

**This is an electronic reprint of the original article.
This reprint *may differ* from the original in pagination and typographic detail.**

Author(s): von Bonsdorff, Tea; Niskanen, Tuula; Liimatainen, Kare; Kytövuori, Ilkka; Huhtinen, Seppo; Vauras, Jukka; Höijer, Paavo; Kekki, Tapio; Lahti, Mauri; Puolasmaa, Arto; Purhonen, Jenna; Halme, Panu; Jakobsson, Stefan; Toivonen, Mika; Söderholm, Unto

Title: New national and regional biological records for Finland 8. Contributions to agaricoid, gastroid and ascomycetoid taxa of fungi 5

Year: 2016

Version:

Please cite the original version:

von Bonsdorff, T., Niskanen, T., Liimatainen, K., Kytövuori, I., Huhtinen, S., Vauras, J., Höijer, P., Kekki, T., Lahti, M., Puolasmaa, A., Purhonen, J., Halme, P., Jakobsson, S., Toivonen, M., & Söderholm, U. (2016). New national and regional biological records for Finland 8. Contributions to agaricoid, gastroid and ascomycetoid taxa of fungi 5. *Memoranda : Societatis pro Fauna et Flora Fennica*, 92, 120-128.
<http://ojs.tsv.fi/index.php/msff/article/view/60364>

All material supplied via JYX is protected by copyright and other intellectual property rights, and duplication or sale of all or part of any of the repository collections is not permitted, except that material may be duplicated by you for your research use or educational purposes in electronic or print form. You must obtain permission for any other use. Electronic or print copies may not be offered, whether for sale or otherwise to anyone who is not an authorised user.

New national and regional biological records for Finland 8. Contributions to agaricoid, gastroid and ascomycetoid taxa of fungi 5

Tea von Bonsdorff, Tuula Niskanen, Kare Liimatainen, Ilkka Kytövuori, Seppo Huhtinen, Jukka Vauras, Paavo Höijer, Tapio Kekki, Mauri Lahti, Arto Puolasmaa, Jenna Purhonen, Panu Halme, Stefan Jakobsson, Mika Toivonen & Unto Söderholm

von Bonsdorff, T., & Kytövuori, I., Finnish Museum of Natural History, Botany Unit, Mycology Team, P.O.Box 7, FI-00014, University of Helsinki. E-mail: tea.vonbonsdorff@helsinki.fi

Niskanen, T., The Jodrell Laboratory Royal Botanic Gardens, Kew, Surrey TW9 3AB, UK.

Liimatainen, K., Plant Biology, Dept. of Biosciences, P.O. Box 65, FI-00014 Univ. of Helsinki.

Huhtinen, S., Herbarium, FI-20014 University of Turku.

Vauras, J., Biol. Collections of Åbo Akademi University, Herbarium, FI-20014 Univ. of Turku.

Höijer, P., Riihipellontie 28 as. 7, FI-07500 Askola.

Kekki, T., Jyväskylä University Museum, P.O. BOX 35, FI-40014 University of Jyväskylä.

Lahti, M., Verhonkatu 5, FI-13100 Hämeenlinna.

Puolasmaa, A., Herbarium, FI-20014 University of Turku.

Purhonen, J., Department of Biological and Environmental Science, P.O. BOX 35, FI-40014 University of Jyväskylä.

Halme, P., Jyväskylä University Museum, P.O. BOX 35, FI-40014 University of Jyväskylä.

Jakobsson, S., Vilhelmsbergsgränden 20 F 161, FI-00500 Helsingfors

Toivonen, M., Herbarium, FI-20014, University of Turku.

Söderholm, U., Säästäjänkatu 11 C 17, FI-33840 Tampere

Two genera: *Marchandiomyces*, *Rectipilus* and 16 species of agaricoid and gastroid fungi (Basidiomycota): *Clitopilus daamsii*, *Coprinopsis canocephs*, *Coprinopsis laanii*, *Cortinarius albolens*, *Cortinarius flexibilifolius*, *Cortinarius megacystidiosus*, *Cortinarius russulaespermus*, *Cortinarius tillamookensis*, *Inocybe assimilata*, *Laccaria chibinensis*, *Laccaria violaceibasis*, *Lactarius porninsis*, *Lycoperdon mammiforme*, *Marchandiomyces aurantiacus*, *Psathyrella pygmaea* and *Rectipilus fasciculatus* are reported here as new to Finland. One genus of ascomycetoid fungi (Ascomycota): *Balsamia* and four species: *Balsamia platyspora*, *Barbatosphaeria arboricola*, *Calycellina betulina* and *Geoglossum elongatum* are reported here as new to Finland. A new combination for *Belonium betulinum* (under *Calycellina betulina*) is proposed. Information of species recently published elsewhere: *Cortinarius alboamarensis*, *Cortinarius ochroamarus*, *Cortinarius pastoralis*, *Cortinarius fulvescentioideus*, *Cortinarius nymphatus*, *Cortinarius pseudobulliardioides*, *Cortinarius tenuifulvescens*, *Inocybe caprimulgi*, *Inocybe lacunarum*, *Inocybe substellata* and *Lamelloclavaria petersenii* is brought here together. New records of little collected and rare taxa: *Bovista tomentosa*, *Geastrum floriforme*, *Hygrophorus exiguus*, *Hysterangium crassum*, *Lactarius scrifluis*, *Lepiota pseudolilacea*, *Leucopaxillus tricolor*, *Sarcosphaera coronaria*, *Scleroderma verrucosum*, *Squamanita contortipes*, *Tulostoma niveum* and *Volvariella reidii* are also listed. Corrections of previous information are given on: *Hysterangium coriaceum* (under *Hysterangium crassum*) and *Lepiota clypeolarioides* (under *Lepiota pseudolilacea*).

Introduction

Here we present records of 43 fungal taxa, based on field work and on herbarium studies. Three genera and 20 species are reported here as new to Finland. Information concerning 11 additional species recently published elsewhere, is brought together. New records of 12 little collected and rare species are listed. One new combination is proposed. We also include additions and corrections to previous information.

Coordinates are given in Uniform Coordinate System (USC). H = Botanical Museum, Finnish Museum of Natural History, TUR = Herbarium, University of Turku, TUR-A = Herbarium of Åbo Akademi University, JYV = Natural history collections of Jyväskylä University Museum, OULU = Botanical Museum, University of Oulu, SAV = Institute of Botany, Slovak Academy of Sciences, Bratislava.

Basidiomycota

Bovista tomentosa (Vittad.) Quél.

FINLAND. Ostrobothnia ultima (**Obu/PeP**), Tornio, Kalkkima. At a dirt road near a limestone quarry. UCS 731410:338513, coll. & det. Mauri Lahti, 04.IX.2012 (TUR 203186); Keminmaa, Kallinkangas. On a dry meadow in cemetery. UCS 7305:3387, coll. & det. Hilka Lahti & Mauri Lahti 121/12, 07.IX.2012, (TUR 200999); Keminmaa. On a dry meadow next to the brick wall of cemetery. UCS 7305:3387, coll. & det. Mauri Lahti 127/12, 07.IX.2012 (TUR 201014); Tervola, Koivu. On a sandy grassland at railway station. UCS 734306:341934, coll. & det. Tapio Kekki 699, 12.IX.2012 (TUR); Keminmaa Old church. With mosses on an old stone fence. UCS 730414:338806, coll. & det. Tapio Kekki 817, 29.IX.2012 (TUR); Keminmaa, Kallinkangas. Along roadside close to ski area. UCS 7304:3386, coll. & det. Mikael Jeppson, 03.IX.2013 (TUR 201401); Kemi, Kuivanuoro. On sand with *Polytrichum* in an old sandpit area. UCS 72984:33853, coll. & det. Tapio Kekki 2249, 23.X.2015 (H); Keminmaa, Kallinkangas west side. On calcareous gravel near dirt road. UCS 730539:338569, coll. & det. Tapio Kekki 2258, 19.VI.2016 (H); Lapponia kittilensis (**Lkk/KiL**), Kolari, Äkäsjoensuu. On calcareous sand under *Pinus* near dirt road. UCS 748827:335716, coll. & det. Tapio Kekki 2506, 03.IX.2016 (H); Kolari, Äkäsjoensuu. On calcareous sand at old cement factory area. UCS 748914:335658, coll. & det. Tapio Kekki 2530, 03.IX.2016 (H).

Rare taxon, classified as Endangered (EN) in Finland (Rassi et al. 2010; von Bonsdorff et al.

2010). Earlier known from three places in Finland, two near locations in Kolari, Äkäsjoensuu (**Lkk/KiL**) 1968 and 1989, and one location in Kemi, Ajos (**Obu/PeP**) since 1984. All old and new collections are from two calcareous areas of North-Western Finland so the distribution of this taxon seems to be very limited. New records of little collected and rare species.

Clitopilus daamsii Noordel.

FINLAND. Tavastia australis (**Ta/EH**), Muurame, Kuusimäki. On fallen birch (*Betula* sp.) trunk. UCS 69020:34218, coll. Anni Rintoo (AM 2544), det. Panu Halme, 08.X.2009 (JYV).

Very rare or overlooked taxon. According to literature on rotten wood, herbaceous plants and on other fungi (Knudsen & Vesterholt 2012). New to Finland.

Coprinopsis canoiceps (Kauffman) Örstadius & E. Larss.

FINLAND. Lapponia kittilensis (**Lkk/KiL**), Kittilä, Mustavaara. On soil and rotten wood of *Salix caprea*, herb-rich and calcareous mixed forest. UCS 75062:34328, coll. & det. Tapio Kekki 1900, 26.VIII.2015, conf Lars Örstadius (H).

Known before as *Psathyrella canoiceps* (Örstadius et al. 2015). Very rare taxon, collected from other Scandinavian countries in temperate, hemiboreal and subarctic areas. On rich soil with deciduous trees, with preference for calcareous soil, sometimes attached to decayed wood (Knudsen & Vesterholt 2012). New to Finland.

Coprinopsis laanii (Kits van Wav.) Redhead, Vilgalys & Moncalvo

FINLAND. Tavastia australis (**Ta/EH**), Ruovesi, Runebergin lähde. In grass near a rotten wood. UCS 687948:334644, coll. Marjut Järvinen, 05.IX.2015, det. Paavo Höijer (H6060649).

New to Finland.

Cortinarius albolens Bidaud, Carteret & Reumaux 2012

FINLAND. Nylandia (**N/U**), Espoo, Träskanda. Under *Quercus* and *Corylus* on mull soil. UCS 6681:3373, coll. & det. Kare Liimatainen & Tuula Niskanen 12-045, 18.IX.2012 (H).

In hemiboreal deciduous forests on mull soil. Most likely overlooked. Subgenus *Telamonia*. New to Finland.

***Cortinarius flexibilifolius* Carteret 2004**

FINLAND. Nylandia (N/U), Espoo, Träskanda. Under *Quercus* and *Corylus* on mull soil. UCS 6681:3373, coll. & det. Kare Liimatainen & Tuula Niskanen 12-038, 18.IX.2012 (H). Tammisaari, Ramsholmen. Mixed, damp deciduous forest (*Quercus*, *Betula*, *Corylus*, *Acer*, *Fraxinus*). Coll. & det. Kare Liimatainen & Tuula Niskanen, 07.VII.2013, sequence from an environmental soil sample only (no fruitbody collected).

In hemiboreal deciduous forests on mull soil. Most likely overlooked. Subgenus *Telamonina*. New to Finland.

***Cortinarius megacystidiosus* Reumaux 2012**

FINLAND. Nylandia (N/U), Espoo, Träskanda. Under *Quercus* on bare mull soil. UCS 6681:3373, coll. & det. Kare Liimatainen & Tuula Niskanen 12-042, 18.IX.2012 (H).

In hemiboreal deciduous forests on mull soil. Most likely overlooked. Subgenus *Telamonina*. New to Finland.

***Cortinarius russulaespermus* Carteret 2004**

FINLAND. Regio aboënsis (Ab/V), Parainen, Lenholmen. *Quercus* dominated forest with some *Tilia*, *Pinus*, *Picea* and *Betula*. UCS 6690:3235, coll. & det. Kare Liimatainen & Tuula Niskanen, 16.VII.2013, sequence from an environmental soil sample only (no fruitbody collected); Turku, Ruissalo, Marjaniemi. *Quercus* dominated forest. UCS 6712:3236, coll. & det. Kare Liimatainen & Tuula Niskanen, 28.VI.2013, sequence from an environmental soil sample only (no fruitbody collected); Nylandia (N/U), Tammisaari, Ramsholmen. Mixed, damp deciduous forest (*Quercus*, *Betula*, *Corylus*, *Acer*, *Fraxinus*). Coll. & det. Kare Liimatainen & Tuula Niskanen, 07.VII.2013, sequence from an environmental soil sample only (no fruitbody collected); Vantaa, Tammisto, Nature Reserve Area. Dryish mixed forest, under *Quercus* and *Corylus*. Coll. & det. Kare Liimatainen & Tuula Niskanen 12-029, 17.IX.2012 (H).

In hemiboreal deciduous forests. Most likely occasional or common but overlooked. Subgenus *Telamonina*. New to Finland.

***Cortinarius tillamookensis* Ammirati, Liimat. & Niskanen**

FINLAND. Regio aboënsis (Ab/V), Salo, Kisko, Marjaniemennummi. *Pinus sylvestris* forest on sandy soil. UCS 6681:3300, coll. & det. Kare Liimatainen & Tuula Niskanen 12-049, 22.IX.2012 (H).

In *Pinus* forests, often on sandy soil. Presumably common but overlooked. Previously many collections most likely included in *C. croceus*. Subgenus *Dermocybe*. New to Finland.

***Cortinarius alboamarescens* Kytöv., Niskanen & Liimat.**

FINLAND. Regio aboënsis (Ab/V), Lohja, Esker of Lohja, outdoor recreation area by the road 36. Dry pine (*Pinus sylvestris*) heath forest on sandy soil with lime dust effect. Coll. Ilkka Kytövuori & Tuula Niskanen 04-867, 19.IX.2004 (H6029887); Vihti, Vihtijärvi. Dryish pine forest with some *Picea* and *Betula*. Coll. Hanna Tuovila 03-227, 12.X.2003 (H); Nylandia (N/U), Helsinki, Herttoniemi, Kivinokka. Mesic to grass-herb *Picea* forest, a shallow depression. Coll. Ilkka Kytövuori 94-061, 17.VIII.1994 (H); Malminkartano. Coll. Jouni Issakainen, 15.VIII.1979 (H); Oulunkylän urheilupuisto. Mesic to grass-herb *Picea* forest. Coll. Ilkka Kytövuori, 22.IX.2000 (H); Inkoo, Kalasatama. Mesic to grass-herb *Picea* forest. Coll. Ilkka Kytövuori, 03.IX.2004 (H); Porvoo, W side of the lake Venjärvi. Mesic to damp, mossy, grass-herb spruce forest (*Picea abies*) with some *Populus tremula*, *Betula* and *Pinus sylvestris*. Coll. Kare Liimatainen & Tuula Niskanen 04-850, 17.IX.2004 (H6031311, holotype); Stensböle, Natura area. *Picea abies* dominated mesic grass-herb forest with *Betula*, old wooded pasture land. Coll. Tea von Bonsdorff, 24.IX.2012 (H); Savonia australis (Sa/ES), Leivonmäki, Selänpohja, Syysniemi. Slightly paludified spruce forest with some hardwood trees and bushes. Coll. Ilkka Kytövuori 93-454, 22.VIII.1993 (H); Tavastia australis (Ta/EH), Lahti, Pesäkallio. Spruce forest. Coll. Tea von Bonsdorff & Ilkka Kytövuori, 30.IX.2002 (H); Valkeakoski, Mälkiäinen, Kariniemi. On mossy ground in rich, mixed forest. Coll. K. Syrjänen, 08.IX.1990 (OULU); Virrat, Pohjaslahti, Monoskylä, Hennilä. Moist spruce forest, swampy depression. Coll. Ilkka Kytövuori 96-1338, 19.X.1996 (H); Karelia ladogensis (Kl/LK), Parikkala, Saari, congregation camp center at the lake, below the church. Dry pine heath forest on fine sand, some *Betula*. Coll. Ilkka Kytövuori 09-1290, 18.IX.2009 (H); Uukuniemi, Tarnala. Mesic conifer forest, on the sawdust track. Coll. Ilkka Kytövuori 06-716, 11.IX.2006 (H); Tavastia borealis (Tb/PH), Jyväskylä, Vesanka, Sivulanmäki NW, Nature Reserve. Old *Picea* forest. Coll. T. Jaakkonen, 31.VIII.2014 (H); Konginkangas, Kivetty. Mesic *Picea* forest. Coll. Hanna Tuovila 02-026, 09.IX.2002 (H).

In coniferous forests, mostly in low-herb depressions of *Picea* forests, more seldom in pure *Pinus* heaths, sometimes on calcareous ground. Often solitary or only a few basidiomata in each location. Fairly rare to occasional. Described in 2015 (Ariyawansa et al. 2015). Section *Vibratiles*.

***Cortinarius ochromarus* Niskanen, Kytöv. & Liimat.**

FINLAND. Regio aboënsis (Ab/V), Karjaa, Mustio, Kohagen. Herb-rich *Picea abies* forest with some *Corylus avellana*, *Quercus robur*, *Betula* and *Populus tremula*, or under *Populus tremula*. Coll. Kare Liimatainen & Tuula Niskanen 08-045, 02.IX.2008 (H60019399); Ny-

landia (N/U), Espoo, Luukkaa outdoor recreation area, N of Hauklampi, Nature Reserve Area. Mesic, partly grass-herb spruce forest (*Picea abies*) with some *Populus tremula*, *Betula* and *Pinus sylvestris*. Coll. Kare Liimatainen & Tuula Niskanen 04-761, 09.IX.2004 (H6030006)

In herb-rich, mossy *Picea* dominated forests on calcareous ground. Rare to occasional. Described in 2015 (Ariyawansa et al. 2015). Section *Vibratiles*.

Cortinarius pastoralis Soop, H. Lindstr., Dima, Niskanen, Liimat. & Kytöv.

FINLAND. Savonia australis (Sa/ES), Kerimäki, Louhi, Ruokojärvi, NE side of the bay Pitkälähti, near the old lime pit. Grass-herb deciduous forest (*Populus tremula*, *Betula*, and *Salix caprea*), on mull soil. Coll. Kare Liimatainen & Tuula Niskanen 06-165, 22.IX.2006 (H6031247); Regio kuusamoënsis (Ks/Ks), Kuusamo, SW of Laajusvaara, Jussinlamminvaara. Herb-rich *Picea abies* forest with some *Pinus*, *Populus tremula*, and *Betula*. Coll. Ilkka Kytövuori & Tuula Niskanen 02-899, 21.IX.2002 (H6033120); Oulanka National Park, NEE of the Biological Station, NNW of Mataraniemi. Heath forest on sandy soil with *Pinus sylvestris*, *Betula*, and *Picea abies*, mossy site. Coll. Jukka Vauras 25056, 28.VIII.2007 (H6009063); Lapponia enontekiensis (Le/EnL), Enontekiö, Kilpisjärvi, W foot of Saana, behind TVL and Retkeilykeskus. Mesic birch heath forest. Coll. Tea von Bonsdorff & Ilkka Kytövuori 98-567, 09.VIII.1998 (H).

Associated with several deciduous trees; found under *Corylus*, mixed forests of *Betula*, *Populus*, and *Salix*, from subalpine birch forest, and isolated from *Tilia cordata* root tips. Presumably occasional. Described in 2016 (Dima et al. 2016). Section *Anomali*.

Cortinarius fulvescentoides Kytöv., Niskanen & Liimat.

FINLAND. Tavastia australis (Ta/EH), Orivesi, Päilahti. Mesic to moist *Picea abies* dominated forest with some *Pinus sylvestris* and hardwood bushes. Coll. Ilkka Kytövuori 95-1550, 26.IX.1995 (H).

In mesic to moist coniferous forests with *Picea*, often in *Sphagnum*. Presumably at least occasional. Described in 2016 (Hyde et al. 2016). Section *Fulvescentes*.

Cortinarius nymphatus Kytöv., Niskanen, Liimat. & Bojantchev

FINLAND. Tavastia australis (Ta/EH), Orivesi, Päilahti. Mesic to moist *Picea abies* forest with some *Pinus sylvestris* and hardwood bushes. Coll. Ilkka Kytövuori 95-1549, 26.IX.1995 (H, holotype); Ostrobothnia kajanen-

sis (Ok/Kn), Suomussalmi, W of Hossa. Dry *Pinus sylvestris* heath forest on sandy soil. Coll. Ilkka Kytövuori, Kare Liimatainen & Tuula Niskanen 02-565, 16.IX.2002 (H6031915).

In dry to mesic coniferous forests (*Pinus*, *Picea*). Described in 2016 (Hyde et al. 2016). Presumably occasional. Section *Fulvescentes*.

Cortinarius pseudobulliardoides Kytöv., Niskanen, Liimat. & Ammirati

FINLAND. Regio kuusamoënsis (Ks/Ks), Kuusamo, Oulanka National Park, forests close to Kiutaköngäs. Dry *Pinus sylvestris* heath forest with some *Picea* and *Betula* on sandy and calcareous soil. Coll. Ilkka Kytövuori, Kare Liimatainen & Tuula Niskanen 02-689, 18.IX.2002 (H).

In coniferous forests (*Abies*, *Picea*, *Pinus*). Presumably rare to occasional. Described in 2016 (Hyde et al. 2016). Section *Fulvescentes*.

Cortinarius tenuifulvescens Kytöv., Niskanen & Liimat.

FINLAND. Ostrobothnia ultima (Obu/PeP), Rovaniemi, Pisavaara nature reserve area. Fairly old submesic blueberry spruce forest (*Picea abies*) with *Betula* and *Pinus sylvestris*, partly more pine dominated, mosses and lichens on ground. Coll. Kare Liimatainen & Tuula Niskanen 04-572, 31.VIII.2004 (H6031278, holotype).

In dry to mesic coniferous forests, in northern Europe often on sandy soil, one collection from spruce-hardwood swamp. Presumably at least occasional. Described in 2016 (Hyde et al. 2016). Section *Fulvescentes*.

Geastrum floriforme Vittad.

FINLAND. Regio aboënsis (Ab/V), Parainen, Korppoo, Jurmo. On a top and near *Lasius*-ants nest in calcareous dry meadow with *Juniper*. UCS 6646950:3197263, coll. Kimmo Syrjänen, Roosa Leimu, Henry Väre, Heidi Kaijainen 23.8.2003, det. Seppo Huhtinen, conf. Mauri Lahti (TUR 161532); Savonia australis (Sa/ES), Savitaipale, Kaulio, Kirkaho. On a top of *Lasius flavus*-ants nest in dry grassland in south facing slope. UCS 6768:3525, coll. & det. Seppo Vuokko, 07.IV.2015, conf. Mauri Lahti (TUR 202736); Ostrobothnia australis (Oa/EP), Vaasa. On soil in garden. UCS 7011:3227, coll. Liisa Packalen, 06.X.2013, det. Pertti Salo (H6043166).

Very rare taxon, classified as Critically Endangered (CR) in Finland. Older collections are from Jomala 1949 (Al/A), Helsinki 1932-33 (N/U) and Äänekoski 1977 (Tb/PH). Growth places in Jomala, Parainen and Savitaipale are in natural habitats, others are considered as secondary. New records of little collected and rare species.

Hygrophorus exiguus E. Larss., E. Campo & M. Carbone

FINLAND. Karelia australis (**Ka/EK**), Virolahti, Ravi-joki. In *Picea*-forest growing among fruiting bodies of *Tricholoma inamoenum*. UCS 3527381:6714888, coll. & det. Tapio Kekki 2639. 12.IX.2016 (H); Miehikkälä, Hauhia, in rich *Picea* dominated mixed forest among fruiting bodies of *T. inamoenum*. UCS 3537862:6732077, coll. & det. Tapio Kekki 2673. 15.IX.2016 (H)

This easily overlooked taxon was described as a new species recently (Larsson et al. 2014). Holotype is collected from Finland, Regio kuusamoënsis (**Ks**), Ampumavaara, 18.VIII.2009 (TUR-A 190791). During a mycology course in SE Finland (year 2016), this taxon was found to be common in *Picea*-forests and always with *T. inamoenum*. New records of little collected species.

Hysterangium crassum (Tul. & Tul.) E. Fischer
FINLAND. Tavastia australis (**Ta/EH**), Tammela, Mustiala. Hypogeous near roots of *Picea abies*. UCS 6749:3324, coll. P.A. Karsten 3692, 1865, 1870, det. Tapio Kekki (H6006815 as *H. coriaceum*); Tampere, Lappi. In *Picea abies* forest with *Betula*, *Sorbus* and *Salix*, on a bare moist soil near a path. UCS 6827:3329, coll. Unto Söderholm 17.VI.1978, det. Tapio Kekki (OULU F041443 as *H. coriaceum*); Tampere, Peltolampi. In *Picea*-dominated mixed forest at a path on soil. UCS 6821:3327, coll. Unto Söderholm 755, 18.VIII.1981, det. Tapio Kekki (H 6006816 as *H. coriaceum*). Tavastia borealis (**Tb/PH**), Äänekoski, Suolahti, Iso-Jurvo, hypogeous, found while making a path in a mixed forest (*Pinus*, *Picea*, *Betula* and *Alnus*). UCS 6945767:34450569, coll. Tuomo Hirvonen, 28.VI.2016, det. Mauri Lahti (TUR)

This and other hypogeous taxa are easily overlooked. *Hysterangium crassum* (syn. *H. separabile*) is connected to coniferous forests and has bigger spores than *H. coriaceum* (Montecchi & Sarasini 2000, Knudsen & Vesterholt 2012). All Finnish collections of genus *Hysterangium* are listed here, so *H. coriaceum* is not found in Finland. Corrections of previous information and new record of little collected species.

Inocybe assimilata (Britzelm.) Sacc.

FINLAND. Regio aboënsis (**Ab/V**), Raseborg, Bromarv, Rilax, Nature Reserve, SSE of the estate. On a track in forest with *Picea abies*, *Corylus avellana*, *Quercus robur* and *Acer platanoides*. UCS 66557:32802, coll. & det. Jukka Vauras 31384F, conf. Ellen Larsson by ITS 2016, 01.X.2015 (TUR-A203297, GB).

This species has been recorded from Finland already earlier (as *I. umbrina*, Schulmann 1960, Mäkinen 1976), but all collections checked have been misidentifications. More common further south in Europe. Mainly with *Quercus*, *Corylus*, *Fagus* and *Picea*. New to Finland.

Inocybe caprimulgi Vauras & E. Larss.

FINLAND. Ostrobothnia ultima (**Obu/PeP**), Rovaniemi, Pahtaja, ca. 200 m SSE of Lapin Metsäkoulu. On a bank of the the main road, dry heath forest with *Pinus sylvestris*, with young *Betula* sprouts on the bank, on fine sand. UCS 73715:34372, coll. Jukka Vauras 5808F, 22.VIII.1991 (TUR-A176158, holotype; GB, H, isotypes).

On dry sandy, often bare soils with *Pinus sylvestris* and *Betula*. In hemiboreal to northern boreal zone. Found in Norway in alpine heath with *Betula nana*. Fairly common (Vauras & Larsson 2016).

Inocybe lacunarum Vauras & E. Larss.

FINLAND. Regio aboënsis (**Ab/V**), Turku, Ruissalo, ca. 100 m N of Honkapiirtti. Deciduous forest with *Quercus robur*, *Corylus avellana*, *Betula pendula*, *Salix caprea*, *Populus tremula* and *Acer platanoides*, moist depression. UCS671190: 323298, coll. Jukka Vauras 12244F, 5.VIII.1997 (TUR-A171771 holotype; GB, H, isotypes).

In deciduous forests mostly in moist depressions, associated with *Betula pendula*, *Populus tremula* and *Quercus robur*, both on acid and calcareous soils. In hemiboreal to southern boreal zone. Known also from Sweden, Stockholm. Fairly uncommon (Vauras & Larsson 2016).

Inocybe substellata Kühner

FINLAND. Lapponia enontekiensis (**Le/EnL**), Enontekiö, Kilpisjärvi, Malla Strict Nature Reserve, Pikku-Malla, NE slope. Low-alpine site, on margin of a dried pond, near *Salix glauca*, *S. lapponum*, *Betula nana* and *B. pubescens* subsp. *czerepanovii*. UCS 76770:32513, coll. Jukka Vauras 2223F, det. Ellen Larsson, 11.VIII.1986 (TUR-A176844, GB).

Rare alpine taxon. On naked soil near *Salix*, at margins of ponds and in alpine heaths. Also in Northern Sweden and Northern Norway (Vauras & Larsson 2016).

Laccaria violaceibasis Contu & Fernandez-Sas.

FINLAND. Karelia australis (**Ka/EK**), Hamina, Reitkali, Uuperinmäki. On sandy soil near young trees (*Betula pendula*, *B. pubescens*, *Alnus incana* and *Pinus sylvestris*). UCS 672333:350401, coll. & det. Paavo Höijer

6016, 13.IX.2016 (H6060627); Ostrobotnia ultima (**Obu/PeP**), Tervola, Pukinseläntie, Halkohuhta. On sandy soil with few years old *Betula pendula* and *Salix* sp. UCS 734784:341642, coll. & det. Paavo Höijer 5357, 05.IX.2012 (H6060638).

This species was described new to science based on the material from Spain (Fernandez-Sasia & Contu 2003). New to Finland.

Laccaria chibinensis Mikhailovskii

FINLAND. Lapponia enontekiensis (**Le/EnL**), Enontekiö, SE part of the fjeld Tarju, between the "road" N of Tšuoibmajavri to Tarjjunjargajavri, upper oroboreal to lower oroarctic zone, mesic heath. Alt. 540-700 m s.m. UCS 7631:3297-9, coll. Tea von Bonsdorff & Ilkka Kytövuori 98-289, 04.VIII.1998, det. Paavo Höijer (H6059275); Enontekiö, Iitto, palsa bog. On moist soil with *Betula pubescens* subsp. *czerepanovii*, *B. nana* and *Eriophorum angustifolium*. Alt. 400 m. UCS 763700:327444, coll. & det. Paavo Höijer 5961, 22.VIII.2016 (H6060637); Enontekiö, Kilpisjärvi, Saana N. In oroarctic heath with *Betula nana* and *Salix herbacea*. Alt. 620 m. UCS 7676:3253, coll. & det. Paavo Höijer 4517, 19.VIII.2007 (H6060626); Lapponia inarensis (**Li/InL**), Utsjoki, Skalluvaara. In mountain birch zone, *Betula pubescens* subsp. *czerepanovii*, *Vaccinium myrtillus*, *V. vitis-idaea*, *V. uliginosum*, *Empetrum nigrum* and *Corallorhiza trifida*. Alt. 280 m. UCS 77489:35059, coll. & det. Paavo Höijer 4772, 20.VIII.2008. (H6060648).

This species was described from the Kola Peninsula (Michailovskij 1974). New to Finland.

Lactarius porninsis Rolland

FINLAND. Savonia australis (**Sa/ES**), Punkaharju. In old *Larix decidua* -plantation. On rich soil. UCS 6858020:3621830, coll. Tea v. Bonsdorff & Jarkko Korhonen, det. Tea v. Bonsdorff 16-88, 28.VIII.2016 (H6049964).

This species is very rare in temperate zone and known before from Denmark and Sweden (Knudsen & Vesterholt 2012). The nearest locality known is in south-west Sweden. Very rare also in boreal zone. New to Finland.

Lactarius serifluus (DC. : Fr.) Fr.

FINLAND. Nylandia (**N/U**), Loviisa, Määrälahti. In *Quercus robur* -dominated herb-rich forest. On mull soil. UCS 6704922:3458886, coll. & det. Tea v. Bonsdorff 16-26, 15.XIII.2016 (H6049965).

This rare species was earlier known only from Regio aboënsis (**Ab/V**). Red-listed as Near threatened (NT) in Finland (Rassi et al. 2010; von Bonsdorff et al. 2010). New record of a little collected species.

Lamelloclavaria petersenii Adamčík & Birkebak
FINLAND. Tavastia australis (**Ta/EH**), Juupajoki, Hyytiälä, by the alley N of the forestry research station. In a (probably unfertilized) parklike lawn on a road verge. UCS 68629:3572, coll. Stefan Jakobsson 4479, 06.IX.2005 (H6049954, paratype), det. Adamčík & Birkebak; the same site and date, Slavomír Adamčík, (SAV F-3493, holotype).

A very rare taxon unknown elsewhere. Monotypic genus (Birkebak et al. 2016).

Lepiota pseudolilacea Huijsman

FINLAND. Tavastia australis (**Ta/EH**), Kangasala. In a town center, on a mossy park lawn. UCS 68208:33443, coll. Lasse Kosonen, 27.IX.1992, det. Tapio Kekki (TUR 111099, as *L. clypeolarioides*); Nokia, Sarpatti, Maatialanharju. On a dry meadow under *Pinus*, *Betula* and *Sorbus*. UCS 6824:3316, coll. Ulla Nummela-Salo & Pertti Salo 5532, 28.VIII.1998, det. Tapio Kekki (H6017998, as *L. clypeolarioides*); Savonia australis (**Sa/ES**), Kerimäki, Louhi. Near an old limestone quarry. UCS 6872:3605, coll. Paavo Höijer 4675, 20.IX.2007, det. Tapio Kekki (H 6007167, as *L. clypeolarioides*); Savonlinna, Pääskylähti. On a dry meadow among *Hieracium pilosella* and *Carlina beibersteinii*. UCS 686254:360297, coll. & det. Tapio Kekki 2697, 16.IX.2016 (TUR); Savonia borealis (**Sb/PS**), Varkaus, Hevonlahti. On a dry meadow under *Betula*. UCS 690425:358248, coll. & det. Tapio Kekki 2698, 17.IX.2016 (TUR); Ostrobotnia ultima (**Obu/PeP**), Keminmaa, Old Church. On a dry calcareous grassland. UCS 730413:338810, coll. & det. Tapio Kekki 820, 29.IX.2012 (H); Kemi, Ajos. On a dry meadow near seashore. UCS 728903:338609, coll. & det. Tapio Kekki 2754, 23.IX.2016 (TUR)

In Finland the name *L. clypeolarioides* Rea has been incorrectly used for this small *Lepiota*-taxon. In deciduous forests and heathlands. Corrections of previous information and new records of little collected species.

Leucopaxillus tricolor (Peck) Kühner

FINLAND. Regio aboënsis (**Ab/VS**), Kemiönsaari, Västanfjärd, Illo quarry area. Calcareous ruderate site with scattered *Salix* and *Betula*. UCS 6663929:3260971, coll. & det. Seppo Huhtinen 16/66, 30.VII.2016 (TUR, <http://mus.utu.fi/TFU.206317>, dupl. in H).

On calcareous soils in herb-rich forests, wooded pastures with *Quercus* or *Fagus* temperate – hemiboreal zone (Knudsen & Vesterholt 2012, Kytövuori et al. 2005). Also more open ruderal areas with other deciduous trees (Kytövuori et al. 2005). The species has a high red-list category in all the Nordic countries. Kemiönsaari locality is the fourth record of this very rare species. Red-

listed as Endangered (EN) in Finland (von Bonsdorff et al. 2010, Rassi et al. 2010). New record of a little collected and rare species.

Lycoperdon mammiforme Pers.

FINLAND. Regio aboënsis (**Ab/V**), Turku, Muhkuri. UCS 6714:3237, coll. Paavo Kallio, 01.IX.1960, det. Mikael Jeppson 2016 (TUR027478). New to Finland.

Marchandiomyces aurantiacus (Lasch)

Diederich & Etayo

FINLAND. Karelia australis (**Ka/EK**), Kotka, city centre, churchyard. On *Physcia* growing on Acer. UCS 670601:349726, coll. Arto Puolasmaa, 09.VIII.2016, det. Seppo Huhtinen & Arto Puolasmaa (TUR, <http://mus.utu.fi/TFU.206102>).

This lichenicolous species was shown to be the anamorph of *Marchandiobasidium aurantiacum* Diederich & Schultheis by Diederich et al. (2003). It has been observed mainly on corticolous *Physcia* species. Both the genus and the species are new to Finland.

Psathyrella pygmaea (Bull. : Fr) Singer

FINLAND. Alandia (Al/A), Lemland, Slätholmen. UCS 668:310. Coll. Otto von Schulmann, 06.IX.1958, det. Mika Toivonen (H6061508); Regio aboënsis (**Ab/V**), Parainen, Houtskari, Jungfruskär. On a pasture among grasses. UCS 668434:317175, coll. & det. Lasse Kosonen 54/11, 06.X.2011 (TUR200318); Nylandia (**N/U**), Raasepori, Tammisaari, Hagen. On rotten stump of *Quercus robur*. UCS 665575:330096, coll. Marjut Järvinen, det. Paavo Höijer, 02.X.2015 (H6055772). Karelia australis (**Ka/EK**), Kotka, Kymnlinna. Deciduous forest of *Acer platanoides*, *Alnus glutinosa* and *Populus tremula*, on decayed hardwood stump, with *Coprinellus disseminatus*. UCS 671085:349409, coll. Tapio Envall, 13.IX.2016, det. Mika Toivonen (TUR206247).

So far all the records are from the southernmost coastal area. New to Finland.

Rectipilus fasciculatus (Pers.) Agerer

FINLAND. Tavastia australis (Ta/EH), Jämsä, Kalmavirta, Hallinmäki, Sammalsuo Nature Reserve. Spruce dominated old-growth forest, on large trunk of *Pinus sylvestris*. UCS 6894337:3401549, coll. Nerea Abrego PH12104, 06.IX.2013, det. Jenna Purhonen & Seppo Huhtinen (JYV).

In the Nordic countries a very rarely collected, lignicolous, cyphelloid species (Knudsen & Vesterholt 2012). Both the genus and the species are new to Finland.

Scleroderma verrucosum (Bull. : Pers.) Pers. ss.

Greville

FINLAND. Regio aboënsis (**Ab/V**), Salo, Kisko. On a lawn near *Quercus robur* at church area. UCS 6686989:3305045, coll. Mauri Lahti 23/16, 27.VII.2016, det. Mikael Jeppson (TUR).

Very rare taxon. A collection of *Scleroderma* was made from exactly the same place by Tea von Bonsdorff, Jarkko Korhonen and Lasse Kosonen in 2015, but because of immature spores it was possible to determinate it. Older collections from Tampere 1861 (**Ta/EH**) and Kerava 2012 (**N/U**) (Lahti 2013). New records of little collected and rare species.

Squamanita contortipes (A.H. Sm. & D.E.

Stuntz) Heinem. & Thoen

FINLAND. Karelia australis (**Ka/EK**), Hamina, Pampyöli. On and with *Galerina pumila* on a mossy lawn in a churchyard. UCS 671748:351378, coll. Tapio Kekki 2637 & Jenna Purhonen, 12.IX.2016, det. Tapio Kekki (H); Tavastia australis (**Ta/EH**), Tampere, Kumpula, on mosses in sandy and rocky *Pinus*-forest near a path, near *Cystoderma amianthinum* and *Phellodon connatus*. UCS 6826220:3337649, coll. Seppo Kytöharju 2/2016, 31.VIII. 2016, det. Lasse Kosonen (H).

Very rare, but possibly overlooked taxon. Earlier one collection from Tampere 1992 (**Ta/EH**). Parasitic on *Galerina* sp. and usually *G. pumila* is co-occurring (Knudsen & Vesterholt 2012). New records of little collected and rare species.

Tulostoma niveum Kers

FINLAND. Regio aboënsis (**Ab/V**), Parainen, Även-sor. On mosses, southern slope of an old limestone quarry. UCS 669995:319893, coll. Ari Karhilahti, 08.IX.2016, det. Mauri Lahti (TUR).

Very rare taxon, classified in Finland as Endangered (EN). Previously known from Parainen, Korppoo 1962 (**Ab/V**) with a photograph in OULU and Kuopio, Vehmersalmi 1988 (**Sb/PS**) with a collection in KUO. New record of little collected and rare species.

Volvariella reidii Heinem.

FINLAND. Tavastia borealis (**Tb/PH**), Äänekoski, Parantala. Among mosses in a young *Picea*-forest. UCS 6950:3423, coll. Rolf Storbacka, 21.VIII.1981, det. Lasse Kosonen (OULU); Karelia borealis (**Kb/PK**), Lieksa, Koli National Park. Herb-rich forest dominated by *Alnus incana*. UCS 700306:364094, coll. & det. Katri Kokkonen 621/12, 18.IX.2012 (TUR201395); Ostrobothnia ultima (**Obu/PeP**), Keminmaa, New Church. On a calcare-

ous grassland. UCS 73043:33879, coll. & det. Tapio Kekki 2167, 27.IX.2015, conf. Lasse Kosonen (H); Rovaniemi, Kiiruna. On a sandy soil in a garden with alpine plants like *Dryas octopetala*. UCS 737876:344484, coll. & det. Tapio Kekki 2560, 06.IX.2016 (H)

In Scandinavia known only from Finland, other records are from Central Europe. First Finnish collection from Äänekoski was thought to be missing (Kytövuori et al. 2005), but it was found and is now situated in OULU. All known Finnish collections are listed here. New records of little collected and very rare species.

Ascomycota

Balsamia platyspora Berk. & Broome

FINLAND. Regio aboensis (Ab/VS), Turku, city area, Kupittaa public park. Lawn under *Tilia* sp., at depth of 5 cm. UCS 6712995:3240970, coll. Kalle Ruokolainen & Lagotto Romagnolo "Tellu", 30.VIII.2016, det. Seppo Huhtinen (TUR, <http://mus.utu.fi/TFU.206101>, dupl. in S).

In the Nordic countries a very rarely collected, hypogeous species (Hansen & Knudsen 2000). Both the genus and the species are new to Finland.

Barbatosphaeria arboricola Reblova

FINLAND. Tavastia australis (Ta/EH), Lempäälä, Kulju, Asemakylä. On a decorticated wood of *Salix*, soc *Peniophorella praetermissa*. UCS 68129: 33260, coll. & det. Unto Söderholm 4982, 09.VIII. 2016 (TUR, <http://mus.utu.fi/TFU.205487>).

The species was described 2015 and is known from Czech Republic and Sweden (Reblova et al. 2015). New to Finland.

Calycellina betulina (Velen.) Huhtinen & Purhonen **comb. nov.**

Basionym: *Belonium betulinum* Velen., Monogr. Discom. Bohem.: 178. 1934. – Holotype: [Czech Republic] Bohemia centralis, Mnichovice, *Betula alba*. J. Velenovsky, IX.1933 (PRM 780270).

FINLAND. Tavastia australis (Ta/EH), Muurame, Isolautti, Kuusimäki Nature Reserve. Spruce dominated old-growth forest, on the bark of a fallen, large trunk of *Betula* sp. UCS 6902146:3422042, coll. & det. Jenna Purhonen JP6461, 25.IX.2013 (JYV), on a dead *Phellinus* sp. fruitbody, on a large trunk of *Populus tremulae*. UCS 6902312: 3422218, coll. Panu Halme PH11046, 30.VIII.2013, det. Jenna Purhonen (JYV); Tavastia borealis (Tb/PH). Saarijärvi, Pyhä-Häkki National Park. Spruce

dominated old-growth forest, on the bark of a fallen, large trunks of *Betula* sp. UCS 6971080:3421844, coll. Jenna Purhonen JP6316 & Nerea Abrego, 19.IX.2013, det. Jenna Purhonen (JYV); Äänekoski, Muroaho Nature Reserve. Spruce dominated old-growth forest, on the bark of a fallen, large trunk of *Betula* sp. UCS 6972872:3431928, coll. Jenna Purhonen JP6788 & Kaisa Mustonen, 24.IX.2013, det. Jenna Purhonen (JYV); Savonia australis (Sa/ES), Joutsa, Leivonmäki National Park, Syysjärvi. Spruce dominated old-growth forest, on the bark of a fallen, large trunk of *Betula* sp. UCS 6871638: 3448712, coll. Jenna Purhonen JP5516 & Nerea Abrego, 06.IX.2013, det. Seppo Huhtinen (TUR, <http://mus.utu.fi/TFU.205331>).

A study of the holotype revealed that Finnish material, as well as that cited under *C. "chalarae"* by Baral et al. (2005), are conspecific. The species is different from *C. ochracea* (Grelet & Croz.) Dennis, another species characterized by old ascospores producing conidia (Baral, pers. comm.). The main differences of the present species to *C. ochracea* are 1) the light, not yellowish apothecial colours 2) the shape of conidia arising from overmature spores, of *Chalara*-type, i.e. rectangular (not roundish as in *C. ochracea*). Both species differ from *C. chalarae* Svrček in their three-septate spores. New to Finland.

Geoglossum elongatum Starbäck ex Nannf.

FINLAND. Ostrobothnia ultima (Obu/PeP), Rovaniemi, Kiiruna. On a sandy area in an alpine garden. UCS 737875: 344484, coll. & det. Tapio Kekki 1864, 10.VIII.2015, conf. Viktor Kucera (SAV).

This taxon resembles *Geoglossum fallax* which is common or occasional in Central Europe and Southern parts Scandinavia. New to Finland.

Sarcosphaera coronaria (Jacq.) J. Schröt.

FINLAND. Regio aboensis (Ab/V), Pargas, Stogård, Malmnäs, NNW of Furuvik, near the limestone processing plants. Forest with mainly *Pinus sylvestris*, on middle part of fairly steep slope, by a path on calcareous, sandy soil. UCS 66960:32403, coll. & det. Jukka Vauras 30901F, 05.VI.2015 (TUR-A203430).

The first record from Southern Finland. New record of little collected and very rare species.

Acknowledgements. The work on *Cortinari* was supported by the Societas Pro Fauna et Flora Fennica, the Maj and Tor Nessling Foundation, the Ministry of Environment, Finland (YM49/5512/2015), and the Oskar Öflunds Stiftelse.

References

- Ariyawansa, H.A., Hyde, K.D., Jayasiri, S.C. et al. 2015: Fungal diversity notes 111–252 – taxonomic and phylogenetic contributions to fungal taxa. — *Fungal Diversity* 75(1): 27–274. doi: 10.1007/s13225-015-0346-5
- Baral, H.-O. et al. 2005: Over 10000 images of fungi and plants (microscopical drawings, water colour plates, photomacro- & micrographs), with material on vital taxonomy and xerotolerance. — DVD: In vivo veritas. 3rd edition.
- Birkebak, J. M., Adamčík, S., Looney, B. P. & Matheny, P. B. 2016: Multilocus phylogenetic reconstruction of the Clavariaceae (Agaricales) reveals polyphyly of agaricoid members. — *Mycologia* 108(5): 860–868.
- von Bonsdorff, T., Haikonen V., Huhtinen S., Kaukonen M., Kirsi M., Kosonen L., Kytövuori I., Ohenoja E., Paalamo P., Salo P. & Vauras J. 2010: Agaricoid & Boletoid fungi. — In: Rassi P., Hyvärinen E., Juslén A. & Mannerkoski I. (eds.), *The 2010 Red List of Finnish Species*. Ympäristöministeriö & Suomen ympäristökeskus, Helsinki, 233–248.
- Diederich, P., Schultheis, B. & Blackwell, M. 2003: *Marchandiobasidium aurantiacum* gen. sp. nov., the teleomorph of *Marchandiomyces aurantiacus* (Basidiomycota, Ceratobasidiales) — *Mycol. Res.* 107: 523–527.
- Dima, B., Lindström, H., Liimatainen, K., Olson, Å., Soop, K., Kytövuori, I., Dahlberg, A., Niskanen, T. 2016: Typification of Friesian names in *Cortinarius* sections *Anomali*, *Spilomei*, and *Bolares*, and description of two new species from northern Europe. — *Mycol. Progress* 15: 903. doi: 10.1007/s11557-016-1217-5
- Fernandez-Sasia, R. & Contu, M. 2003: Una nuova specie di *Laccaria* dalla Spagna. — *Rivista di Micologia* 1: 47–52.
- Hansen, L. & Knudsen, H. 2000: *Nordic Macromycetes 1. Ascomycetes*. — 309 p. Nordsvamp, Copenhagen.
- Hyde, K. D., Hongsanan, S., Jeewon, R. et al. 2016: Fungal diversity notes 367–490: taxonomic and phylogenetic contributions to fungal taxa. — *Fungal Diversity* 80(1). doi:10.1007/s13225-016-0373-x
- Knudsen, H. & Vesterholt, J. (eds.) 2012: *Funga Nordica*. – Agaricoid, boletoid, clavarioid, cyphelloid and gastroid genera. — 1083 p. Nordsvamp, Copenhagen.
- Kytövuori, I., Nummela-Salo, U., Ohenoja, E., Salo, P. & Vauras, J. 2005: Helttasientien ja tattien ekologiataulukko. — *Suomen Ympäristö* 769: 225–429.
- Lahti, M. 2013: Juurtomukulakuukunen, *Scleroderma verrucosum*, löytyi Suomesta, Keravalta! — *Sienilehti* 65(4): 112–114.
- Larsson, E., Campo, E. & Carbone, M. 2014: *Hygrophorus exiguus*, a new species in subgenus *Colorati* section *Olivaceoumbrini*, subsection *Tephroleuci*. — *Karstenia* 54: 41–48.
- Michailovskij, L.V. 1974: *Laccaria chibinensis* L. Michail., sp. nov. from the Kola Peninsula. — *Mikologija i fitopatologija* 8(6): 523–524.
- Montecchi, A. & Sarasini, M. 2000: *Funghi ipogei d'Europa* — 714 p. Associazione micologica Bresadola.
- Mäkinen, Y. 1976: *Risakkaat – Inocybe*. — In: Ulvinen, T. (ed.) *Suursieniopas*: 158–167. Suomen Sieniseura. Helsinki.
- Rassi, P., Hyvärinen, E., Juslén, A., & Mannerkoski, I. (eds.) 2010: *Suomen lajien uhanalaisuus*, Punainen kirja 2010. — 685 p. Ympäristöministeriö & Suomen ympäristökeskus, Helsinki.
- Reblova, M. Reblova K. & Stepanek, V. 2015: Molecular systematics in *Barbatosphaeria* (Sordariomycetes). Multigene phylogeny and secondary ITS structure. — *Persoonia* 35: 21–38
- von Schulmann, O. 1960: Zur Kenntnis der Basidiomyceten Finnlands. — *Karstenia* 5: 5–99.
- Vauras, J. & Larsson, E. 2016: *Inocybe caprimulgi* and *I. lacunarum*, two new nodulose-spored species from Fennoscandia. — *Karstenia* 55: 1–18.
- Örstadius, L., Ryberg, M. & Larsson, E. 2015: Molecular phylogenetics and taxonomy in *Psathyrellaceae* (Agaricales) with focus on psathyrelloid species: introduction of three new genera and 18 new species. — *Mycol. Progress* 14: 25.