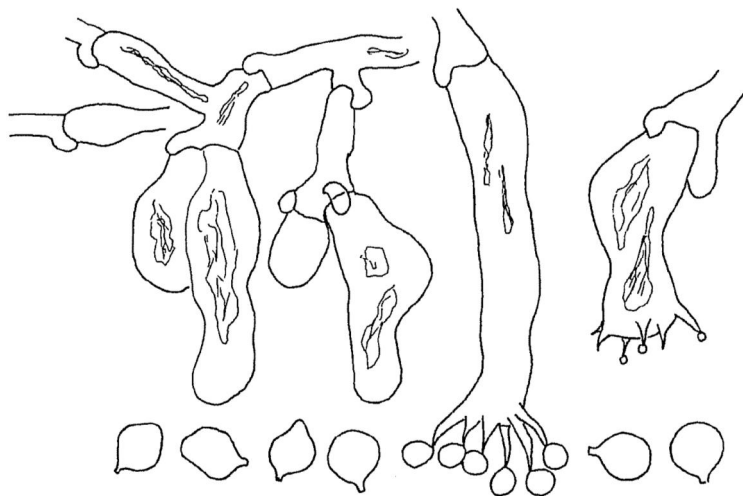

kevo notes

14

2013

HEIKKI KOTIRANTA & ANTON SHIRYAEV

Notes on Aphylophoroid fungi (Basidiomycota) in Kevo,
collected in 2009



ISBN 978-951-29-5386-8 (print)

ISBN 978-951-29-5387-5 (PDF)

ISSN 0356-861X

Turku 2013

Editor Otso Suominen

otso.suominen@utu.fi

Cover: *Sistotrema* sp. (Kotiranta 23126). Basidioles, basidia and spores.
(drawn by Heikki Kotiranta)

Notes on Aphylophoroid fungi (Basidiomycota) in Kevo, collected in 2009

Heikki Kotiranta

Finnish Environment Institute, Biodiversity Unit, P.O. Box 140,
FI-00251 HELSINKI, Finland,
email: heikki.kotiranta@ymparisto.fi

Anton Shiryayev

Institute of Plant and Animal Ecology RAS, 8 March str. 202,
620144, EKATERINBURG, Russia,
email: anton.g.shiryayev@gmail.com

KOTIRANTA, HEIKKI & SHIRYAEV, ANTON. Notes on Aphylophoroid fungi (Basidiomycota) in Kevo, collected in 2009. – Kevo Notes 14: 1 – 22, 2013.

Abstract

The authors collected Aphylophoroid fungi in the Kevo Strict Nature Reserve in September 2009. Altogether 320 specimens were collected or noted only. Of these one is new to Finland, *Typhula chamaemori* L. Holm & K. Holm. Very seldom collected are *Kneiffiella efibulata* (J. Erikss. & Hjortstam) Jülich & Stalpers, *Litschauerella clematitidis* (Bourdot & Galzin) J. Erikss. & Ryvardeen, *Membranomyces spurius* (Bourdot) Jülich and *Sistotrema efibulatum* (J. Erikss.) Hjortstam. The total number of species detected was 131 and 72 are new to the Fjeld Lapland.

KEY WORDS: Basidiomycota, Aphylophoroid fungi, distribution, Fjeld Lapland, subarctic

Introduction

Kevo area, in the northernmost Finland (69°45'N, 27°00'E, Grid 27°E 7740-1: 3500), is in the biogeographic province of Inarin Lappi (InL), in the commune of Utsjoki and is in the Northern boreal zone, Fjeld Lapland, subzone 4d. For the forest vegetation map and the zones plus subzones the reader is referred to Rassi *et al.* (2000, p. 27) or Kotiranta *et al.* (2009, p. 7). The Finnish national uniform grid system (27°E) and biogeographical provinces are according to Heikinheimo and Raatikainen (1981).

The funga of this area was published already by Kallio & Kankainen (1964, 1966) and Ohenoja (1996). Later Kotiranta *et al.* (2009) made some addendums, and listed 158 Aphyllorphoroid species to occur in Fjeld Lapland subzone (4d).

The authors collected Aphyllorphoroid fungi in Kevo Strict Nature Reserve close to the Kevo Research station during three days in September 2009 (19, 20 and 23). One very short stop was made 30 km south of the Utsjoki village, close to Leppälä (Grid 27°E 773: 350). The senior author mostly collected corticioids from common junipers (*Juniperus communis*), while the co-author focused on Clavarioid species. Our purpose was to enlarge the knowledge of the distribution of the above mentioned fungal groups. Common species, like *Fomes fomentarius* or *Piptoporus betulinus* were not collected, but some notes on their frequency were made. Little attention was paid to lying trunks of pines (*Pinus sylvestris*), birches (*Betula tortuosa* ssp. *czerepanovii*) or willows (*Salix* spp.).

The material of Clavarioid specimens is preserved in SVER (Ekaterinburg) the others in H, or in the reference herbarium of Heikki Kotiranta (H.K.). The nomenclature follows Kotiranta *et al.* (2009) where also the authors of the species can be found and are not repeated here. The genus *Hyphodontia* s. lato is according to

Hjortstam *et* Ryvarden (2009). For the term kelo, the reader is referred to Niemelä *et al.* (2002).

For the decay measurement five class scale was used, where 1 is very hard and 5 very decayed. Since many of the, especially, *Juniperus* branches and twigs are small, the thumb nail was used for the measurement, which was made in the immediate vicinity of the fruit body.

Results

*The species occurs both in treeless areas and forests

**The species occurs in forests only

Species new to the subzone 4d is shown in **bold face** and the specimens from Leppälä with L.

List of species

Clavarioid fungi

**Clavaria argillacea*

On soil.

**Clavaria falcata*

On soil.

***Clavaria fragilis*

On litter, soil, between grasses and herbs.

***Clavaria purpurea*

On soil and litter in meadow.

**Clavaria sphagnicola*

On mosses.

*****Clavicornona pyxidata***

syn. *Artomyces pyxidatus*

Decaying *Pinus* timber. This species grows mostly on *Populus* or *Betula* in oceanic and maritime climate, very seldom on coniferous trees.

****Clavicornona taxophila***

On litter of grasses and herbs under *Salix*, *Betula*.

****Clavulina cinerea***

On soil.

****Clavulina coralloides***

On soil and mosses.

****Clavulinopsis corniculata***

On soil.

****Clavulinopsis helvola***

On mosses.

*****Clavulinopsis laeticolor***

Meadow, on soil.

*****Clavulinopsis luteoalba***

On soil and litter.

*****Lentaria byssiseda***

On fallen *Pinus* branches.

*****Macrotiphula fistulosa***

On buried twigs of *Betula*.

****Macrotiphula juncea***

On fallen leaves.

*****Mucronella bresadolae***
On dead fallen trunks of *Betula*.

*****Mucronella calva***
On fallen *Betula* trunk.

****Multiclavula corynoides***
On soil (in symbiosis with algae).

****Multiclavula vernalis***
On soil (in symbiosis with algae).

****Pterula gracilis***
On dead leaves of grasses and *Juncus*. Three earlier reports from Finland; A: Jomala ,V: Parainen (Shiryayev 2008), and PK: Outokumpu (JOE). This is not as rare as the few collections indicate, but overlooked.

****Ramaria abietina***
On soil with mosses and litter.

*****Ramaria eumorpha***
On soil and litter under *Pinus*.

*****Ramaria suecica***
On soil and litter under *Pinus*.

*****Ramaria testaceoflava***
On soil under *Pinus*; rare in Kevo area.

****Ramariopsis subarctica***
Mire, on turf.

*****Ramariopsis tenuiramosa***
On soil in meadow.

*****Typhula anceps***

On fallen leaves of *Salix*. According to Kotiranta *et al.* (2009) *T. micans* is a synonym of *T. anceps*, but Shiryayev *et al.* (2010) are in the opinion that they are separate taxa. The problem should be solved by DNA studies.

****Typhula capitata***

On dead stems and leaves of *Deschampsia*.

****Typhula caricina***

On dead leaves of *Carex*. Three earlier collections from Finland, including the holotype from EH: Tammela, Mustiala (1869, H).

****Typhula chamaemori***

On dead leaves of *Rubus chamaemorus*. New to Finland. Some authors include this into *T. lutescens*, but in our opinion they are separate taxa, because of different microscopy and especially ecology.

****Typhula crassipes***

On dead leaves of *Betula*.

****Typhula culmigena***

On dead grasses, herbs and ferns.

****Typhula erythropus***

On dead leaves of *Betula*.

****Typhula graminum***

On dead leaves of grasses. Third Finnish collection; the two earlier finds are from EH: Luhanka (2007, SVER) and EH: Tammela (1867, H). This is not as rare as the published articles show, but one of the most common *Typhula* species.

*****Typhula hyalina***

On dead leaves and stems of grasses and *Juncus*. Second Finnish published note. The previous one was collected by P.A. Karsten, 1869 from EH: Tammela, Mustiala (Kotiranta *et al.* 2009). This is not as rare as the published articles show, but one of the most common species on bogs and lake- or river shores.

****Typhula incarnata***

On dead and living grasses like *Deschampsia* etc.

****Typhula lutescens***

On dead leaves of *Betula*; the most common *Typhula* species in Kevo.

*****Typhula micans***

On herbs and dead leaves of *Salix*.

****Typhula phacorrhiza***

On dead grasses.

****Typhula sclerotioides***

On different herbs (*Angelica* etc.).

****Typhula setipes***

On dead leaves of *Betula*.

****Typhula spathulata***

On dead *Salix* twigs. Fourth published Finnish collection. The three earlier ones are from A: Lemland, Järsö, V: Kaarina, Kakskerta (Shiryayev 2008), and OP: Oulu (1965, OULU).

****Typhula uncialis***

On dead stems of *Epilobium angustifolium*.

**Typhula variabilis*

On different herbs (*Angelica*, etc.).

Clavarioid fungi in all:

45 species

26 taxa new for the subzone 4d

134 specimens

Other Aphylophoroid fungi

Amphinema byssoides

On living corticated *Juniperus*, diam. 4 cm; also *Botryobasidium candicans*.

Amylocorticiellum cremeoisabellinum

syn. *Hypochniciellum cremeoisabellinum*

On corticated living *Juniperus*, diam. 0.7 cm and corticated *Betula nana* branch, diam. 0.7 cm, decay 4.

Amylocorticium cf. *cebennense*

On decorticated *Pinus*, diam. 14 cm, decay 3; also *Phanerochaete sanguinea*. The spores of this specimen (*Kotiranta 23142*, H.K.) are amyloid, but much shorter than normally.

Antrodia albobrunnea

On decorticated *Pinus-keho* tree, decay 3.

Antrodia sinuosa

On decorticated *Pinus*, diam. 21 cm, decay 3; also *Phlebiella sulphurea*.

Antrodiella leucoxantha

On corticated *Betula*, diam. 3.5 cm, decay 2; also *Radulomyces confluens*. The identity of this specimen (Kotiranta 22999, H) was confirmed by Otto Miettinen (Helsinki) by DNA sequence.

Aphanobasidium pseudotsugae

On decorticated *Pinus* branch, diam. 7 cm, decay 4; also *Coniophora olivacea*, L.

Athelia decipiens

On decorticated *Pinus* log, diam. 14 cm, decay 2; also *Peniophorella praetermissa*, on partly corticated *Pinus*-kelo, diam. 4.5 cm, decay 1.

Athelia* cf. *fibulata

On corticated *Juniperus*, diam. 2 cm, decay 2. Spores are a bit small for *A. fibulata*, (5.4–)6–6.6 x (2.8–)3.1–3.4 µm, but too large for *A. bombacina*, basidia 13–24 x 5–6 µm.

Athelopsis subinconspicua

On corticated *Betula*, diam. 14 cm, decay 4.

Basidioidendron caesiocinereum

On decorticated *Juniperus*, diam. 3 cm, decay 3; also *Vesiculomyces citrinus*.

Boletopsis grisea

On sandy soil.

Botryobasidium candicans

On corticated *Pinus*, diam. 13 cm, decay 3; also *Peniophorella praetermissa*, *Kneiffiella subalutacea*, *Hyphoderma definitum*, *Trechispora laevis*, on decorticated *Pinus* branch, diam. 1.5 cm, decay 1, on corticated *Pinus* log, diam. 16 cm, decay 1; also *Peniophorella praetermissa*, *Stereum sanguinolentum*, on living

corticated *Juniperus*, diam. 4 cm; also *Amphinema byssoides*, on corticated *Pinus*, diam. 5 cm, decay 2; also *Leptosporomyces galzinii*, *Leucogyrophana romellii*. The identity of these specimens is somewhat doubtful since none of the fruit bodies had an anamorphic state.

Botryobasidium pruinautum

On corticated *Juniperus*, diam. 2 cm, decay 2, on corticated *Salix*, diam. 1.5 cm, decay 2, on corticated *Salix* branch, diam. 2 cm, decay 1.

Botryobasidium subcoronatum

On decorticated *Pinus*, diam. 4 cm, decay 2; also *Phlebiella sulphurea*, on partly decorticated *Pinus*, diam. 9 cm, decay 1; also *Phanerochaete sanguinea*, *Phlebiella sulphurea*, on corticated *Pinus*, diam. 6 cm, decay 3, on corticated *Pinus*, diam. 6 cm, decay 2; also *Peniophorella praetermissa*, on decorticated *Pinus* log, diam. 15 cm, decay 4; also *Peniophorella praetermissa*, *Junghuhnia luteoalba*.

Botryobasidium vagum

On decorticated *Pinus* branch, decay 3, L.

Ceraceomyces eludens

On decorticated *Pinus* branch, decay 4, L.

Cerrena unicolor

On dead erect *Betula*, diam. 4 cm, decay 2.

Chaetoderma luna

On decorticated *Pinus*-kelo branch, diam. 5 cm, decay 1, L, on decorticated *Pinus*-kelo table, diam. 50 cm, decay 2.

Coltricia perennis

On sandy soil x 2.

Coniophora olivacea

On decorticated *Pinus* branch, diam. 7 cm, decay 4; also *Aphanobasidium pseudotsugae*, L.

Cristinia helvetica

On corticated *Juniperus*, diam. 2 cm, decay 2; also *Piloderma byssinum*.

Cylindrobasidium evolvens

On corticated *Betula*, diam. 2.5 cm, decay 1; also *Leptosporomyces fusoides*.

Cytidia salicina

On corticated *Salix*, diam. 2 cm, decay 2; also *Hyphoderma setigerum*, plus four specimens (sight) on *Salix*, on corticated erect *Salix*, diam. 4.5 cm, decay 2; also *Hypochnicium bombycinum*.

Daedaleopsis septentrionalis

On corticated *Betula*, diam. 3 cm, decay 3, on corticated *Betula*, diam. 6 cm, decay 2; also *Sistotrema brinkmannii* on dead fruit body, dead fruit body on corticated *Betula*, diam. 6 cm, decay 3, on corticated *Betula* stump, diam. 10 cm, decay 4.

Fibricium rude

On corticated *Juniperus*, diam. 1–3 cm, decay 2, on decorticated *Juniperus* branch, diam. 0.8 cm, decay 1, on corticated *Juniperus*, diam. 1.5 cm, decay 3; also *Sistotrema efibulatum*, on decorticated *Juniperus*, diam. 2 cm, decay 2.

Fomes fomentarius

On dead *Betula*, 7 specimens (sight).

Gloeocystidiellum porosum s.str.

On corticated *Juniperus*, diam. 2 cm, decay 2, on corticated *Salix*, diam. 3 cm, decay 2; also *Kneiffiella efibulata*.

Gloeoporus dichrous

On corticated *Betula*, diam. 7 cm, decay 3; also dead fruit body of *Inonotus obliquus*.

Hapalopilus rutilans

On living *Betula*, diam. 6 cm.

Hymenochaete cinnamomea

On corticated *Juniperus* branch, diam. 1 cm, decay 2, on corticated *Juniperus*, diam. 2 cm, decay 1, on corticated *Juniperus*, diam. 2.5 cm, decay 2, on corticated *Juniperus*, diam. 3 cm, decay 3; also *Xylodon asperus*, on corticated *Juniperus*, diam. 1 cm, decay 1.

Hymenochaete fuliginosa

On decorticated *Pinus*, diam. 6 cm, decay 2; also *Leptosporomyces galzinii*, *Tubulicrinis glebulosus*.

Hymenochaete tabacina

On corticated *Salix* branch, diam. 1.1 cm, decay 3, plus 2 (sight).

Hyphoderma argillaceum

On decorticated *Juniperus*, diam. 1 cm, decay 1, on living corticated *Juniperus*, diam. 4 cm; also *Sistotrema* sp., on corticated *Juniperus*, diam. 4.5 cm, decay 3.

Hyphoderma definitum

On decorticated *Pinus*, diam. 13 cm, decay 4; also *Peniophorella praetermissa*, *Kneiffiella subalutacea*, *Botryobasidium candicans*, *Trechispora laevis*.

Hyphoderma setigerum

On corticated *Betula*, diam. 15 cm, decay 1; also *Stereum hirsutum*, on corticated *Betula* branch, diam. 1.5 cm, decay 2.

Hyphoderma sibiricum

On living corticated *Juniperus*, diam. 1.5 cm, on decorticated *Juniperus*, diam. 1.2 cm, decay 1.

Hypochnicium albostramineum

On corticated *Betula*, diam. 8 cm, decay 4.

Hypochnicium bombycinum

On corticated *Salix*, diam. 6 cm, decay 2, on corticated erect *Salix*, diam. 4.5 cm, decay 2; also *Cytidia salicina*.

Inonotus obliquus

Dead fruit body on corticated *Betula*, diam. 7 cm, decay 3; also *Gloeoporus dichrous*.

Junghuhnia luteoalba

syn. *Steccherinum luteoalbum*

On decorticated *Pinus*, decay 2, on decorticated *Pinus* log, diam. 15 cm, decay 4; also *Botryobasidium subcoronatum*, *Peniophorella praetermissa*.

Kneiffiella efibulata

syn. *Hyphodontia efibulata*

On corticated *Salix*, diam. 3 cm, decay 2 (*Kotiranta* 23202, H, H.K.); also *Gloeocystidiellum*. Second Finnish collection (*Kotiranta* & *Saarenoksa* 1993).

Kneiffiella subalutacea

syn. *Hyphodontia subalutacea*

On decorticated *Pinus*, diam. 13 cm, decay 4; also *Peniophorella praetermissa*, *Botryobasidium candicans*, *Hyphoderma definitum*, *Trechispora laevis*.

Leptosporomyces fusoides

On corticated *Betula* twigs, diam. 0.3 cm, decay 1; also *Cylindrobasidium evolvens*, on decaying leaves of *Betula* and *Vaccinium vitis-idaea*.

Leptosporomyces galzinii

On decorticated *Pinus* branch, diam. 2 cm, decay 1, on decorticated *Pinus*, diam. 6 cm, decay 2; also *Tubulicrinis glebulosus*, *Hymenochaete fuliginosa*, on living corticated *Juniperus*, diam. 1 cm, on corticated *Pinus*, diam. 5 cm, decay 2; also *Botryobasidium candicans*, *Leucogyrophana romellii*, on corticated *Pinus* branch, diam. 4.5 cm, decay 1.

Leucogyrophana romellii

On corticated *Pinus*, diam. 5 cm, decay 2; also *Leptosporomyces galzinii*, *Botryobasidium candicans*, on decorticated *Pinus*, diam. 3.5 cm, decay 4; also *Phanerochaete sanguinea*.

Litschauerella clematitidis

On decorticated *Juniperus*, diam. 1.5 cm, decay 4. The spores of this specimen (*Kotiranta 23155*, H) are almost globose, 5.1–6 x 5.1–5.5 µm, with very scanty ornamentation, basidia pleural, 17–21 x 6–6.5 µm, and cystidia “normal”. Third Finnish collection; the other two ones derive from southernmost Finland (*Kotiranta & Saarenoksa 1990*, *Kotiranta et al. 2009*).

Megalocystidium luridum

On corticated *Salix*, diam. 0.7 cm and 1.1 cm, decay 1.

Membranomyces spurius

On corticated *Juniperus*, diam. 1 cm, decay 2 (*Kotiranta 23160*, H.K.), on corticated *Juniperus*, diam. 1 cm, decay 1 (*Kotiranta 23163*, H.K.). Reported once from southern Finland (*Kotiranta & Saarenoksa 1993*).

Oligoporus sericeomollis

On decorticated *Pinus* branch, decay 3, L.

Peniophora pini

On corticated *Pinus* branch, diam. 3 cm, decay 1, at 1.7 m height.

Peniophorella praetermissa

On corticated *Pinus*, diam. 13 cm, decay 3; also *Botryobasidium candicans*, *Kneiffiella subalutacea*, *Hyphoderma definitum*, *Trechispora laevis*, on decorticated *Pinus*, diam. 6 cm, decay 2; also *Botryobasidium subcoronatum*, on decorticated *Pinus* log, diam. 16 cm, decay 1; also *Stereum sanguinolentum*, *Botryobasidium candicans*, on decorticated *Pinus* log, diam. 14 cm, decay 2; also *Athelia decipiens*, on decorticated *Pinus* branch, diam. 3 cm, decay 3 and diam. 2 cm, decay 1, on decorticated *Pinus* log, diam. 15 cm, decay 4; also *Botryobasidium subcoronatum*, *Junghuhnia luteoalba*.

Phanerochaete laevis

On coniferous board, diam. 9 cm, decay 2; also *Tubulicrinis borealis*.

Phanerochaete sanguinea

On partly corticated *Pinus*, diam. 9 cm, decay 1; also *Botryobasidium subcoronatum*, *Phlebiella sulphurea*, on decorticated *Pinus*, diam. 3.5 cm, decay 4; also *Leucogyrophana romellii*, on decorticated *Pinus*, diam. 14 cm, decay 3; also *Amylocorticium cf. cebennense*.

Phellinus cinereus

On dead *Betula*, 6 trunks (sight).

Phlebia albida

On corticated *Betula* branch, diam. 1.3 cm, decay 3.

Phlebia tremellosa

On corticated *Betula* branch, L.

Phlebiella sulphurea

On decorticated *Pinus*, diam. 4 cm, decay 2; also *Botryobasidium subcoronatum*, on decorticated *Pinus*, diam. 9 cm, decay 1; also *Phanerochaete sanguinea*, *Botryobasidium subcoronatum*, on decorticated *Pinus*, diam. 21 cm, decay 3; also *Antrodia sinuosa*.

Piloderma byssinum

On corticated *Juniperus*, diam. 2 cm, decay 2; also *Cristinia helvetica*, on corticated *Juniperus*, diam. 1 cm, decay 1.

Piptoporus betulinus

On dead *Betula*, 4 trunks (sight).

Postia cf. *parva*

On decorticated *Pinus*-kelo tree, decay 1.

Pseudomerulius aureus

On decorticated *Pinus*, decay 3.

Radulomyces confluens

On corticated *Betula*, diam. 3.5 cm, decay 2; also *Antrodiella leucoxantha*, on decorticated *Betula*, diam. 4.5 cm, decay 3, on corticated *Betula* branch, diam. 3.5 cm, decay 3.

Resinicium bicolor

On corticated *Juniperus*, diam. 2.5 cm, decay 1, on corticated *Juniperus*, diam. 2 cm, decay 2, on corticated *Juniperus*, diam. 2 cm, decay 1, on corticated *Juniperus*, diam. 1.5 cm, decay 1, on corticated *Juniperus*, diam. 3 cm, decay 2.

Sebacina dimitica

On corticated *Juniperus*, diam. 1 cm, decay 1. Reported earlier from Finland from A: Finström, Mangelbo (Kotiranta *et al.* 2009).

Sistotrema brinkmannii

On dead *Daedaleopsis septentrionalis*/corticated *Betula*, diam. 6 cm, decay 2.

Sistotrema efibulatum

On corticated *Juniperus* twig, diam. 0.8 cm, decay 1; also *Fibricium rude*. Reported earlier from Finland from A: Finström, Norrböle (Kotiranta *et al.* 2009).

Sistotrema intermedium

On dead erect corticated *Salix*, diam. 2.5 cm, decay 1; also *Cytidia salicina*. Three earlier collections from Finland, one from Kevo. All on *Salix* (Kotiranta *et al.* 2009).

Sistotrema sp.

On living corticated *Juniperus*, diam. 4 cm; also *Hyphoderma argillaceum* (Kotiranta 23126, H.K.), on corticated *Juniperus*, diam. 3 cm, decay 2 (Kotiranta 23176, H.K.). This is most probably an undescribed species.

Fruit body relatively thick, yellowish. Hyphae with clamps, cystidia none, basidia urniform with oily contents, 28–40 x 6–7.5 μm , with six, seldom two, sterigmata, spores more or less pyriform, 5.7–6.5 x 4.6–5 μm , reminiscent those of *S. citrifforme* (M.P. Christ.) K.H. Larss. & Hjortst. (syn. *Sistotrema subangulisporum* K.H. Larss. &

Hjortst.; see Eriksson *et al.* 1984, p. 1365). *S. citriforme* is thin, simple septate, and has smaller basidia.

Stereum hirsutum

On corticated *Betula*, diam. 15 cm, decay 1; also *Hyphoderma setigerum*, on *Betula* log in pile, diam. 14 cm, decay 1.

Stereum sanguinolentum

On decorticated *Pinus* log, diam. 16 cm, decay 1; also *Peniophorella praetermissa*, *Botryobasidium candicans*.

Thanatheporus fusisporus

On decorticated *Pinus*, diam. 19 cm, decay 3.

Tomentellopsis echinospora

On living corticated *Juniperus*, diam. 1 cm.

Trametes ochracea

On cut *Betula* stump, diam. 18 cm, decay 3.

Trechispora confinis

On decaying *Betula* leaves, on living corticated *Juniperus*, diam. 0.6 cm.

Trechispora laevis

On decorticated *Pinus*, diam. 13 cm, decay 4; also *Peniophorella praetermissa*, *Kneiffiella subalutacea*, *Hyphoderma definitum*, *Botryobasidium candicans*.

Trechispora subsphaerospora

On decorticated *Pinus* branch, diam. 3 cm, decay 2, L.

Tubulicrinis borealis

On coniferous board, diam. 9 cm, decay 2; also *Phanerochaete laevis*.

Tubulicrinis glebulosus

On moist corticated *Salix*, diam. 3 cm, decay 3; also *Tulasnella albida*, on decorticated *Pinus*, diam. 6 cm, decay 2; also *Leptosporomyces galzinii*, *Hymenochaete fuliginosa*, on decorticated *Betula* branch, diam. 1.1 cm, decay 2, on partly corticated *Pinus* roots, diam. 4 cm, decay 3, on partly corticated *Betula*, diam. 3 cm, decay 4.

Tubulicrinis medius

On decorticated *Pinus* branch, decay 2, L.

Tubulicrinis subulatus

On decorticated *Pinus* branch, diam. 2.5 cm, decay 3.

Tulasnella albida

On moist corticated *Salix*, diam. 3 cm, decay 3; also *Tubulicrinis glebulosus*.

Tulasnella violea

On fallen *Pinus* bark.

Tyromyces chioneus

On corticated *Betula* branch, diam. 3 cm, decay 4.

Vararia investiens

On living *Juniperus*, diam. 0.6 cm, on corticated *Juniperus*, diam. 1.2 cm, decay 3.

Vesiculomyces citrinus

syn. *Gloiothele citrina*

On coniferous board, diam. 3 cm, decay 2 and on *Betula* leaves, on decorticated *Juniperus*, diam. 3 cm, decay 3; also *Basidioidendron caesiocinereum*, on living corticated *Juniperus*, diam. 1.2 cm, on decorticated *Juniperus*, diam. 1.5 cm, decay 1, on corticated *Juniperus*, diam. 3 cm, decay 2.

Xylodon asperus

syn. *Hyphodontia aspera*

On corticated *Juniperus*, diam. 1 cm, decay 2, on decorticated *Juniperus*, diam. 1.5 cm, decay 3, on corticated *Juniperus*, diam. 3 cm, decay 3; also *Hymenochaete cinnamomea*.

Xylodon borealis

syn. *Hyphodontia borealis*

On decorticated *Juniperus*, diam. 0.5 cm, decay 3, on corticated *Juniperus*, diam. 1.5 cm, decay 1, on corticated *Juniperus*, diam. 1 cm, decay 1, on corticated *Juniperus*, diam. 2.5 cm, decay 1, on living corticated *Juniperus*, diam. 1cm.

Other Aphyllorphoroid fungi in all

85 species

43 taxa new for the subzone 4d

186 specimens, including some observations, plus 10 *Tomentella* specimens which are not in the list. It may be worth mentioning that Kotiranta *et al.* (2009) report only two *Tomentella* species from 4d.

Discussion

During the three collecting days altogether 320 collections or observations were made. The number of species was 131, which is almost 83 % of the species reported from the subzone 4d by Kotiranta *et al.* (2009). One species is new to Finland, several very rare or rare species and 72 species are new to the subzone 4d. The total sum of species found from 4d is now 232. This shows how poorly the northernmost Aphyllorphoroid funga is known, and there are still tens of species which for sure grow also in Fjeld Lapland subzone (e.g. *Tomentella* species).

The junipers in Kevo had a rich species composition and also surprised species, like *Litschauerella clematitidis* and

Membranomyces spurius. One feature was characteristic for all the species growing on *Juniperus*; all the fruit bodies grew on stems which were buried in mosses. In southern and central Finland the situation is partly different. Fruit bodies can be found everywhere on stems – from buried parts till dead crowns or branches more than 2 metres above the ground. Probably the harsh conditions in north have a great effect on this.

Acknowledgements

The staff of Kevo Biological Station is warmly thanked for the hospitality and excellent working conditions and accommodation.

References

- Eriksson, J., Hjortstam, K. & Ryvarde, L. 1984: The Corticiaceae of North Europe 7. Schizopora to Suillosporium. – Pp. 1281–1449. Fungiflora, Oslo.
- Heikinheimo, O. & Raatikainen, M. 1981: Grid references and names of localities in the recording of biological finds in Finland. – *Notulae Entomologicae* 61: 133–154 (In Finnish with English summary).
- Hjortstam, K. & Ryvarde, L. 2009: A checklist of names in *Hyphodontia sensu stricto* – *sensu lato* and *Schizopora* with new combinations in *Lagarobasidium*, *Lyomyces*, *Kneiffiella*, *Schizopora* and *Xylodon*. – *Synopsis Fungorum* 26: 33–55.
- Kallio, P. & Kankainen, E. 1964: Notes on the macromycetes in Finnish Lapland and adjacent Finnmark. – *Rep. Kevo Subarctic Res. Stat.* 1: 178–235.

Kallio, P. & Kankainen, E. 1966: Additions to the mycoflora of northernmost Finnish Lapland. – Rep. Kevo Subarctic Res. Stat. 3: 177–210.

Kotiranta, H. & Saarenoksa, R. 1990: Reports of Finnish corticolous Aphyllophorales (Basidiomycetes). – *Karstenia* 30: 44–69.

Kotiranta, H. & Saarenoksa, R. 1993: Rare Finnish Aphyllophorales (Basidiomycetes) plus two new combinations in *Efibula* – *Karstenia* 30: 211–249.

Kotiranta, H., Saarenoksa, R. & Kytövuori, I. 2009: Aphyllophoroid fungi of Finland. A check-list with ecology, distribution, and threat categories. – *Norrlinia* 19: 1–223.

Niemelä, T., Wallenius, T. & Kotiranta, H. 2002: The kelo tree, a vanishing substrate of specified wood-inhabiting fungi. – *Polish Bot. Jour.* 47: 91–101.

Ohenoja, E. 1996: A check-list of larger fungi in Inari Lapland (NE Finland) and in Finnmark (NE Norway). – *Kevo Notes* 11: 1–44.

Rassi, P., Hyvärinen, E., Juslén, A. & Mannerkoski, I. 2010: The 2010 Red List of Finnish Species. – Ympäristöministeriö & Suomen ympäristökeskus, Helsinki 685 p. (www.environment.fi/redlist).

Shiryayev, A. 2008: New and interesting clavarioid fungi from the hemiboreal zone of Finland. *Karstenia* 48: 29–32.

Shiryayev, A.G., Kotiranta, H., Mukhin, V.A., Stavishenko, I.V. & Ushakova, N.V. 2010: Aphyllophoroid fungi of Sverdlovsk region, Russia: biodiversity, distribution, ecology and the IUCN threat categories. – Ekaterinburg: Goshchitskiy Publisher, 304 p.

Kevo Notes

Published by the Kevo Subarctic Research Institute of the University of Turku, Finland
(www.kevo.utu.fi)

6 (1982)

KOPONEN, S., LAASONEN, E.M. & LINNALUOTO, E.T.: Lepidoptera of Inari Lapland, Finland, 1-36.

7 (1984)

Invertebrates of Inari Lapland, Finland, 1-120.

1 (3rd edition, 1988)

ISO-IIVARI, L.: Vertebrates of Inari Lapland, 1-12.

8 (1989)

HEIKKINEN, R.K. & KALLIOLA, R.J.: Vegetation types and map of the Kevo nature reserve, northernmost Finland, 1-39.

9 (1990)

HEIKKINEN, R.K. & KALLIOLA, R.J.: The vascular plants of the Kevo Nature reserve (Finland); an ecological-environmental approach, 1-56.

10 (1995)

BLOMQVIST, I.: Ympäristön yhdennetyn seurannan planktonitutkimukset Vuoskojärvellä vuonna 1994, 1-25 + I-IX.

11 (1996)

OHENOJA, E.: A check-list of the larger fungi in Inari Lapland (NE Finland) and in Finnmark (NE Norway), 1-44.

12 (2002)

MÄKINEN, Y.: Floristic observations in western Kola Peninsula, NW Russia, 1-33.

13 (2009)

NEVALAINEN, L.: Autumnal chydorid fauna (Anomopoda, Chydoridae) in Kevo region, northern Finnish Lapland, 3-20.