>2</sup>. EUREF-FIN 6939397:459004. Coll. Timo Kypärä & Johanna Hallman, 6.IX.2015, det. Sanna Huttunen 2017 (TUR <http://mus.utu.fi/TBR.121366>); Savonia borealis (Sb/PS), Kuopio, Kolmisoppi lake, E side. Floating on lake bottom 4–6 m deep. EUREF-FIN 6971224:530856. Coll. Krister Karttunen & Pirjo Punju, 17.VI.2009, det. Sanna Huttunen 2017 (TUR <http://mus.utu.fi/TBR.106791>); Ostrobothnia media (Om/KP), Lappajärvi, Lappajärvi lake, N part, close to Timo house. UCS 7018852:3331320. Coll. Anna-Maria Koivisto & Anssi Teppo, 3.VIII.2009, det. Sanna Huttunen 2017 (OULU <http://id.herb.oulu.fi/GAP.69>); Ostrobothnia ouluensis (Obo/OP), Oulu, Kintasletto. At 40–60 line. WGS84 65.140115 °N 25.058049 °E. Coll. Jalmari Laurila, 21.VII.2015, det. Sanna Huttunen 2017 (OULU <http://id.herb.oulu.fi/GAL.150>); Ostrobothnia ultima, (Obu/PeP), Kemi, Sarvenselkä. On rocky bottom. WGS84 65.655626 °N 24.324495 °E. Coll. Essi Keskinen, 1.VIII.2015, det. Sanna Huttunen 2017 (OULU <http://id.herb.oulu.fi/GAL.146>); Regio kuusamoënsis, (Ks/Ks), Posio, Kitkajärvi lake, by Suonna village ca. south from mouth of brook Suonna. UCS 7338224:3567134. Coll. Sanna Huttunen, 6.VI.2010, det. Sanna Huttunen 2017 (TUR <http://mus.utu.fi/TBR.121362>).

New species for Finland. Sanna Huttunen is preparing a manuscript about this species.

### *Philonotis caespitosa* Jur.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Joukio, Hotel Laatokanportti, at the shore of the hotel. Thicket of *Phragmites australis*, on sand. Scarce. UCS 682330:363226. Coll. Tuomo Kuitunen 3401, 19.VII.2017, det. Ari Parnela 2017, conf. Tauno Ulvinen 2017 (OULU <http://id.herb.oulu.fi/GAL.2318>).



***Plagiopus oederianus***

(Sw.) H.A.Crum &amp; L.E.Anderson

FINLAND. Ostrobothnia australis (Oa/EP), Kristiinankau-punki, Lapväärtti, S slope of Pyhävuori mountain. [UCS 692:322] Coll. Matti Haapasaaari 6274, 26.X.1965 (KUO <http://tun.fi/SBR.7813>).

***Plagiothecium denticulatum*** (Hedw.) Schimp.var. ***obtusifolium*** (Turner) Moore,

töppölaakasammal

FINLAND. Tavastia borealis (Tb/PH), Virrat, Jäähdy-s-pohja, Munkkivuori. UCS 690:34. Coll. Niilo Söyrin-ki, 5.VIII.1951, det. Tauno Ulvinen 1972 (OULU <http://id.herb.oulu.fi/0011806>); Ostrobothnia media (Om/KP), Haapajärvi, Kuona, Matokangas. UCS 707:342. Coll. Heik-ki Roivainen, 8.VIII.1923, det. Tauno Ulvinen 1998 (OULU <http://id.herb.oulu.fi/0011851>); Ostrobothnia kajan-ensis (Ok/Kn), Sotkamo, Haapaniemi. UCS 7118: 3550. Coll. M. Lindqvist, 18.VII.1928, det. Tauno Ulvinen 1967 (OULU <http://id.herb.oulu.fi/0011833>); Ostrobothnia ouluen-sis (Obo/OP). [Oulu] Oulujoki, Madekoski, Länsisuo. UCS 720:343. Coll. Martti Ohenoja, 11.VI.1962, det. Tau-no Ulvinen 1967 (OULU <http://id.herb.oulu.fi/0011876>).

The taxon is dubious according to Hedenäs (2014) but is included in the Checklist of Euro-pean bryophytes (Hodgetts 2015). Specimens in other Finnish herbaria besides OULU have not been checked and even specimens presented here are uncertain. The taxon is thought to have a northern distribution.

***Pohlia annotina*** (Hedw.) Lindb.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Ti-viä, Lähdelampi pond. Sandy side of a forest road. Very scarce. UCS 68259:36372. Coll. Tuomo Kuitunen 3379, 17.VII.2017, conf. Ari Parnela 2017, Tauno Ulvinen 2017 (OULU <http://id.herb.oulu.fi/GAL.2319>).

***Pohlia elongata*** Hedw.

FINLAND. Savonia borealis (Sb/PS), Vieremä, Riutan-kallio, Pikku Pöytämäki hill, SW side of a rocky hill near Juortinnotko. Shady rock face of tonalitic gneiss. UCS 707362:350038. Coll. Juhani Räsänen 16/897s, 17.VI.2016, det. Tauno Ulvinen 2017 (OULU <http://id.herb.oulu.fi/GAL.851>).

***Pohlia filum*** (Schimp.) Mårtensson

FINLAND. Karelia borealis (Kb/PK), Lieksa, Ruunaa, Jup-pulansärkkä NE. On moist forest road. UCS 70382:36643. Coll. Juhani Räsänen 16/1277s, 25.VII.2016, det. Tauno Ulvinen 2017 (OULU <http://id.herb.oulu.fi/GAL.882>).

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

FINLAND. Karelia borealis (Kb/PK), Kaavi, Niinivaara, Nevansaari, 70 m NE from the SW side of the open mire. Open mire. UCS 698955:359243. Coll. Juhani Räsänen 17/1063s & Marko Riikonen, 19.VIII.2017, det. Tauno Ul-vinen 2018 (OULU <http://id.herb.oulu.fi/GAL.3535>).

***Polytrichum hyperboreum*** R.Br.

FINLAND. Regio kuusamoënsis (Ks/Ks), Salla, N-end of the top of Pieni Pyhänturi, sample plot 351. *Empetrum* – *Dicranum* – Lichenes heath. [UCS 7409:3578] Coll. Matti Haapasaaari, 19.VII.1966 (KUO <http://tun.fi/SBR.25136>).

***Polytrichum pallidisetum*** Funck (*Polytrichastrum pallidisetum*)

FINLAND. Lapponia sompiensis (Lks/SoL), Pelkosen-niemi, Pyhä-Luosto National Park, N from fjell Pyhänturi, mire Tunturiaapa. SphLN – MeVSN. EUREF-FIN 7435175:504961. Coll. Niina Sankari 185/2015, 14.VII.2015, det. Timo Kypärä 2017 (OULU <http://id.herb.oulu.fi/HT.21135>).

***Pseudoamblystegium subtile***(Hedw.) Vanderp. & Hedenäs (*Amblystegium subtile*)

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Intsi-lä, Suurmäki, W end. Ultramafic rock outcrop, at foot of a cliff. UCS 683352:364328. Coll. Tuomo Kuitunen 3390, 21.VII.2017 (OULU <http://id.herb.oulu.fi/GAL.2308>).

***Pseudotaxiphyllum elegans*** (Brid.) Z.Iwats.

FINLAND. Lapponia enontekiensis (Le/EnL), Enontekiö, Ounastunturi, Pahakuru, W part. Rocky low side ravine, in a cavity at the foot on a rock face. C. 2 dm<sup>2</sup> sized patch. EUREF-FIN 7571247:373394. Coll. Timo Kypärä 2635, 27.VIII.2018 (OULU <http://tun.fi/GAT.720>).

***Psilopilum cavifolium*** (Wilson) I.Hagen

FINLAND. Lapponia enontekiensis (Le/EnL), Enontekiö, Käsivarsi wilderness area, E side of fjell Duolljehuh-put. Snow bed under a bank, on thin peat. EUREF-FIN 7677380:266490. Coll. Riikka Juutinen 7154, 14.VIII.2016 (OULU <http://tun.fi/GAK.1239>, as associated species in *Moerckia blyttii* specimen).

***Ptychostomum compactum*** Hornsch.(*Bryum algovicum*)

FINLAND. Karelia borealis (Kb/PK), Kaavi, Niinivaara, W from Onkilampi pond, S end of a rock outcrop, NE ex-position. Serpentine rock wall. UCS 69934:35916, Coll. Juhani Räsänen 16/1715s, 22.VIII.2016, det. Risto Virta-nen 2017 (OULU <http://id.herb.oulu.fi/GAL.888>).

***Ptychostomum creberrimum***(Taylor) J.R. Spence & H.P. Ramsay  
(*Bryum creberrimum*)FINLAND. Karelia australis (Ka/EK), [Kouvola] Sippola, Hirvelä, in Myllyoja brook. Rapids. [UCS 673:350] Coll. Lars Fagerström, 4.VI.1968 (KUO <http://tun.fi/SBR.23906>).***Ptychostomum cyclophyllum*** (Schwägr.) J.R. Spence  
(*Bryum cyclophyllum*)FINLAND. Karelia borealis (Kb/PK), Ilomantsi, NW shore of lake Nuorajärvi, where mire Puohtiinsuo meets bay Honkalahti. Partly sunken log on marshy shore. Relatively scarce, scattered in an area of 2 dm<sup>2</sup>. EUREF-FIN 6960903:706600. Coll. Timo Kypärä 2405, 1.VIII.2017, conf. Kimmo Syrjänen 2017 (OULU <http://tun.fi/GAT.488>).***Rhabdoweisia crispata*** (Dicks.) Lindb.FINLAND. Nylandia (N/U), Kirkkonummi, Laitamaa, Kakarsberget, N part. Cliff, NW exposition, steep oligotrophic cliff wall (steps, cracks and holes), moist horizontal cracks. Small patches, at least two separate locations. UCS 6683525:3361208. Coll. Esa Ervasti 1188 & Esko Vuorinen, 10.IX.2018 (TUR <http://mus.utu.fi/TBR.124259>).***Rhynchostegium riparioides*** (Hedw.) Card.FINLAND. Lapponia enontekiensis (Le/EnL), Enontekiö, Somashjärvi. [UCS 769:328] Coll. A.J. Huuskonen, 3.VIII.1966, det. Tauno Ulvinen 1999 (OULU <http://id.herb.oulu.fi/GAP.63>).***Rhytidiadelphus subpinnatus*** (Lindb.) T.J.Kop.FINLAND. Ostrobotnia australis (Oa/EP), Kristiinankaupunki, Tiukka, W slope of Puskavuori hill, Paratiisilehto. [UCS 692:322] Coll. Matti Haapasaari 6297, 24.X.1965, det. Timo Koponen 1974 (KUO <http://tun.fi/SBR.9244>).***Schistidium robustum*** (Nees & Hornsch.) H.H.BlomFINLAND. Savonia borealis (Sb/PS), [Kuopio] Nilsjä, Loutteinen. [WGS84 63.2197 °N 28.0218 °E] Coll. Risto Tuomikoski, 13.VII.1946, det. Tauno Ulvinen 2017 (H <http://id.luomus.fi/HA.H4219995>).***Schistidium submuticum*** H.H.BlomFINLAND. Ostrobotnia ultima (Obu/PeP), Ylitornio, Tengeliö, Tengeliöjoki river, flooding canal of an old hydroelectric power plant. On concrete. UCS 73691:33563. Coll. Juhani Räsänen 16/1060s, 4.VII.2016, det. Tauno Ulvinen 2017 (OULU <http://id.herb.oulu.fi/GAL.862>).***Schistidium trichodon*** (Brid.) PoeltFINLAND. Tavastia borealis (Tb/PH), Petäjavesi, Heikkilänperä, W part of Sydänmaa village. Moss covered, shaded tile roof of an old sauna. EUREF-FIN 6920242:405461. Coll. Timo Kypärä 2304, 3.VI.2017, conf. Tauno Ulvinen 2017 (OULU <http://tun.fi/GAT.386>).***Scorpidium cossonii*** (Schimp.) HedenäsFINLAND. Karelia ladogensis (KI/LK), Parikkala, Intsilä, Mikonvaara hill. Bottom of quarry, periodically wet depression, on mining waste. Abundant. UCS 68331:36417. Coll. Tuomo Kuitunen 3573, 18.VII.2018, det. Ari Parnela 2018 (OULU <http://id.herb.oulu.fi/GAP.54>).***Seligeria calcarea*** (Hedw.) Bruch & Schimp.FINLAND. Regio kuusamoënsis (Ks/Ks), Salla, S end of gorge Kurtinniittykuru, c. 170 m north from border of Oulanka National Park, east slope. C. 6 m high calcareous wall on a slope, on vertical surface. EUREF-FIN 7370604:596242. Coll. Riikka Juutinen 6944, 14.VI.2016, conf. Risto Virtanen 2016 (OULU <http://tun.fi/GAK.1030>).

Previously assessed in Finland as regionally extinct (RE) (Syrjänen et al. 2010).

***Seligeria pusilla*** (Hedw.) Bruch & Schimp.FINLAND. Regio kuusamoënsis (Ks/Ks), Salla, S end of gorge Kurtinniittykuru, close to border of Oulanka National Park, east slope. Separate calcareous bank on a slope, on partially sheltered vertical surface, SW exposition. Altogether 3 dm<sup>2</sup> in an area of 0,5 m<sup>2</sup>, covers patches of less than 1 cm<sup>2</sup> to 0,5 dm<sup>2</sup>. EUREF-FIN 7370450:596201. Coll. Riikka Juutinen 6937, 14.VI.2016, conf. Risto Virtanen 2016 (OULU <http://tun.fi/GAK.1023>).

Previously assessed in Finland as regionally extinct (RE) (Syrjänen et al. 2010).

***Sphagnum divinum*** Flatberg & Hassel, punaterä-  
raikasammalFINLAND. Regio aboënsis (Ab/V), Salo, Kisko, Toija, Viiri. Pine mire margin of small oligotrophic low-sedge fen, hummock. UCS 6690392: 3303805. Coll. Sanna Huttunen, 21.IV.2018 (TUR <http://mus.utu.fi/TBR.120606>); Satakunta (St/St), Huittinen, Puurijärvi-Isosuo National Park, north part of mire Isosuo, by the nature path. Spruce-pine mire, by the edge of pine mire. Here and there. UCS 6801950:3263295. Coll. Terhi Korvenpää, 29.IX.2018 (TUR <http://mus.utu.fi/TBR.124263>); Tavastia australis (Ta/EH), Tammela, Torrionsuo National Park, by the hiking path coming from Kiljamo. Ridge-hollow pine bog, in a ditch. Patches. UCS 6740903:3314031. Coll. Terhi Korvenpää, 29.IX.2018 (TUR <http://mus.utu.fi/TBR.124265>); Ostrobotnia kajanensis (Ok/Kn), Kuhmo, irrigated area south from Kilpelänvaara, south edge. Irrigated spruce mire, at the edge of forest and mire. Small patches. UCS 7104596:3662570. Coll. Terhi Korvenpää,

4.IX.2018 (TUR <http://mus.utu.fi/TBR.124267>); Ostrobothnia ultima (Obu/PeP), Rovaniemi, Pisavaara Strict Nature Reserve, Pitkäjänkä mire. *Rubus chamaemorus* spruce mire, beside a spring stream. EUREF-FIN 7356413:415414. Coll. Riikka Juutinen 7480, Inkeri Ahonen & Salli Uljas, 25.VIII.2018, det. Riikka Juutinen & Sanna Huttunen 2018 (OULU <http://tun.fi/GAK.2492>).

New species for Finland. Distribution of the species is uncertain due to recent taxonomic changes. Hassel et al. (2018) showed that the name *Sphagnum magellanicum* belongs to a South American taxon and European specimens treated under that name are either *S. medium* or *S. divinum*. Old specimens in Finnish herbaria with name *S. magellanicum* have not been checked. Typical habitat is drier surface in a minerotrophic fen with *Pinus sylvestris*, *Picea abies* or *Betula pubescens* (Laine et al. 2018).

***Sphagnum medium*** Limpr., punarahkasammal  
FINLAND. Regio aboënsis (Ab/V), Salo, Teijo National Park, south part of mire Kylmässuo, 10 m W from spring pond. Close to a spring pond, on pine mire. Patches here and there. UCS 6686136:3281722. Coll. Terhi Korvenpää, 28.IX.2018 (TUR <http://mus.utu.fi/TBR.124262>); Satakunta (St/St), Huittinen, Puurijärvi-Isosuo National Park, north part of mire Isosuo, by the nature path, 40 E from bird watching tower. Edge of *Sphagnum fuscum* bog and low-sedge fen, on hummocks. Patches here and there. UCS 6801518:3263396. Coll. Terhi Korvenpää, 29.IX.2018 (TUR <http://mus.utu.fi/TBR.124264>); (Ta/EH), Tammela, Torronsuo National Park, by the hiking path coming from Kiljamo. Low-sedge fen, on drier hummocks. Here and there. UCS 6740920:3314225. Coll. Terhi Korvenpää, 29.IX.2018 (TUR <http://mus.utu.fi/TBR.124266>); Ostrobothnia ultima (Obu/PeP), Rovaniemi, Pisavaara Strict Nature Reserve, Pitkäjänkä mire. Oligotrophic pine fen. EUREF-FIN 7356503:415769. Coll. Riikka Juutinen 7478, Inkeri Ahonen & Salli Uljas, 25.VIII.2018, det. Riikka Juutinen & Sanna Huttunen 2018 (OULU <http://tun.fi/GAK.2490>); Lapponia sompiensis (Lks/SoL), Sodankylä, Peurasavanto, Koitelainen, Mätöpeura-aapa mire, 975 m N from map name Niemelänkangas. Pine fen, on hummocks. Large pure patches. EUREF-FIN 7516445: 489479. Coll. Riikka Juutinen 7490, 3.IX.2018 (OULU <http://tun.fi/GAK.2502>).

New species for Finland. Distribution of the species is uncertain due to recent taxonomic changes. Hassel et al. (2018) showed that the name *Sphagnum magellanicum* belongs to a South American taxon and European specimens treated under that name are either *S. medium* or *S. divinum*. Old specimens in Finnish herbaria with name *S. magellanicum* have not been checked.

Typical habitat is low hummock, lawn or carpet in an ombrotrophic mire (Laine et al. 2018).

***Sphagnum subfulvum*** Sjörs

FINLAND. Karelia australis (Ka/EK), [Kouvola] Sipola, the NE-shore of Mölöjärvi lake [UCS 6752:3518]. Coll. Lars Fagerström, 11.VIII.1969 (KUO <http://tun.fi/SBR.23079>).

***Tayloria lingulata*** (Dicks.) Lindb.

FINLAND. Tavastia borealis (Tb/PH), Konnevesi, Lummukankylä, Karpinharju, Etelä-Konnevesi National Park, Haukkaloilo south from Haukkalahti bay. Large flat rock near the shore c. 20-30 cm above water surface. EUREF-FIN 6936880:477026. Coll. Timo Kypärä 2302, 29.V.2017 (OULU <http://tun.fi/GAT.384>).

***Thuidium delicatulum*** (Hedw.) Schimp.

FINLAND. Tavastia borealis (Tb/PH), Virrat, Suonijärvet, rock by Myllyoja river. Rock shelf at the foot of a rock wall, somewhat herb-rich spot. UCS 69069: 33304. Coll. Ari Parnela & Tuomo Kuitunen, 15.VIII.2018, det. Ari Parnela 2018 (OULU <http://id.herb.oulu.fi/GAP.56>).

***Timmia austriaca*** Hedw.

FINLAND. Ostrobothnia australis (Oa/EP), Teuva, Luovankylä, Iso-Parra S, N end of Sikakallio rocks. Foot of a rock face, NW exposition. Relatively abundant, a patch of c. 3 dm<sup>2</sup>. EUREF-FIN 6930821:233110. Coll. Timo Kypärä 2421, 16.VIII.2017 (OULU <http://tun.fi/GAT.504>).

***Ulota bruchii*** Hornsch. ex Brid.

FINLAND. Karelia borealis (Kb/PK), Lieksa, Hatunkylä, Ukonsärkkä Natura 2000 area, Pieni Hemmivaara, base of W slope. Old OMT forest, on large aspen. EUREF-FIN 7027203:687006. Coll. Timo Kypärä 2455, 7.IX.2017 (OULU <http://tun.fi/GAT.538>).

## New records – Marchantiophyta

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

FINLAND. Savonia borealis (Sb/PS), Lapinlahti, Varpaisjärvi, Korpiseniemi, Kuikkasuo mire. On spring seepage, on detritus. Small patches in an area of a few m<sup>2</sup>. EUREF-FIN 7021726:532855. Coll. Timo Kypärä 2518, 27.IX.2017 (OULU <http://tun.fi/GAT.601>).

***Aneura mirabilis*** (Malmb.) Wickett & Goffinet  
(*Cryptothallus mirabilis*)

FINLAND. Savonia borealis (Sb/PS), Suonenjoki, Käpylä, Lintharju, rivulet running out from Onkilampi pond, E bank between road and power line. Spring water influ-

enced bank near waterline. EUREF-FIN 6946217:501701. Coll. Timo Kypärä 2305, 13.VI.2017 (OULU <http://tun.fi/GAT.387>).

***Bazzania tricrenata*** (Wahlenb.) Lindb.

FINLAND. Savonia australis (Sa/ES), Savonlinna, Pellossalo, rock hill between Vääräjärvi and Paskolampi. N cliff. UCS 68444:36125-6. Coll. Harri Arkkio, 23.VI.2002 (OULU <http://id.herb.oulu.fi/0016962>).

***Blepharostoma trichophyllum*** (L.) Dumort.

subsp. ***brevirete*** (Bryhn & Kaal.) R.M.Schust.

FINLAND, Regio Kuusamoënsis (Ks/Ks), Salla, Tuntsa, SE side of Auermavaara-Vittoiva-Kuusivaara forested hill, 1,5 km NW from Pirunkirkko. On vertical furrow of serpentinite boulder. EUREF-FIN 7492091:609437. Coll. Riikka Juutinen 7193, 31.VIII.2016 (OULU <http://tun.fi/GAK.1889>, as associated species in *Weissia controversa* specimen).

***Cephalozia ambigua*** C.Massal.

FINLAND. Ostrobotnia media (Om/KP), Pyhäjärvi, Pyhäsalmi, Pyhäsalmi mine. Brook at the foots of the mine tailings. EUREF-FIN 7059521:451895. Coll. Anna-Liisa Ruotsalainen, Piippa Wäli & Kaisa Lehosmaa, 14.IX.2017, det. Riikka Juutinen 2017, Timo Kypärä 2017 (blind determination) (OULU <http://id.herb.oulu.fi/GAL.2457>).

***Cephalozia integerrima*** (Lindb.) Warnst.

FINLAND. Lapponia enontekiensis (Le/EnL), Enontekiö, Ounastunturi, Pahakuru, W part. Moist, shaded rock face of a rocky ravine. Relatively abundant, a patch of almost one dm<sup>2</sup>. EUREF-FIN 7571267:373419. Coll. Timo Kypärä 2637, 27.VIII.2018, conf. Kimmo Syrjänen 2018 (not a blind determination) (OULU <http://tun.fi/GAT.722>).

***Clevea hyalina*** (Sommerf.) Lindb. (*Athalamia hyalina*)

FINLAND. Karelia borealis (Kb/PK), Tohmajärvi, Luosovaara, N cliff of Jalajanvaara hill. A cliff shaded by a mature forest cover, horizontal crack in a cliff face at the upper part of the slope, NE exposition. C. 10 cm × 30 cm patch. EUREF-FIN 6902047:672325. Coll. Timo Kypärä 2413, 3.VIII.2017, conf. Kimmo Syrjänen 2017 (OULU <http://tun.fi/GAT.496>).

***Conocephalum conicum*** (L.) Dumort.

FINLAND. Lapponia enontekiensis (Le/EnL), Enontekiö, Kilpisjärvi, Malla Strict Nature Reserve, fjell Pikku-Malla (Šilismalla danjege, Gilbbesmalla), base of E slope. Bank of a stream in fjell birch forest. Patches along a few meters. UCS 7676930:3251405. Coll. Kimmo Syrjänen, 23.VII.2016 (TUR <http://mus.utu.fi/TBR.122124>).

***Fuscocephaloziopsis albescens***

(Hook.) Vána & L.Söderstr. (*Pleurocladula albescens*)

FINLAND. Karelia borealis (Kb/PK), Lieksa, Ruunaa, road turning point SW from Tökröensuo mire, S side. In a forest road ditch, on bare broken soil. UCS 703748-9:366651. Coll. Juhani Räsänen 16/2029s-5, 9.X.2016, det. Xiaolan He & Sanna Laaka-Lindberg 2016 (H <http://id.luomus.fi/HA.H4259588>, Laaka-Lindberg et al. 2016).

***Fuscocephaloziopsis lunulifolia***

(Dumort.) Vána & L.Söderstr. (*Cephalozia lunulifolia*)

FINLAND. Karelia ladogensis (Kl/LK), Parikkala, Pyhäjärvi, Petäjäsaari island. Herb rich forest. Fairly abundant. UCS 6855393:3652983. Coll. Tuomo Takala 1209, 20.IX.2012, det. Tuomo Takala 2012, conf. Riikka Juutinen 2013 (not a blind determination) (KUO <http://tun.fi/SBR.58148>).

***Fuscocephaloziopsis pleniceps***

(Austin) Vána & L.Söderstr. (*Cephalozia pleniceps*)

FINLAND. Karelia ladogensis (Kl/LK), Parikkala, Tiiviä, Lähdelampi pond. Bryophyte cover at the margin of a spring. Occasional. UCS 682604:363738. Coll. Tuomo Kuitunen 3380, 17.VII.2017, det. Tuomo Kuitunen 2017, Riikka Juutinen 2018 (blind determination) (OULU <http://id.herb.oulu.fi/GAL.2345>).

***Geocalyx graveolens*** (Schrad.) Nees

FINLAND. Lapponia inarensis (Li/InL), Inari, Urho Kekkonen National Park, Luujänkä, headwater stream of Luuoja running N from Luulampi pond, under a bridge of a hiking path. Bank of a river, on peat. Among other bryophytes. UCS 7587111:3522518. Coll. Riikka Juutinen 6401, 25.IX.2013 (OULU <http://id.herb.oulu.fi/0038552>).

***Hygrobiella laxifolia*** (Hook.) Spruce

FINLAND. Tavastia australis (Ta/EH), Jämsä, Hassi, Kähönjoki, Hassinkoski rapids. On wet, slightly slurry rock in a stream. UCS 68491:34034. Coll. Ari Pamela, 27.VII.2018, conf. Riikka Juutinen 2018 (OULU <http://id.herb.oulu.fi/GAP.57>).

***Jungermannia pumila*** With.

FINLAND. Nylandia (N/U), Kirkkonummi, Laitamaa, rivulet running downward from Kakarlampi pond. Pristine rivulet, on top of a rapid rock. 4 cm × 4 cm patch. UCS 66832693361069. Coll. Esa Ervasti 1179 & Esko Vuorinen, 10.IX.2018 (TUR <http://mus.utu.fi/TBR.124256>); Karelia ladogensis (Kl/LK), Rautjärvi, Koskenkulma, Lohioja. On top of rapid stones. Abundant. UCS 681774:362155. Coll. Tuomo Kuitunen 3549, 19.VII.2018, conf. Ari Pamela 2018 (OULU <http://id.herb.oulu.fi/GAP.55>).



***Kurzia trichoclados*** (K. Müller) Grolle, lännenviiksisammal, västlig fingerfliksmossa  
FINLAND. Savonia borealis (Sb/PS), Kuopio, Nilsjä, Las-tukoski, N part of Pisa hill, Pirunkellari E. Cavity at foot of a rock face. One dense patch seen, c. 30 cm<sup>2</sup>. EUREF-FIN 7011644:566487. Coll. Timo Kypärä 2380, 24.VII.2017, det. Kimmo Syrjänen 2017 (OULU <http://tun.fi/GAT.463>).

New species for Finland. This species has suboceanic-montane distribution. It is common along the southwest coast of Norway, also occurs in Sweden and in many parts of Central Europe (Damsholt 2009). It is assessed as threatened in Sweden, Italy, Spain, Czech Republic, Slovakia and Switzerland (Hodgetts 2015). In the Nordic countries it occurs from the sea level to 500 m but in Central Europe it is montane and grows above 780-2550 m (Damsholt 2009).

***Marchantia polymorpha*** L. subsp. *polymorpha*  
FINLAND. Lapponia kittilensis (Lkk/KiL), Kolari, Kalkkikangas, Ruonajänkkä mire. Eutrophic fen, in small spring brook. Scarce. UCS 7490: 3356. Coll. Veli Haikonen 30583, 25.VIII.2016 (H <http://id.luomus.fi/HA.H4259424>).

***Marchantia polymorpha*** L.  
subsp. *ruderalis* Bischl. & Boissel.-Dub.  
FINLAND. Tavastia australis (Ta/EH), Heinola, Sonnanen. New burn-clearing area of *Vaccinium vitis-idaea* type forest, bottom of sandy pit. Homogenous patch. UCS 6797:3469. Coll. Veli Haikonen 30603, 3.IX.2016 (H <http://id.luomus.fi/HA.H4259427>); Karelia ladogensis (Kl/LK), Rautjärvi, Simpele, Peipvuori, side of the village road. Side of a road, soil landfill, on moist sand. Relatively abundant. UCS 681554:362445. Coll. Tuomo Kuitunen 3392 (OULU <http://id.herb.oulu.fi/GAL.2327>); Lapponia kittilensis (Lkk/KiL), Muonio, Rauhalanmaa, Päämaa. *Empetrum* – *Myrtillus* type forest, on campfire base. Scarce. UCS 7547:3363. Coll. Veli Haikonen 30580, 27.VIII.2016 (H <http://id.luomus.fi/HA.H4259425>).

***Marsupella sparsifolia*** (Lindb.) Dumort.  
FINLAND. Lapponia kittilensis (Lkk/KiL), Muonio, Pallastunturi fjells, Vatikuru gorge. On stone in a rivulet. Mixed with other species in an area of 3 dm<sup>2</sup>. UCS 755318:3377443. Coll. Riikka Juutinen, 4.VI.2013 (OULU <http://id.herb.oulu.fi/0038877>).

***Marsupella sphacelata*** (Giesseke ex Lindenb.) Dumort.  
FINLAND. Karelia borealis (Kb/PK), Juuka, Ruokolanvaara, between Toivala and Ruohonkorpi, Toivala NE. On rock in stream. Relatively abundant, on two rocks c. 4 dm<sup>2</sup>. EUREF-FIN 7003755:608187. Coll. Timo Kypärä 2459, 12.IX.2017, conf. Kimmo Syrjänen 2017 (OULU <http://tun.fi/GAT.542>).

***Mesoptychia rutheana*** (Limpr.) L.Söderstr. & Våña (*Leiocolea rutheana*)  
FINLAND. Ostrobotnia australis (Oa/EP), Kauhajoki, Ikkeljärvi, Rytiperä, Harjanneva W. Herb rich sedge fen, spring seepage. EUREF-FIN 6921891:270616. Coll. Timo Kypärä 2353, 19.VI.2017 (OULU <http://tun.fi/GAT.436>).

***Moerckia flotoviana*** (Nees) Schiffn.  
FINLAND. Tavastia australis (Ta/EH), Hattula, Alajoki, 250 m W from Sahakoski. Flooding *Scorpidium* flark fen. UCS 67682:33502. Coll. Teppo Häyhä, 3.XI.2000, det. Riikka Juutinen 2015 (OULU <http://id.herb.oulu.fi/GAL.1851>); Karelia borealis (Kb/PK), Juuka, Tahkovaara hill. In rich fen. UCS 7010:3605. Coll. Stephan Gradstein 2080 & J. de Molenaar, 5.VIII.1972, det. Riikka Juutinen 2016 (KUO <http://tun.fi/SBR.27740>); Ostrobotnia ouluensis (Obo/OP), [Oulu] Kiiminki, Iso Juuanjärvi, SW shore of Juuanjoki river rapids upstream from line path. On submerged rock at rapids shore. UCS 722347:345288. Coll. Martti Ohenoja, 20.9.1964, det. Riikka Juutinen 2017 (OULU <http://id.herb.oulu.fi/GAL.1855>); Regio kuusamoënsis (Ks/Ks), Kuusamo, Kitkajoki, Käyläkoski rapids. Riverbank. [UCS 7358:3596] Coll. Viktor Ferdinand Brothrus, 30.VII.1883, det. A. Potemkin 2008 (H <http://id.luomus.fi/HA.H4258903>); Lapponia kittilensis (Lkk/KiL), Kolari, Äkäsjokisuu, Kalkkikangas, Aittamaa, S from Ruonajänkkä, W from Mannajärvi, W side of quarry. Old track, on periodically wet soil. In a stretch of a few meters. UCS 7490368:3355889. Coll. Kimmo Syrjänen, 21.VII.2016 (TUR <http://mus.utu.fi/TBR.122195>); Lapponia sompiensis (Lks/SoL), Pelkosenniemi, Kätkävaara N, on snow mobile route near forest edge. Base of a hummock, rich fen. Altogether 2 cm<sup>2</sup> in a stretch of about 50 meters. EUREF-FIN 7450867:539388. Coll. Mari Kekäläinen 5/2016, 17.VIII.2016, det. Mari Kekäläinen 2017 (supervised by Riikka Juutinen) (OULU <http://tun.fi/GAK.1825>); Lapponia enontekiensis (Le/EnL), Enontekiö, Malla Strict Nature Reserve, Pikku-Malla E. Foot of a wet calcareous cliff, on soil of dolomite chippings, partly covered by boulders, shaded. Two dm<sup>2</sup> among other bryophytes. UCS 7676842:3251205. Coll. Riikka Juutinen 3816, 30.VI.2011, det. Riikka Juutinen 2015 (OULU <http://id.herb.oulu.fi/GAL.1858>); Lapponia inarensis (Li/InL), Inari, Lemmenjoki National Park, Pikku-Kietsemajärvi lake, W shore. Lake shore, on open nutrient rich mineral soil. A few patches, altogether a few dm<sup>2</sup> in an area of about two m<sup>2</sup>. UCS 7613384:3422371. Coll. Riikka Juutinen 4376, 19.VIII.2010, det. Riikka Juutinen 2015 (OULU <http://id.herb.oulu.fi/GAL.1859>).

See also Juutinen (2017).

***Moerckia hibernica*** (Hook.) Goettsche *sensu stricta*  
FINLAND. Tavastia borealis (Tb/PH), Toivakka, Paloinen, Sääkslahti, Vookelinselkä. Lake shore with rich fen features. Probably scarce. UCS 6883959:3454808. Coll. Johanna Hallman & Timo Kypärä 365, 29.V.2008, det. Riikka Juutinen 2015 (OULU <http://id.herb.oulu.fi/GAL.1860>);



*Ostrobottnia media* (Om/KP), Raahe, Saloinen, N from Ryttilampi pond, E part of small rich fen patch. On bare peat. In an area of 20 cm × 5 cm. UCS 7171803:3377290. Coll. Tauno Ulvinen, 10.X.2003, det. Riikka Juutinen 2017 (OULU <http://id.herb.oulu.fi/GAL.1864>); *Ostrobottnia kajanensis* (Ok/Kn), Puolanka, Lylykylä, about one kilometer from Naulala farm. *Carex flava* – *Trichophorum* – *Campylium stellatum* vegetation type, undertype *Calliergon trifarium*. UCS 7208:3545. Coll. Paavo Havas Kn 27, 19.VIII.1956, det. Riikka Juutinen 2015 (OULU <http://id.herb.oulu.fi/GAL.1861>); *Ostrobottnia ouluensis* (Obo/OP), Oulu, Kiiminki, Iso Juuanjärvi, SW shore of Juuanjoki river, rapids upstream from line path. Shaded, wet rock near river shore. UCS 722347:345288. Coll. Martti Ohenoja CXVIII a), 20.IX.1964, det. Riikka Juutinen 2017 (OULU <http://id.herb.oulu.fi/GAL.1862>, could not find conducting strands despite exceptional effort); Regio kuusamoensis (Ks/Ks), Kuusamo, Oulanka National Park, Tulipuro stream. On stream bank at steep part of the stream rapids. One patch of two sq. dm. UCS 73657:36096. Coll. Risto Virtanen, 29.VIII.1997, det. Riikka Juutinen 2015 (OULU <http://id.herb.oulu.fi/GAL.1866>); *Lapponia sompiensis* (Lks/SoL), Savukoski, Kemihäärä wilderness area, N from Jaaraoja stream. Rich fen by a stream. UCS 7545235:3564689. Coll. Pia Kangas, 11.IX.2012, det. Riikka Juutinen 2016 (OULU <http://id.herb.oulu.fi/0036700>).

See also Juutinen (2017).

***Mylia taylorii*** (Hook.) Gray

FINLAND. Karelia borealis (Kb/PK), Lieksa, Koli, Koli National Park, rocky ridge E from Kolinuuro in Pieni-Koli. Moist rock face, NE exposition. Pure c. 30 cm × 30 cm patch. EUREF-FIN 6998408:642482. Coll. Timo Kypärä 2616, 17.8.2018 (OULU <http://tun.fi/GAT.701>).

***Nardia geoscyphus*** (De Not.) Lindb.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Särkisalmi, Oronmylly. Sandy side of a forest road. Abundant. UCS 683750:362627. Coll. Tuomo Kuitunen 3383, 18.VII.2017, det Tuomo Kuitunen 2017 & Riikka Juutinen 2018 (blind determination) (OULU <http://id.herb.oulu.fi/GAL.2344>).

***Odontoschisma macounii*** (Austin) Underw.

FINLAND. Lapponia kittilensis (LKK/KiL), Kittilä, Venäjoki, about 10 km SE of Kittilä Village. Venäjoki serpentinite rock. UCS 74987(14):33980(38). Coll. Jari Tee-riaho 103.4/04, 5.VIII.2004, conf. Sanna Laaka-Lindberg 2014 (H <http://id.luomus.fi/HA.H4257909>).

***Pellia endiviifolia*** (Dicks.) Dumort.

FINLAND. Karelia borealis (Kb/PK), Lieksa, Koli, Koli National Park, parking lot for downhill skiing slopes, upper edge of parking lot. Sand and mineral soil, open ruder-

ate area. Presumably scarce, only a few thalli were found among other bryophytes. EUREF-FIN 6999620:642326. Coll. Timo Kypärä 2617, 17.VIII.2018 (OULU <http://tun.fi/GAT.702>).

***Pellia epiphylla*** (L.) Corda (subsp. *epiphylla*)

FINLAND. Karelia ladogensis (KI/LK), Rautjärvi, Koskenkulma, Lohioja. On rock in rapids, on depression. Scarce. UCS 681774:362155. Coll. Tuomo Kuitunen 3558, 19.VII.2018, conf. Timo Kypärä 2018 (OULU <http://id.herb.oulu.fi/GAP.66>).

***Pellia neesiana*** (Gottsche) Limpr.

FINLAND. Karelia ladogensis (KI/LK), Rautjärvi, Simpele, Peipvuori, E side. Rock outcrop, under a wet cliff at side of a puddle. Abundant. UCS 68157:36244. Coll. Tuomo Kuitunen 3388, 19.VII.2017, det. Timo Kypärä 2018 (OULU <http://id.herb.oulu.fi/GAL.2343>).

***Riccardia palmata*** (Hedw.) Carruth.

FINLAND. Karelia ladogensis (KI/LK), Parikkala, Särkilähti, Oronmylly, Heralamminhete mire. At the edge of a rivulet flowing through Heralamminhete. Scarce. UCS 36255:68373. Coll. Tuomo Kuitunen 3550, 20.VII.2018, conf. Ari Parnela 2018, Timo Kypärä 2018 (OULU <http://id.herb.oulu.fi/GAP.65>).

***Riccia beyrichiana*** Hampe

FINLAND. Savonia borealis (Sb/PS), Joroinen. In a field ditch, on sandy soil. WGS84 62°15'N 27°20'E. Coll. G. Grotenfelt, 17.VIII.1876 (H <http://id.luomus.fi/HA.H4205417>). This specimen was earlier thought to be misidentified due to mix up between two herbarium specimens. Grotenfelt has collected also *Riccia ciliata* (H <http://id.luomus.fi/HA.H4205330>) from Joroinen in 1877. The specimen <http://id.luomus.fi/HA.H4205417> is present in H and contains no additional determination notes (Sanna Laaka-Lindberg, pers. comm. 22.10.2018).

***Scapania apiculata*** Spruce

FINLAND. Ostrobottnia ultima (Obu/PeP), Rovaniemi, Kemijoki river, between Oikarainen and Tennilä villages, N shore of the river, a ravine situated between houses Rotkola and Rinne, 280 m from the main road downstream. Shaded, narrow ravine with a rivulet, on 10 cm diameter fallen, hard and barkless *Betula*. As a mat in 1 m length of the trunk, altogether 4–5 dm<sup>2</sup>. EUREF-FIN 7365654:466855. Coll. Riikka Juutinen 7519, 24.IX.2018, conf. Timo Kypärä 2018 (OULU <http://tun.fi/GAK.2531>).

***Scapania mucronata*** H.Buch

FINLAND. Karelia australis (Ka/EK), [Hamina] Vehkalahti, Turkia, Salakkaaja, Rysäkoski, the lower rapids. [UCS 67362:35139] Coll. Lars Fagerström, 23.VI.1965, det. T. Laine 1966. (H <http://id.luomus.fi/HA.H4237447>).

***Scapania nemorea*** (L.) Grollé

FINLAND. Karelia borealis (Kb/PK), Kaavi, Luikonlahti, Kekäleinen bay. UCS 6980:3583. Coll. Heikki Roivainen, 26.VIII.1922 (KUO <http://tun.fi/SBR.13422>)

***Scapania spitsbergensis*** (Lindb.) Müll.Frib.

FINLAND. Karelia borealis (Kb/PK), Joensuu, Pieni-Valkea. At bottom of a rocky kettle hole, cold cavities between rocks. UCS 6954239:3672010. Coll. Jari Teeriahho 49.1/2015, 29.VI.2015, det. Kimmo Syrjänen 2017 (OULU <http://id.herb.oulu.fi/GAP40>); Lapponia sompiensis (Lks/SoL), Savukoski, Pyhäkuru. Boulder field at the bottom of a gorge, partly still frozen cavities between boulders. UCS 74676:35654. Coll. Jari Teeriahho 49.3/2014, 2.VII.2014, det. Kimmo Syrjänen 2017 (OULU <http://id.herb.oulu.fi/GAP41>). Also, another specimen from Savukoski (OULU <http://id.herb.oulu.fi/GAL.1357>).

***Scapania uliginosa*** (Lindenb.) Dumort.

FINLAND. Karelia australis (Ka/EK), [Hamina] Vehkalahti, between Reitkalli and Ylämaa. In a puddle at the edge of a spruce fen meadow. [WGS84 60°36'N 27°01'E] Coll. V. Kujala, 11.VII.1922 (H <http://id.luomus.fi/HA.H4217366>).

***Tritomaria exsectiformis*** (Breidl.) Schiffn. ex Loeske  
FINLAND. Karelia borealis (Kb/PK), Nurmes, Mujejärvi, along a brook running to N end of Ylä-Sammaljärvi lake. Spruce fen, on an old dead coniferous tree in the brook. Scarce, single shoots among other bryophytes in an area of two dm<sup>2</sup>. EUREF-FIN 7077861:623867. Coll. Timo Kyppää 2579, 23.7.2018 (OULU <http://tun.fi/GAT.664>).

**Corrections – Bryophyta*****Gymnostomum calcareum*** Nees & Hornsch.

FINLAND. Regio aboënsis (Ab/V), Paimio, Varkaan-kellarinmäki. EUREF-FIN 6701594:268574. Coll. Kimmo Syrjänen, Sanna Laaka-Lindberg, Terhi Korvenpää & Turka Korvenpää, 15.V.2007 (see Syrjänen 2009). The specimen could not be checked as it is not present in TUR. Occurrence is uncertain, probably erroneous; Ostrobothnia kajanensis (Ok/Kn). Misidentification, previous voucher (TUR <http://mus.utu.fi/TBR.87824>) is *Gymnostomum aeruginosum* (det. Heribert Köckinger 2017). Occurrence in Ok is deleted.

Only correctly identified specimens from Finland are from Karelia borealis (Kb/PK) (conf. Heribert Köckinger 2017). All specimens in OULU and TUR were checked by Heribert Köckinger on 2017.

***Hymenostylium gracillimum***

(Nees & Hornsch.) Köckinger & J.Kučera  
(*Gymnostomum boreale*)

FINLAND. Lapponia enontekiensis (Le/EnL). Specimens in OULU and TUR were checked by Heribert Köckinger on 2017. All specimens from Kilpisjärvi area in Enontekiö are *Gymnostomum aeruginosum*. Does not occur in Finland. Only confirmed herbarium specimens from North Europe are from Kulmakkapuro in Paanajärvi (Ks/Rs, Russia) (Köckinger, pers.comm. 2017). There are two unchecked specimens of *Gymnostomum boreale* in H (<http://id.luomus.fi/HA.H4071783>, <http://id.luomus.fi/HA.H4071784>) collected from Salla, Kuolajärvi, Kutsa Nature Reserve (Ks/Rs, Russia) in 1934 by Antero Vaarama (det. Tauno Ulvinen, conf. Lars Hedenäs; Ulvinen 1996).

***Oncophorus virens*** (Hedw.) Brid.

FINLAND. No deletions despite majority of herbarium specimens earlier named as *O. virens* are in fact *O. integerrimus* (det. Tauno Ulvinen 2018).

***Oncophorus wahlenbergii*** Brid.

FINLAND. Karelia australis (Ka/EK), [Hamina] Vehkalahti, Onkamaa, Riissuonsilta. [UCS 672:351] Coll. Lars Fagerström, 4.VII.1969 (H, specimen not digitalized); Karelia ladogensis (Kl/LK), [Parikkala] Uukuniemi. [UCS 685:3365] Coll. [Theodor] Simming, 22.VII.1861, det. Tauno Ulvinen 2018 (H <http://id.luomus.fi/HA.H4097956>, specimen not digitalized); Ostrobothnia australis (Oa/EP), [Vaasa] Vasa, Boskär. [UCS 701:322] Coll. V.F. Brotherus, 15.VII.1880 (H, specimen not digitalized); Ostrobothnia media (Om/KP), [Kokkola] Kälviä, Helluskari [Helluskari]. [UCS 7099:7099] Coll. A.V. Auer, 10.8.1933 (H, specimen not digitalized). Misidentifications. Above mentioned previous vouchers of *Oncophorus wahlenbergii* are all *Oncophorus elongatus* (det. Tauno Ulvinen 2018). There are no other correctly identified herbarium specimens in H, JYV, KUO, OULU or TUR. Occurrences in Ka, Kl, Oa and Om are deleted.

***Rhynchostegium riparioides*** (Hedw.) Card.

(*Platyhypnidium riparioides*)

FINLAND. Karelia australis (Ka/EK), Virolahti, Vilkkilä, bay NW from Kirsallionniemi cape (Ruosviikinhallitus bay). On loam bottom, c. 50,5 m depth, brackish water. UCS 67146:35395. Coll. Tapio Rintanen, 17.IX.1980 (TUR <http://mus.utu.fi/TBR.107691>). This specimen is *Oxyrrhynchium speciosum* (det. Sanna Huttunen 2017). This was the only specimen from Ka, so occurrence is deleted; Savonia borealis (Sb/PS), Kuopio, Kolmisopenlampi pond. [UCS 6974:3531] Coll. Reino Fagerstén 9181, 6.8.1982 (KUO <http://tun.fi/SBR.57047>). This specimen is *Oxyrrhynchium speciosum* (det. Sanna Huttunen 2018). There are no other correctly identified herbarium specimens in H, JYV, KUO, OULU or TUR. Occurrence in Sb is deleted; Karelia borealis (Kb/PK), Liperi, Paskoläh-

de. [UCS 69544:36391] Coll. Reino Fagerstén 9184, 28.VIII.1983 (KUO <http://tun.fi/SBR.57049>). This specimen is *Brachythecium rivulare* (det. Sanna Huttunen 2018). There are no other correctly identified herbarium specimens in H, JYV, KUO, OULU or TUR. Occurrence in Kb is deleted; Ostrobothnia media (Om/KP), Lappajärvi, Lappajärvi lake, N-part of lake, Piihamina. Coll. Anna-Maria Koivisto & Anssi Teppo, 3.VIII.2009 (OULU 10000854, specimen not digitalized). This specimen is *Oxyrrhynchium speciosum* (det. Sanna Huttunen 2017). This was the only specimen from Om, so occurrence is deleted.

### *Sphagnum inundatum* Russow

FINLAND. Ostrobothnia media (Om/KP). No specimens found from herbaria H, OULU or TUR. Occurrence in Om is deleted.

### *Sphagnum rubiginosum* Flatberg

FINLAND. Ostrobothnia australis (Oa/EP). Misidentification. Previous voucher (OULU <http://id.herb.oulu.fi/0035792>; Juutinen et al. 2013) is *Sphagnum girgensohnii* (det. Kjell Ivar Flatberg) (Flatberg, pers.comm. 23.2.2018). The specimen in question is collected from Kauhajoki by Raimo Heikkilä & Tapio Lindholm during 1994. It is not digitalized (despite having HTTP URI identifier) and has not been returned to OULU. Occurrence in Oa is deleted. To present knowledge, the species does not occur in Finland.

## Corrections – Marchantiophyta

### *Harpanthus scutatus* (F.Weber & D.Mohr) Spruce

FINLAND. Ostrobothnia ultima (Obu/PeP), Rovaniemi, Pisavaara Strict Nature Reserve, Isolomanoja. Spruce mire along Isolomanoja brook in eastern part of the Nature Reserve. UCS 7357:3417. Coll. Sanna Laaka-Lindberg, 29.VIII.1989 (H <http://id.luomus.fi/HA.H4254775>). Misidentification. Specimen is *Lophozia* sp. (det. Sanna Laaka-Lindberg & Xiaolan He 2018). This was the only specimen from Obu, so occurrence is deleted.

### *Orthocaulis cavifolius* H.Buch & S.W.Arnell

(*Anastrophyllum cavifolium*)

FINLAND. Lapponia sompiensis (Lks/SoL), Sodankylä, Rajala, Saittajoki river, Pahtakoski rapids. [UCS 75036:34661] Coll. Mauno J. Kotilainen, 15.VIII.1951, det. Martti Ohenoja 2001 (H or OULU, specimen not digitized). The specimen could not be checked as it is no longer present in either H or OULU. Occurrence is uncertain, probably erroneous; Lapponia inarensis (Li/InL). Both specimens (OULU <http://id.herb.oulu.fi/0001740>, <http://id.herb.oulu.fi/0028843>) were erroneous (det. Nadya Konstantinova 2018). The first one by Risto Virtanen on 29.VI.2005 from Rišnjärvarri in Utsjoki commune is *Sphenolobus minutus* (Schreb.) Berggr. var. *grandis* (Gottsche ex Lindb.) Jørg. and the second by Riikka Juutinen on 9.VIII.2011

from Sammuttijänkä – Vaijoenjänkä mire protection area in Inari is *Shljakovianthus quadrilobus* (Lindb.) Konstant. & Vilnet var. *collechyomatica* (*Barbilophozia quadriloba* (Lindb.) Loeske var. *collechyomatica* (R.M. Schust.) Stotler & Crand.-Stotl.). Occurrence in Li is deleted.

Nadya Konstantinova has checked all Finnish material in OULU and TUR. The only confirmed identifications from Finland are by Martti Ohenoja on 7.VII.1962 (TUR <http://mus.utu.fi/TBR.67260>, OULU <http://id.herb.oulu.fi/0001741>, conf. Nadya Konstantinova 2017) and by Heikki Roivainen on 13.VIII.1935 (H <http://id.luomus.fi/HA.H4205570>, conf. Nadya Konstantinova 2010) from Saana in Enontekiö commune. All other specimens in OULU were misidentified (nine specimens from the 21<sup>st</sup> century). Of the two specimens in H, the one collected from Ridnitsohokka (<http://id.luomus.fi/HA.H4225301>) has not been checked by Konstantinova (Sanna Laaka-Lindberg, pers. comm. 20.3.2018). Possible specimens in JYV or KUO were not checked.

### *Scapania uliginosa* (Lindenb.) Dumort.

FINLAND. Nylandia (N/U). Previous voucher by V. Kujala on 11.VII.1922 from [Hamina] Vehkalahti (Ka/EK) (H <http://id.luomus.fi/HA.H4217366>) has been misplaced in province N since 2011 (Ulvinen & Syrjänen 2011b). Occurrence in N is deleted.

## References

- Alava, R., Laine, U. & Huhtinen, S. 2004: Edvard August Vainio's travels to Finnish and Russian Karelia and to Finnish Lapland. – Publications from the Herbarium University of Turku 9: 1–62. Turku. Univ. of Turku.
- Damsholt, K. 2002: Illustrated Flora of Nordic Liverworts and Hornworts. – Nordic Bryological Society, Lund. p. 443–445.
- Hassel, K., Kyrkjeeide, M.O., Yousefi, N., Prestø, T., Stenøien, H.K., Shaw, J.O. & Flatberg, K.I. 2018: *Sphagnum divinum* (sp. nov.) and *S. medium* Limpr. and their relationship to *S. magellanicum* Brid. – Journal of Bryology 2018: 1–26. <https://doi.org/10.1080/03736687.2018.1474424>
- Hedenäs, L. 2014: *Plagiothecium denticulatum* skogssidenmossa p. 306–307. – In: Nationalnyckeln till Sveriges flora och fauna. Bladmossor: Skirmossor-baronmossor. Bryophyta: Hookeria-Anomodon. ArtData-banken, SLU, Uppsala.
- Hedenäs, L. 2017: Scandinavian *Oncophorus* (Bryopsida, Oncophoraceae): species, cryptic species, and intraspecific variation. – European Journal of Taxonomy 315: 1–34.
- Hedenäs, L. 2018: *Oncophorus demetrii*, a fifth Scandinavian species of *Oncophorus* (Musc) possible to recognize by morphology. – *Lindbergia* 41: 1–9.
- Hodgetts, N.G. 2015: Checklist and country status of European bryophytes – towards a new Red List for Eu-

- rope. – Irish Wildlife Manuals, No 84. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland. 125 pp.
- Huttunen S., Juutinen R. & Vuorinen K.E.M. 2018: Taxonomy, ecology and conservation status of the mosses *Fissidens bryoides*, *F. gymnanthus* and *F. viridulus* in Finland. – *Annales Botanici Fennici* 55: 339–358.
- Juutinen, R. 2017: Mitä suomalaiset lettokehräsammalet oikein ovat? – *Lutukka* 33: 24–27.
- Juutinen, R., Syrjänen, K., Huttunen, S., Kypärä, T., Sallantausta, T. & Kuitunen, T. 2017: Sammaltyöryhmä tutkimusretkellä Sallan Tuuntsassa 28.8.–1.9.2016. – *Bryobrotherella* 20: 67–85.
- Juutinen, R. & Ulvinen, T. 2014: Suomen sammalien eliömaakunnallisen levinneisyysluettelon lisäyksiä ja poistoja 5. – *Bryobrotherella* 17: 20–30.
- Juutinen, R. & Ulvinen, T. 2017: Suomen sammalien levinneisyys eliömaakunnissa. – Suomen ympäristökeskus. 3.1.2017. [http://www.ymparisto.fi/fi-FI/Luonto/Lajit/Lajienuusojelutyo/Eliotyoryhmat/Sammalyoryhma/Suomen\\_sammalet](http://www.ymparisto.fi/fi-FI/Luonto/Lajit/Lajienuusojelutyo/Eliotyoryhmat/Sammalyoryhma/Suomen_sammalet)
- Juutinen, R., Ulvinen, T., Huttunen, S., Callaghan, D., Hassel, K., He, X., Häyhä, T., Ignatova, E.A., Kuitunen, T., Kypärä, T., Laitinen, T., Marsh, T., Oldén, A., Parnela, A., Syrjänen, K., Takala, T. & Virtanen, R. 2015: Suomen sammalien eliömaakunnallisen levinneisyysluettelon lisäyksiä ja poistoja 6. – *Bryobrotherella* 18: 58–69.
- Juutinen, R., Ulvinen, T. & Syrjänen, K. 2013: Suomen sammalien eliömaakunnallisen levinneisyysluettelon lisäyksiä ja poistoja 4. – *Bryobrotherella* 16: 84–106.
- Juutinen, R., Ulvinen, T., Syrjänen, K., Kypärä, T., Kuitunen, T., Parnela, A., Heikkilä, R., Suoknuuti, M., Marsh, T., Arkkio, H., He, X., Huttunen, S., Tahvanainen, T., Häyhä, T., Jääskeläinen, K. & Vainio, O. 2016: New national and regional biological records for Finland 7. Contributions to Bryophyta and Marchantiophyta. – *Memoranda Soc. Fauna Flora Fennica* 22: 35–47.
- Laaka-Lindberg, S., Anttila, S. & Syrjänen, K. (eds.) 2009: Suomen uhanalaiset sammalet. – Suomen ympäristökeskus, Helsinki. Ympäristöopas. P. 115–117.
- Laaka-Lindberg, S. & Kalinauskaitė, N. 2014: Sammalhavainnot Yyterin Santakarista. – *Bryobrotherella* 17: 31–38.
- Laaka-Lindberg, S., Räsänen, J. & Xiaolan, H. 2016: Metsäteiden maksasammalia Pohjois-Karjalassa ja huomioita aiemmin heimoon Jungermanniaceae kuuluneiden lajien taksonomiasta. – *Bryobrotherella* 19: 62–70.
- Laine, J., Flatberg, K.I., Harju, P., Timonen, T., Minkkinen, K., Laine, A., Tuittila, E.-S. & Vasander, H. 2018: Sphagnum mosses – The Stars of European Mires. – University of Helsinki, Department of Forest Sciences, Sphagna Ky, Helsinki. p. 40–48.
- Rassi, P., Hyvärinen, E., Juslén, A. & Mannerkoski, I. (eds.) 2010: The Red List of Finnish Species. – Ympäristöministeriö & Suomen ympäristökeskus, Helsinki. P. 224.
- Ryömä, R., Oldén, A., Xiaolan, H. & Laaka-Lindberg, S. 2013: Suomen puutteellisesti tunnetut maksasammal-suvut: siiransammalet *Nardia*, rahtusammalet *Cephaloziella* ja pihtisammalet *Cephalozia*. – Suomen ympäristö 7/2013. Suomen ympäristökeskus. Helsinki. 61 s.
- Syrjänen, K. 2009: *Gymnostomum calcareum* – äärimmäisen uhanalainen. – In: Laaka-Lindberg, S., Anttila, S. & Syrjänen, K. (eds.). Suomen uhanalaiset sammalet. P. 115–117. Suomen ympäristökeskus, Helsinki. Ympäristöopas.
- Syrjänen, K., Anttila, S., Ulvinen, T., Laaka-Lindberg, S., Huttunen, S., Laitinen, T., Ahonen, I., Fagerstén, R., Xiaolan, H., Juslén, A., Korvenpää, T., Korvenpää, T., Parnela, A., Sallantausta, T., Vainio, O., Virtanen, R., Piippo, S. & Rikkinen, J. 2010: Bryophytes. – In: Rassi, P., Hyvärinen, E., Juslén, A. & Mannerkoski, I. (eds.). The Red List of Finnish Species. P. 224. Ympäristöministeriö & Suomen ympäristökeskus, Helsinki.
- Syrjänen, K., Ulvinen, T., Arkkio, H., Koponen, T., Pykälä, J., Rintanen, T., Sallantausta, T., Virtanen, V. & Vuorinen, E. 2004: Sammalretkeily Kaakkois-Suomeen 13–14.9.2003. – *Bryobrotherella* 7: 38–57.
- Söderström, L., Hagborg, A., von Konrat, M., Bartholomew-Began, S., Bell, D., Briscoe, L., Brown, E., Cargill, D.C., Costa, D.P., Crandall-Stotler, B.J., Cooper, E.D., Dauphin, G., Engel, J.J., Feldberg, K., Glenny, D., Gradstein, S.R., He, X., Heinrichs, J., Hentschel, J., Ilkiu-Borges, A.L., Katagiri, T., Konstantinova, N.A., Larraín, J., Long, D.G., Nebel, M., Pócs, T., Felisa Puche, F., Reiner-Drehwald, E., Renner, M.A.M., Sassi-Gyarmati, A., Schäfer-Verwimp, A., Moragues, J.G.S., Stotler, R.E., Sukkharak, P., Thiers, B.M., Uribe, J., Váña, J., Villarreal, J.C., Wigginton, M., Zhang, L., Zhu, R.-L. 2016: World checklist of hornworts and liverworts. – *PhytoKeys* 59: 1–821. <https://doi.org/10.3897/phytokeys.59.6261>
- Thiers, B. 2018: Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. <http://sweetgum.nybg.org/science/ih/>
- Ulvinen, T. 1996: Bryophytes of the former Kutsa Nature Reserve. – *Oulanka Reports* 16: 53–62.
- Ulvinen, T. & Syrjänen, K. 2010: Suomen sammalien eliömaakunnallisen levinneisyysluettelon lisäyksiä ja poistoja. – *Bryobrotherella* 13: 84–92.
- Ulvinen, T. & Syrjänen, K. 2011a: Suomen sammalien eliömaakunnallisen levinneisyysluettelon lisäyksiä ja poistoja 2. – *Bryobrotherella* 14: 15–24.
- Ulvinen, T. & Syrjänen, K. 2011b: Suomen sammalten levinneisyys eliömaakunnissa 2. 30.5.2011. This is no longer in the Internet but can be sent upon request.
- Ulvinen, T., Syrjänen, K. & Juutinen, R. 2012: Suomen sammalien eliömaakunnallisen luettelon lisäyksiä ja poistoja 3. – *Bryobrotherella* 15: 67–74.