Synopsis Fungorum 33

Fungiflora

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Type studies in Polyporaceae 31
Species described by V. Cesati

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Abstract
Of the 25 poroid species described by V. Cesati, the types of 16 were studied, while those of 9 are apparently lost. Four species are accepted with references to recent descriptions while 12 are treated as taxonomic synonyms. The following new combination *Ganoderma piceus* (Cesati) Ryvarden, is proposed. A description of *Trametes aurora* (Cesati) Saccardo is provided.

Introduction
Vincenzo de Cesati was born in Milan in 1806 and studied natural sciences and humanities at University of Vienna. He was friend and colleague to many mycologists at his time, and in 1868 became Professor of Botany and Director of Botanical Garden of Naples. He died in 1883 in Vercelli in Italy.

His main interest was mainly microfungi and in particular the Sphaeriaceae and some selected genera of Ascomycota. He received numerous collections, among them a collection of polypores from Borneo collected by H. Beccari. The results were published in "Mycetum in itinere Borneensi lectorum a. cl. Od. Beccari "(1879).
In the following the place of publication is given by a page number since all species were described in the publication mentioned above. All collections were made by Beccari in Sarawak, a part of Borneo, without any detailed location, and this information is not repeated for each species. The Fungaria in New York, The National Fungal Collection, Farlow, Kew and Stockholm have been examined to locate the types of Cesati´s species and when found, the respective acronyms of the fungaria are given.

List of species
auriculaeformis Favolus p. 8, type not found.
aurora, Polyporus p. 5, (S).
= *Trametes aurora* (Ces.) Sacc**.**, Syll. fung. 6: 353, 1888. - *Trametes avellana* Bres. Krypt. Exsicc. Museo Vindob. Cent 20 p. 157, 1910 (S).
Basidiocarps annual to perennial, solitary or in small groups, pileate, applanate, broadly attached to somewhat tapering, up to 10 cm broad and 8 cm wide, 0.5-2 cm thick near the base, consistency woody hard when dry, pileus flat to slightly convex, upper surface first very finely velutinate, soon glabrous, slightly pinkish grey to cork coloured, regularly to irregularly concentrically zoned and sulcate, pore surface ochraceous to buff-wood coloured, pores round, 4-5 per mm, dissepiments thick and entire, slightly velvety, tubes unzoned or with few layers, total length up to 5 mm, each layer up to 2.5mm, pale

cinnamon, context ochraceous to cinnamon, fibrous, slightly zoned reflecting different growth stages, up to 4 mm thick, darkening in KOH.
Hyphal system trimitic, generative hyphae clamped, hyaline and thin walled, 2-3 µm wide, often difficult to find in the tubes, skeletal hyphae abundant in the whole basidiocarp, yellow, thick-walled to almost solid, 4-6 µm in diameter, binding hyphae slightly yellow, thin- to thick-walled, 1.5-3 µm wide, with short tapering branches, often difficult to find in the tubes, context completely dominated by golden skeletal hyphae, slightly wider than in the tubes, all hyphae negative in Melzer´s reagent.
Cystidia none.
Basidia not seen.
Spores not seen.
Substrate. On dead hardwood.
Distribution. Paleotropical, known from Madagascar and Borneo.
Remarks. The species is characterized by its flat sulcate basidiocarps with a pinkish to cork coloured glabrous pileus. The pore surface and context are characteristically pale pinkish-buff to pale cinnamon. All specimens examined have been sterile and a spore print would be most welcome.

beccarinus, Favolus p. 4 (BPI, K)
= *Cyclomyces fuscus* Fr.
caesiellus, Polyporus p. 6, type not found.
calignosus, Polyporus p. 6 (K).
= *Abundisporus fuscopurpureus* (Pers.) Ryvarden.
confundes, Polystictus p 6 (S, NY).
= *Trametes modesta* (Fr.) Ryvarden.
cremorinus, Polyporus p. 5, type not found.
eriopus Polyporus p. 4, type not found.
imponens, Daedalea p. 7 (K).
= *Gloeophyllum imponens* (Ces.) Teng, For a description see Ji-Ding & Xiao-qing 1992:197.
incomplitus, Polyporus p. 5 (BPI, Lloyd collection).
= *Polyporus dictyopus* Mont.
inzengae, Polyporus in Rabenhorst Fungi Europaei no. 1508, 1860 (K).
= *Fomes fomentarius* (L.:Fr.) J. Kickx.
lenzitiformis, Daedalea p. 7, type not found.
luctuosus Polyporus p. 7 (K).
= *Phellinus luctuosus* (Cesati) Ryvarden, for a description, see Ryvarden & Johansen 1980:182.
ludificans Trametes p. 7, type not found.
melanoporpoides, Fomes p. 6, type not found.
papulosus, Favolus p. 8 (K).
= *Favolaschia* sp.
polychrous, Polyporus p. 6 (S).
= *Microporus xanthopus* (Fr.) Kunt.
piceus, Polyporus p. 5 (K, BPI).

The type is apparently lost, but there is a specimen in the Kew Herbarium with the following label: “Frozen Hill, Selangor Border “(today this is in Malaysia), Coll. J. W. Ruihill and R. E. Holtum 16. September 1902. Lloyd Mycol. Coll. Cat. No 23599, “The only good specimen of this fungus seen”.
As the holotype apparently is lost, the cited collection is selected as neotype, with Lloyds specimen in the National Fungus Collection (BPI) as isotype.
This is a *Ganoderma* species and the following combination is proposed:
Ganoderma piceus (Ceasti) Ryvarden comb nov. Basionym: *Polyporus piceus* Ceasti, Att. Accad. Sci. Fis. Nat. Napoli 8:5, 1879. Index Fung. No 551122.
Basidiocarps pileate sessile, in the type about 4 cm wide, length not known, 2 cm thick at the base sulcate, glabrous, with a distinct thin cuticle in section, purplish reddish and glossy, pore surface dark brown, pores angular to circular, about 4-5 per mm; context dark brown.
Hyphal system trimitic; generative hyphae hyaline, thin-walled, with clamps, 2-5 µm in diam, skeletal hyphae arboriform abundant, thick-walled, yellowish brown, 3-6 µm in diam.
Cuticle on pileus surface consists of a vertical palisade of, club-like, thick walled to almost solid hyphal ends arising from generative hyphae, slightly amyloid, up to 40 m long from the basic clamp to the apex.
Cystidia or other sterile hymenial elements absent.
Basidia not seen.
Basidiospores 11-12.5 x 6-7, ellipsoid, truncate with an ornamented thick, brown endosporium.
Substrata. A unidentified hardwood tree.
Remarks. The species belongs in the complex typified by *G. resinaceum* and should be taken into account for those who want to clarify the taxonomic chaos around the far too many laccate *Ganoderma* species described from East Asia. See Moncalvo & Ryvarden (1997) for a comprehensive list of relevant names.

pusiolus, Polyporus p. 6 (K)
= *Rigidoporus lineatus* (Pers.) Ryvarden.
subauculeata, Hexagonia p. 8 (S).
= *Hexagonia glabra* (Fr.) Ryvarden.
transiens, Favolus p. 9 (K).
= *Cyclomyces setiporus* (Berk.) Pat.
velutina, Daedalea p. 8, type not found.
vilis Polyporus p. 6, type not found.
vitellina, Hexagonia p. 8 (S).
= *Oxyporus cervinogilvus* (Junghuhn) Ryvarden.

References.

Cesati V. 1879: Mycetum in itinere Borneensi Lectorum a cl. O. Beccari. Atti Accad. Sci. Fis. Nat. Napoli 8 :1-28.

Ji-Ding Z. & Xiao-quing, Z. 1992: The polypores of China. Bibl. Mycol. 145:1-524.

Moncalvo, J.-M. & Ryvarden, L. 1997. A nomenclaturial study of the Ganodermataceae Donk. Synopsis Fung. 11:1-114.

Ryvarden, L. & Johansen, I. 1980. A preliminary polypore flora of East Africa, Fungiflora, Oslo, Norway. 636 pp.

Type studies in Polyporaceae 32
Species described by T. Petch

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Abstract.
The types of 19 polypores described by T. Petch have been examined. One type is lost, one name is illegitimate, 9 species are accepted and their taxonomic disposition is given with references to relevant descriptions, while 8 names are treated as taxonomic synonyms. The combinations *Ceriporia rubescens* (Petch) Ryvarden, *Ceriporiopsis hypolateritius* (Cooke) Ryvarden and *Diplomitoporus sulphureus* (Petch) Ryvarden are proposed.

Introduction
T. Petch (1870-1948) was mycologist to the government of Ceylon at the Botanic Gardens at Peradeniya from 1905 to 1928. His main interest was fungal diseases on tropical crops, but he published also a number of polypores from the island which now have been examined.
The types of all his species are in the Kew Herbarium (K), thus this information in not repeated for each species. Further since all species were described in the same journal, the place of publication is given as a page number and the year of publication while the full titles of publications are given in the references.
The species are treated alphabetically according to specific epithet with a reference to the type localities which are all in Sri Lanka and thus, the latter name is not repeated for each species.

List of species

albobrunnea, Poria, p. 137, 1916, Hakgala.
= ***Ceriporiopsis hypolateritius*** (Cooke) Ryvarden, comb. nov.
Basionym *Poria hypolateritia* Cooke, Grevillea 15:24, 1886. Index Fungorum no. 551123.
For a description see Ryvarden & Johansen 1980: 608 as *Tyromyces lateritius*.
albocitrina, Poria p. 286, 1922, Kiriwanaketya.
= ***Hapalopilus albocitrinus*** (Petch) Ryvarden, For a description, see Ryvarden & Johansen 1980: 359.

aquosa, Poria p. 138, 1916 Peradenya.
= *Ceriporia xylostromatiodes* (Berk.) Ryvarden.

endoxantha, Poria, p. 285, 1922, Golinda.
= *Rigidoporus vinctus* (Berk.) Ryvarden.

gilvoides, Poria p. 138, 1916
= ***Phellinus cesatii*** Ryvarden.
= *Phellinus gilvoides* (Petch) Ryvarden, nomen illegit., non *Phellinus gilvoides* (Lloyd) Teng 1943) (= *Phellius viticola* (Schw.) Donk.
For a description of *P. cesatii,* see Ryvarden & Johansen 1980: 166.

glaucescens. Poria p. 139, 1916, Hakgala.
= ***Phellinus glaucescens*** (Petch) Ryvarden, for a description see Ryvarden & Johansen 1980:169.

hypobrunnea, Poria p. 137, 1916, Peradenya.
= *Rigidoporus vinctus* (Berk.) Ryvarden.

imitator, Fomes, p. 285, 1922, Hakgala.
= *Daedalea incana* (Lév.) Ryvarden.

inonoratus Polyporus, p. 315, 1922, Henaralgada.
= *Fomitopsis rhodophaeus* (Lev.) Imazeki.

introfuscus,, Polyporus p. 119, 1916, Peradeniya.
= *Coriolopsis sanguinaria* (Kl.) Ryvarden.

mesoleucus, Fomes, p. 315, 1922,Warriapolla.
= ***Perenniporia mesoleuca*** (Petch) Ryvarden, for a description see Ryvarden & Johansen 1980: 467.

obscurus, Polyporus p. 128, 1916, Peradeniya.
= Nomen illegit., non Kalchbr. 1880.

pallidus, Polyporus p. 134, 1916, Colombo.
= *Perenniporia tephropora* (Mont.) Ryvarden.

pilosus, Polyporus, p. 126, 1916, Peradeniya.
= ***Albatrellus pilosus*** (Petch) Ryvarden, for a description see Ryvarden & Johansen 1980: 237.

purpureogilva, Poria, p. 138, 1916, Peradeniya.
= ***Phellinus purpureogilvus*** (Petch) Ryvarden, for a description see Ryvarden & Johansen 1980:203.

rubescens, Poria, p. 286, 1922, Hakgala.

= ***Ceriporia rubescens*** (Petch) Ryvarden comb. nov. Basionym: Poria *rubescens* Petch, Ann. R. bot. Gdns Peradeniya **7**: 286, 1922. Index Fungorum no 551124.

Basidiocarps annual, resupinate; pore surface cream chrome yellow to pale reddish purplish brown, described as more pure sulphur yellow when fresh, pores angular, 3-5 per mm, tubes to 2 mm thick, concolorous with pore surface, subiculum thin, almost absent.
Hyphal system monomitic generative hyphae thin -walled, simple-septate, with moderate branching, often in right angles, 2.5-6 µm in diam.
Cystidia or other sterile hymenial elements not seen.
Basidia 12-18 x .5-5.5 µm, clavate, 4-sterigmate.
Basidiospores 4-5 x 1.5-2 µm, cylindrical and negative in Melzer´s reagent.
Substrata. Unknown hard wood.
Distribution. Known only from the type locality in Sri Lanka.
Remarks. Undoubtedly, this species belongs in the complex around *C. viridans* (Berk. & Broome) Donk, typically with the same spores as in that species. The colour is however strikingly different from the white to dirty greenish colours seen in specimens of *C. viridans.* Superficially it is reminiscent of a resupinate *Hapalopilus* species, but all species in that genus have generative hyphae with clamps.

rubrochorda, Poria p.: 204,1917, Peradeniya. Type not found.

sulphurea Poria p.286, 1922.

= ***Diplomitoporus sulphureus*** (Petch) Ryvarden, comb. nov. Index Fungorum no 551125.

Basionym: *Poria sulphurea* Petch, Ann. Roy. bot. Gdns. Peradeniya **7**: 286, 1922.
Basidiocarps annual, resupinate, effused, up to 0.4 mm thick, margin narrow, whitish and byssoid, pore surface cork coloured to deep ochraceous, described to be sulphur-yellow when fresh, pores round, 5-6 per mm, tubes concolorous, to 300 µm deep, context ochraceous very thin to almost absent.
Hyphal system dimitic, generative hyphae with clamps, thin-walled 2-3 µm wide, skeletal hyphae, 2-4 µm wide, thick-walled and non-amyloid.
Basidia not seen.
Cystidia and other hymenial elements not seen.
Basidiospores 4-5 x 2.5-3.5 broadly ellipsoid.
Substrata. Dead hard wood.
Distribution. Known only from the type locality in Sri Lanka.
Remarks. The sulphur-yellow colour in fresh condition and the dimitic hyphal system characterize this species.

violaceocinerascens, Polyporus, p. 127, 1916, Peradeniya.

= *Microporellus violaceocinerascens* (Petch) A. David & Rajchenb. For a description, see Ryvarden & Johansen 1980:301.

References

Petch, T. 1916: A preliminary list of Ceylon Polypori, Ann. Roy. Bot. Gard. Peradeniya 6:87-144.

Petch, T. 1917. Additions to Ceylon fungi Ann. Roy. Bot. Gard. Peradeniya, 6:195-256.

Petch, T. 1922: Additions to Ceylon Fungi II, Ann. Roy. Bot. Gard. Peradeniya 7:279-328.

Ryvarden, L. & Johansen, I. 1980: A preliminary polypore flora of East Africa. Fungiflora, Oslo, Norway.

Type studies in Stereum s. lato 5
Species described by M. J. Berkeley

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Abstract
98 species described or transferred by M.J. Berk**e**ley (either alone or with other mycologists) in *Stereum* have been studied based on available types. One species is accepted in *Stereum*, 45 are redistrubuted to other genera, three names are illegitimate, and 50 are treated as taxonomic synonyms or the types are indterminate.
The combination *Podoscypha pusillum* (Berk.) Ryvarden is proposed.

Introduction
M. Berkeley was a prolific mycologist who described a vast number of fungi, some of them in the genus *Stereum*.

His generic concept was that which was current in his time, i.e. all pileate to effused reflexed fungi with a smooth hymenium were described in *Stereum.*

This and the fact that he never ventured outside England (he was a clergyman, and so could not leave his parishioners) and never saw the majority of his own species in the field, accounts for the many synonyms, as is evident from the following list.

The following list includes all species described by Berkeley in *Stereum* besides species he described in other genera, but which he or other mycologist later transferred to *Stereum*.

All types for Berkeley's species are in the herbarium at the Royal Botanic Garden, London (K), and this information is not repeated for each species. In cases where types were found in addition in other herbaria, this is indicated with the well-known acronyms for those herbaria (see http://sciweb.nybg.org/science2/IndexHerbariorum.asp).
My studies in the Kew herbarium were facilitated by the many notes left with the types by the late Dr. D. A. Reid, previously the senior mycologist and curator of the mycological herbarium. His] monograph of the stipitate *Stereum* (Reid 1965) was a landmark in the effort to sort out the many synonyms and confused species concepts among the 534 names currently known to be originally described in *Stereum* or later combined in the genus. Further J. Bresadola also left notes as to synonymy on many type sheets, which have also been most valuable and time saving.

The staff at the Kew Herbarium, currently represented by Dr's B. Dentinger and M. Ainsworth are warmly thanked for their help, and for making my many visits to the herbarium both mycologically profitable and enjoyable.

Dr. Peter Roberts and Dr. David Pegler, both previously connected to the herbarium have both contributed considerably to my mycological competence and I thank them also for their efforts and enthusiasm.

Nick Legon and Alick Henrici who compiled the British checklist of Basidiomycetes, (ref-.) have always been kind and patient in helping with my somewhat primitive and not always accurate use of the English language. Their support is deeply acknowledged.
The species are arranged alphabetically, according to the specific epithet.

List of species

aculeatum, **Stereum** (Berk. & M. A. Curtis) Lloyd, Mycol. Writ. 4:32, 1913.
= *Podoscypha aculeata* (Berk. & M. A. Curtis) Boidin.

affine, Stereum (Berk. & M. A. Curtis) Henn., Hedwigia 43:198,1904.
= Nomen illegit., non Leveille 1844.

albo-cinctum, Stereum Berk. & Broome,. Jour. Linn. Soc. Bot. 14:66, 1875.
= *Scytinostroma albo-cinctum* (Berk. & Broome) Boidin & Lanq.

alliciens, Stereum Berk. & Cooke, Jour. Linn. Soc. 15:389. 1876.
= *Eichleriella alliciens* (Berk. & Cooke) Burt.

alutaceum, Stereum Berk.. & Cooke, Jour. Linn. Soc. 15:388. 1877.
= *Cotylidia aurantica* (Pers.) Welden.

annosum, Stereum Berk. & Broome, J. Linn. Soc. Bot. 14, 67. 1874.
= *Xylobolus princeps* (Jungh.) Boidin.

archeri, Stereum Berk., Fl. Tasm. 2:259, 1860.
= *Stereum illudens* Berk.

bizonatum, Stereum Berk. & M. A. Curtis, Grevillea 1:163, 1873.
= *Dendrophoira albobadia* (Schw. ex Fr.) Chamuris.

cacao, Stereum Berk. Hook., J. Bot. 6:169. 1854.
= *Hymenochaete cacao* (Berk.) Berk.

calyculus, Stereum Berk. & M. A. Curtis, Jour. Bot.1:238, 1849.
= *Pseudocraterellus calyculus* (Berk. & M. A. Curtis) D. A. Reid.

caperatum, Stereum (Berk.& Mont.) Berk., J.Linn.Soc.18:385, 1881.
= *Cymatoderma caperatum* (Berk. & Mont.) D. A. Reid.

coffearum, Stereum Berk. & M. A. Curtis, Grevillea 1:164. 1873.
= *Laxitextum bicolor* (Schw. : Fr.) Lentz.

coffearum, Stereum Berk. & M. A. Curtis, Jour. Linn. Soc. 10:332. 1869.
= *Dendrothele albobadium* (Schw. : Fr.) Chanuris.

concolor, Stereum Berk., Fl. Tas. 2:259. 1860.
= Nomen illegit. non Mont. 1841 **(=** *Stereum versicolor* (Swartz*)* Fr.).
= name changed to *Stereum tasmanicum* Sacc.

contrarium, Stereum Berk., Jour. Linn. Soc. 16:52. 1878.
= *Xylobolus princeps* (Jungh.) Boidin.

coriaceum, Stereum (Berk. & Broome) Petch, Ann. Roy. Bot. Gard. Perad. 9:138,1924.
= *Stereum versicolor* (Sw.) Fr.

cristatum, Stereum Berk. & M. A. Curtis, Grevillea 1:163, 1873.
= *Podoscypha cristata* (Berk. & M. A. Curtis) D. A. Reid.
curtisii, Stereum Berk., Grevillea 1:164, 1873.
= *Hymenochaete curtisii* (Berk.) Morgan.
cyphelloides, Stereum Berk. & M. A. Curtis, Jour. Linn. Soc. Bot. 10:331, 1869.
= *Cyphellostereum pusiolum* (Berk. & M. A. Curtis) D. A. Reid.
dissitum, Stereum Berk., Grevillea 1:164, 1873.
= *Lopharia cinerascens* (Schw.) G. Cunn.
duriusculum, Stereum Berk. & Broome J. Linn. Soc. Bot. 14:66, 1873.
= *Scytinostroma duriusculum* (Berk. & Bres.) Donk.
effusum, Stereum Berk., J. Linn. Soc. 16:44. 1876.
= Insect eaten old polypore, teste Bresadola in K.
elevatum, Stereum Berk. & Cooke, J. Linn. Soc. 15:388. 1877.
= *Amauroderma partitium* (Berk.) Wakef.
endocrocinum, Stereum Berk. Hooker Journ. Bot.. 1854, p. 169.
= *Perplexostereum endocrocinum* (Berk.) Tutka & Ryvarden,
See Synopsis Fungorum 32:75, 2014 for a description and colour pictures of fresh specimen from Nepal.
ferreum, Stereum Berk. & M. A. Curtis, J. Linn. Soc. 10:332, 1869.
= *Amylostereum ferreum* (Berk. & M. A. Curtis) Boidin & Lanq.
fissum, Stereum Berk., Hooker Jour. Bot.8:273, 1856.
= *Inflatostereum glabrum* (Lév.) D. A. Reid.
fulvo-nitens, Stereum Berk., Ann. Mag. Nat. Hist. Ser. 2, 9:198. 1852.
= *Podoscypha fulvo-nitens* (Berk.) D. A. Reid.
galeottii, Stereum Berk., Jour. Bot. 3:15, 1851.
= *Stereum versicolor* (Sw..Fr.) Fr.
glabrescens, Stereum Berk. & M. A. Curtis, Jour. Linn. Soc. 10:330. 1869.
=*Podoscypha glabrescens* (Berk. & M. A. Curtis) D. A. Reid.
hispidulum, Stereum (Berk.) G. Cunn. Proc. Linn. Soc. N. South Wales 77:284. 1953.
= *Punctularia strigoso-zonatum* (Schw.) Talbot.
hydrophorum, Stereum Berk., Hooker London Jour. Bot. 8:273, 1856.
= *Aquaschypha hydrophora* (Berk.) D. A. Reid.
illudens, Stereum Berk., Lond. Jour. Bot. 4:59, 1845.
= accepted in *Stereum* s. str.
induratum, Stereum Berk., Jour. Linn. Soc. 16:44, 1878.
= *Scytinostroma albo-cinctum* (Berk. & Broome) Boidin.
insulare, Stereum Berk. & Broome, Bot. J. Linn. Soc.14: 66, 1875.
= *Vararia* sp. The type is old and sterile.
kunzei, Stereum Berk., Jour. Linn. Soc. 15:51. 1877.
= *Hymenochaete* sp. The type is sterile and in bad condition.
laetum, Stereum Berk., Jour. Acad. Phila. Ser. 2, 2:279, 1853.
= *Hymenochaete luteo-badia* (Fr.) Höhnel & Litschauer, see Leger 1998:185.

lamellatum, Stereum (Berk. & M. A. Curtis) Wakef. in Sarasin & Roux „Nova Caldonia“ Botany, 1: 100, 1920.
= *Cymatoderma elegans* Jungh.
latissimum, Stereum Berk., Flora N. Z. 2:183, 1855.
= Type not found.
lepra, Stereum Berk. & Broome Jour. Linn. Soc. Bot. 14:67. 1875.
= *Dendrothele lepra* (Berk. & Broome) Lemke.
leveilleanum, Stereum (Berk. & M. A. Curtis) Ravenel, Grevillea 1:163, 1873
= *Eichleriella leveilleana* (Berk. & M.A. Curtis) Burt.
lilacino-fuscum, Stereum (Berk. & M. A. Curtis) Lloyd, Lloyd Mycol. Writ. 5: L 68:8, 1918.
= *Corticium lilacino-fuscum* Berk. & M. A. Curtis, Grevillea 1:180,1873.
= *Dendrocorticium roseocarnum* (Schw.) Larsen & Gilbn.
micheneri, Stereum Berk. & M. A. Curtis, Grevillea 1:162, 1873.
= *Chondrostereum purpurem* (Pers.) Pouzar.
minimum, Stereum (Berk. & Broome) Lloyd, Lloyd Mycol. Writ. 4:36, 1913.
= *Cylindrobasidium evolvens* (Fr.) Jül.
moricola, Stereum Berk., Grevillea 1:162, 1873.
= *Lopharia cinerascens* (Schw.) G. Cunn.
moselei, Stereum Berk., Jour. Linn. Soc. 16:48. 1878.
= *Podoscypha moselei* (Berk.) D. A. Reid.
multizonatum, Stereum (Berk. & Broome) Massee, J. Linn. Soc. 27:167,1890.
= *Podoscypha multizonata* (Berk. & Broome) Pat.
murrayii, Stereum (Berk. & M. A. Curtis) Burt, Ann. Mo. Bot. Gard. 7:131,1920.
= *Cystostereum murrayii* (Berk. & M. A. Curtis) Pouzar.
nicaraguense, Stereum Berk. & M. A. Curtis, Proc. Am. Acad. 4:123. 1860.
= *Porostereum crassum* (Lev.) Hjorst. & Ryvarden.
nitidulum, Stereum Berk. Lond. Jour. Bot. 2:638, 1843.
= *Podoscypha nitidula* (Berk.) Pat.
obliquum, Stereum Mont. & Berk .Hooker Lond. J. Bot. 3:334,1844.
= ***Podoscypha pusillum* (Berk.) Ryv. ined.**
partitum, Stereum Berk. & Broome, J. Linn. Soc. Bot. 14:65, 1873.
= *Inflatostereum glabrum* (Lev.) D. A. Reid.
percome, Stereum Berk. & Broome, J. Linn. Soc. 14:65, 1873.
= *Porostereum friesii* (Lev.) Hjorstst. & Ryvarden.
pergameneum, Stereum Berk. & M. A. Curtis, Grevillea 1:161,1873.
= *Podoscypha ravenelii* (Berk. & M. A. Curtis) Pat.
perlatum, Stereum Berk., Lond. Jour. Bot. 1:153. 1842.
= *Stereum versicolor* (Sw.) Fr.
petalodes, Stereum Berk. Ann. Mag. Nat. Hist. Ser. 2, 9:198, 1852.
= *Podoscypha petalodes* (Berk.) Pat.
phaeum, Stereum Berk., Flora N. Z. 2:183. 1855.
= *Hymenochaete villosa* (Lev.) Bres.

pictum, Stereum Berk. ex Massee, J. Linn. Soc. 27:185. 1890.
= *Stereum versicolor* (Sw.) Fr.
portentosum, Stereum (Berk. & M. A. Curtis) Cooke.
= *Scytinostroma portentosum* (Berk. & M. A. Curtis) Donk.
proliferum, Stereum (Berk.) Lloyd, Lloyd Myc. Writ. 4:554,1913.
= *Scytinopogon scaber* (Berk. & M. A. Curtis) D. A. Reid.
prolificans, Stereum Berk., Jour. Linn. Soc. 16:41. 1878.
= *Podoscypha involuta* (Kl.) Imazeki.
pruinatum, Stereum Berk. & M. A. Curtis, Jour. Linn. Soc. 10:332. 1869.
= *Peniophora pruinata* (Berk. & M. A. Curtis) Burt.
pusillum, Stereum Berk. Ann. Mag. Nat. Hist. 10:381,1842.
= *Podoscypha pusillum* (Berk.) Ryvarden, comb nov. basionym as cited on the line above. Type examined in herb. K. Index Fung. No 551121

Reid (1965:268) admits that *Stereum pusillum* has priority over a number of other names he lists, but argues that " this name is based on an abnormal specimen which is not typical of the taxon as a whole, although it undoubtedly belongs to it".

I agree with Reid after having examined the type in Kew, it is beyond doubt that what he has described as *Podoscypha venustula* (Speg.) D. A. Reid is the same thing. Since the taxonomy is clear, it is not acceptable according to the International Code of Nomenclature for algae, fungi and plants.(Melbourne Code) 2012, reject a name because the type specimen does not conform to the general shape of basidiocarps in the taxon.
pusiolum, Stereum Berk. & M. A. Curtis, Jour. Linn. Soc. 10:330,1869.
= *Cyphellostereum pusiolum* (Berk. & M. A. Curtis) D. A. Reid.
quisquiliare, Stereum (Berk. & M. A. Curtis) Lloyd Mycol. Writ. 4:36,1913.
= *Cotylidia aurantiaca* (Pers.) Welden.
radiatofissum, Stereum Berk. & Bres., Trans. Linn. Soc., II, 2:63. 1883.
= *Xylobolus princeps* (Jungh.) Boidin.
radicans, Stereum (Berk.) Burt, Ann. Mo. Bot. Gard. 7:108, 1920.
= *Stereopsis radicans* (Berk.) D. A. Reid.
rameale, Stereum (Berk.) Mass. J. Linn. Soc. Bot. 27:187, 1890.
= *Stereum ochraceo-flavum* (Schw.) Ellis.
ravenelii, Stereum Berk. & M. A. Curtis, Grevillea 1:162. May 1873.
= *Podoscypha ravenelii* (Berk. & M. A. Curtis) Pat.
rhabarbarinum, Stereum (Berk. & Broome) Wakef. , Kew. Bull.1915, p. 370, 1915.
= *Xylobolus princeps* (Jungh.) Boidin, teste Bres. in K.
rimosum, Stereum Berk. Jour. Bot. & Kew Misc. 3:169,1851.
= *Stereum versicolor* (Sw.) Fr.
rivulorum, Stereum Berk. & M. A. Curtis, Jour. Linn. Soc. 10:330. 1869.
= *Cyphellostereum rivulorum* (Berk. & M. A. Curtis) D. A. Reid.
ruberrimum, Stereum Berk. &. Broome, J. Linn. Soc., Bot. 14: 67, 1873.
= old dead lichen sp.
rugosiusculum, Stereum Berk. & M. A. Curtis, Grevillea 1:162, 1873.
= *Chondrostereum purpureum* (Pers.:Fr.) Pouzar
schomburgkii, Stereum Berk. J. Linn. Soc. Bot. 13:168, 1873.

= *Porostereum spadiceum* (Pers.:Fr.) Hjortst. & Ryvarden.

scriblitum, Stereum Berk. & Cooke, Grevillea 7:102, 1879.
= *Stereum sanguinolentum* (Alb. & Schw.:Fr.) Fr.

scytale, Stereum Berk,. Hook. Jour. 1854: 170, 1854.
= *Xylobolus semipileatus* (Berk. & M. A. Curtis) Boidin.

seriatum, Stereum Berk. & M. A. Curtis, Jour. Linn. Soc. 10:332, 1869.
= *Dendrothele seriata* (Berk. & M. A. M. A. Curtis) Lemke.

simulans, Stereum Berk. & Broome, Trans. Linn. Soc., II 2:64. 1883.
= *Stereum versicolor* (Sw.) Fr.

sowerbyii, Stereum Berk., Flora Nov. Zeland. 2:182,1855.
= *Cotylidia pannosa* (Sow.:Fr.) D. A. Reid.

sparsum, Stereum Berk., J. Linn. Soc. 13:169, 1873.
= *Aleurodiscus sparsus* (Berk) Hõhn. & Litsch., for a description, see Nunez & Ryvarden 1997:127.

spathulatum, Stereum Berk., Jour. Bot. & Kew Misc 8:274. 1856.
= *Microporellus obovatus* (Jungh.) Ryvarden.

spongiaepes, Stereum Berk., J. Linn. Soc. 18:385, 1881.
= *Cymatoderma elegans* Jungh.

stratosum, Stereum Berk. & Broome, Ann. Mag. Nat. Hist. Ser. 5. 12:374. 1883.
= *Stereum rugosum* Pers.

subcruentatum, Stereum Berk. & M. A. Curtis, Proc. Am. Acad. 4:123. 1860.
= *Aleurocystidiellum subcruentatum* (Berk. & M. A. Curtis) Lemke.

subpileatum, Stereum Berk. & M. A. Curtis, Hookers J. Bot. 1:238, 1849.,
= *Xylobolus subpileatum* (Berk. & M. A. Curtis) Boidin.

subpurpurascens, Stereum Berk. & Broome, Bot. J. Linn. Soc. 14: 66, 1875.
= *Hymenochaete subpurpurascens* (Berk. & Broome) Massee, for a description, see Leger 1998:268.

sulphuratum, Stereum Berk. & Ravenel, Jour. Linn. Soc. 10:331,1869.
= *Stereum ochraceo-flavum* (Schw.) Ellis.

tenerrimum, Stereum Berk. & Ravenel, Grevillea 1:162,1873.
= *Cotylidia undulata* (Fr.) P. Karst.

tenuissimum, Stereum Berk., Lond. Jour. Bot. 6:510-511. 1847**.**
= *Hymenochaete rheicolor* Mont.

thozetii, Stereum Berk. J. Linn. Soc. 18:385, 1881.
= *Podoscypha thozetii* (Berk) Boidin.

thwaitesii, Stereum (Berk. & Broome) Petch, Ann. Roy. Bot. Gard. Peradeniya 9:134 1924.
= *Stereopsis radicans* (Berk) D. A. Reid.

triste, Stereum Berk. & M. A. Curtis, Jour. Linn. Soc. 10:332. 1869.
= *Ustulina* sp. teste Bres. in K.

tuba, Stereum Berk. & Broome, Bot. J. Linn. Soc. 14: 65, 1873.
= *Calyptella* sp. (Cyphellaceae), teste D. A. Reid 1962:140.

umbrinum, Stereum Berk. & M. A. Curtis, Grevillea 1:164, 1873.
= Nomen illegit, non Fr. 1846.

vellereum, Stereum Berk. Fl. Nov.Zeal. 2:183, 1855.

= *Stereum ochraceo-flavum* (Schw.) Ellis.

versiforme, Stereum Berk. & M. A. Curtis, Grevillea 1:164, 1873.

= *Dendrophora versiforme* (Berk. & M. A. Curtis) Chamuris.

vespilloneum, Stereum B., Bot. Jour. Linn. Soc. 16:44. 1878.

= *Podoscypha involuta* (Kl.) Imazeki.

vibrans, Stereum Berk. & M. A. Curtis, Jour. Linn. Soc. 10:332. 1869.

= *Porostereum vibrans* (Berk. & M. A. Curtis) Ryvarden.

References

Leger, J.-C. 1998: Le genere *Hymenochaete* Leveille. Bibl. Mycol. 171:1-319.

Nunez, M. & Ryvarden, L. 1997: The genus *Aleurodiscus* (Basidiomycotina) Synopsis Fung. 12:1-164.

Reid, D. A. 1965: A monograph of the stipitate stereoid fungi. Beiheft Nova Hedw. 18:1-382.

Ryvarden, L. & Tutka 2014: *Perplexostereum*, nov. gen. Synopsis Fung. 32. 72-75.

Notes on Homobasidiomycetes from St. Helena

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Abstract
4Ascomycetes, 39 Homobasidiomycetes and 6 Myxomycetes are reported from St. Helena including the two only species previously reported form the island.

Introduction
St. Helena is one of the most isolated islands in the world with a distance of 1800 km to the African mainland in Angola and 3260 km to the eastern coast of Brazil in South America. The island is of volcanic organ and arose on the mid-Atlantic ridge some 14 million years ago. In contrast to many other islands along the same rift which still are active, Iceland being the most prominent example, it soon became extinct and drifted eastwards towards Africa on the African tectonic plate (P. & M. Ashmole 2000).
Over millions of years it was invaded by plants, birds and insets, and when the Portuguese discovered the island in 1502, it was lush green and more or less covered with forests. The history from then is the familiar one with continuous destruction of the natural vegetation and introduction of foreign trees and plants and the inevitable rats. Today there are only tiny spots remaining of the original vegetation, especially around Dianna Peak, 725 m, the highest point on the island, where ferns and some low bushes still may give the visitor a glimpse of the former vegetation. It took over 250 years with colonization before a botanist came the island and started collecting and registration of what was left of the original flora. We do not know of course how many epiphytes and smaller plants went extinct when the forest were cut down for timber or to open grasslands. Those interested in the natural history of the island are referred to the excellent "St Helena and Ascension Island: A natural history" by P. & M. Ashmole (2000).

The only report of fungi from the island is that of Mellis (1875) who during his stay on the island collected a single polypore and a *Xylaria* sp. They were handed over to M. J. Berkeley at Kew, who named them *Polyporus induratus* Berk. and *Hypoxylon mellissii* Berk., respectively. The polypore was later named *Antrodiella induratus* (Berk.) Ryvarden) while the *Hypoxylon* today is known as *Xylaria mellissii* (Berk.) Cooke. After having seen the type of *Polyporus induratus* in the Kew Fungarium, one of us (LR) felt it could be interesting to visit St. Helena to see whether Melliss polypore still was present

on the island. An investigation into the mycota could well shed light on how fungi are able to invade remote islands.
In February 2014 one of us (LR) visited the island for a week and made 217 collections. Back home the specimens where sorted according to systematic groups, and those different from polypores and corticoid specimens were sent to specialists who are indicated in the following.
St. Helena is a small island and collecting sites are given by name only, as they will easily be found on the map of the island: St. Helena, Series G 891, 1: 25 000.

The following localities were visited with dates and collections numbers:
Boers graveyard, 1. February 49387- 401.
Diana´s Peak, 2. February 49402 - 428.
Scotland Agriculture Station 3. February 49429 - 508.
Peak Dale, 4. February 49504 - 440.
Plantation House 5. February 49541 - 575.
Thomson´s wood 6. February 49576 - 602.
In citing the collections numbers, only the three last digits are given since they all are of the 49 000 series.
Determinations not done by the authors, are acknowledged with names and their affiliation. Unless otherwise indicated, all collections were made on unidentified hard woods. All collections are deposited in the Kew Herbarium, London (K), while some duplicates are retained in the Oslo University Herbarium (O).

Ascomycetes
Determined by Dr. Thomas Læssøe, University of Copenhagen, Denmark.
Xylaria globosa (Spreng.:Fr.) Mont., 420, 489, 586.
X. mellissii (Berk.) Cooke, Melliss 1875.
Kretzchmaria sp. 429, 516.
Rosellinia cfr *subiculata* Schwein.) Sacc., 581.

Basidiomycetes

Agaricales
Determined by Dr. Thomas Læssøe, University of Copenhagen, Denmark.
At arrival at St. Helena it had not rained for about 10 days and did not so during the stay. Thus, the conditions for development of agarics where not the best, and only a few collections were made.
Hohenbuehelia sp. 447.
Hypholoma fasciculare (Hudson) Kunner, 472, rather common and observed in most of the visited localities.
Flammulaster siparius (Fr.) Watling, 449.
Marasmiellus sp. On *Bambusa*, 390.

Cyphellaceae
Henningsomcyes puber (W. B. Cooke) D. A. Reid, 396, on hard wood, 528, on *Commelidendron robustum*,
Determined by Dr. R. Agerer, Botanische Samlung, Münic, Germany.
Favolaschia calocera P. Henn., 407, 467, 585, on *Erythrina caffra.*

Polyporaceae
Antrodiella induratus (Berk.) Ryvarden, Mellis 1875.
Physisporinus sanguinolentus (Alb. & Schwein.: Fr.) Pilat, 466 on *Pinus* sp., 505 on *Commelidendron robustum*.
Trametes pavonia (Hooker) Ryvarden, 410.
T. vespacea (Pers.) Zmitr., Wasser & Ezhov., 488.

Corticiaceae s.lato
Amyloxenasma allantospora (Oberw.) Hjortstam & Ryvarden, 579, on *Lachanodes arbórea*.
Asterostroma muscicola (Berk. & M. A. Curtis) Massee, 444, 587, on *Erythrina caffra.*.
Athelopsis lembospora (Bourdot) Oberw., on *Dicksonia*sp.
Gloeocystidiellum sp. 540.
Hypochnicium rickii Hjortst. & Ryvarden, 430, 582.
*Hyphoderma eucalypti*i Dumas & Telleria, 519.
H. praetermissum (P. Karst.) J. Erikss. & Strid, 389, on *Bambusa* sp..
H. puberum (Fr.) Wallroth, 435.
H. setigerum (fr.) Donk, 388, 425, 473, on *Bambusa* sp., 512 on *Erythrina caffra,* 549.
Hyphodonta alutaria (Burt) J. Erikss., 484.
H. pallidula (Bres.) J. Erikss., 518, 596 on *Erythrina caffra.*
H. sambuci (Pers.) J. Erikss., 421, 493.
Leptosporomyces fuscostratus (Bourd & Galzin) Jülich 399, on *Pinus* sp.
Leuocogyrophana romellii Ginns, 453.
Phlebia radiata Fr., 415.
P. rufa (Pers.) M.P.Christ., 432, 527.
P. subochracea (Alb. & Schwein.) J. Erikss. & Ryvarden, 462.
Phlebiopsis gigantea (Fr.) Jülich 392, on *Pinus* sp., 492, 569, on *Bambusa* sp.
Resinicium friabile Hjortstam & Melo, 393, on *Pinus* sp., 500, on fern, 571, on *Dicksonia* sp.
Schizopora flavipora (Cooke) Ryvarden, 387.
S. trichiliae (Van der Byl) Ryvarden, 49441, 49490, 49498, 49551 and 49558.
The specimens of this taxon were first assumed to represent a new species because of their distinct pileate shape not seen in the mainland African specimens. However, a DNA sequencing showed them however to represent the species given above, which was originally described from South Africa.
Scopuloides hydnoides (Cooke & Massee) Hjortstam & Ryvarden, 479, 524.
Subulicystidium longisporum (Pat.) Parmasto, 521.
Trechispora farinacea (Pers.) Liberta, s. lato, 507, 589, on *Erythrina caffra.*

T. nívea (Pers.) T. H. Larss. 508.
Tubulicrinis calothrix (Pat.) Donk, 398, 462, on *Pinus* sp.

Coniophoraceae
Coniophora puteana (Fr.) P. Karst. 451, on *Pinus* sp.

Hymenochaetaceae
Hymenochaete opaca Burt, 395, on *Pinus* sp., 515, on *Commelidendron robustum*, 558.

Myxomycetes
Determined by E. Johannessen**,** Research Administration, Medical Faculty, Univerity of Oslo.
Lycogala epidendron (L.) Fr., 439.
Cribraria cancellata (Batsch) Nann.-Bremek., 443.
Arcyria obvelata (Oeder) Onsberg, 476.
Stemonitis splendens Rostaf., 535.
Hemitrichia calyculata (Speg.) M. L. Farr., 591.
Reticularia jurana Meyl., 602.

Discussion
It is obvious from the list that the human activity with import of goods over 400 years has made an impact on the mycota of the island. Especially among the corticoid species there are many with a worldwide distribution, this being especially true for those registered on *Pinus* spp, a tree that is extensively planted on the island. Since the genus is ectomycorhizzal it is necessary to bring in the plants in soil to secure that the mycological companions are present. Probably a number of the *Pinus*- connected species have arrived in this way. The same situation is present in Zimbabwe, where it a number of *Pinus* connected species were registered, over 8000 km from the nearest natural *Pinus* forest (Masuka & Ryvarden 1992).
A striking point in the list is the small number of polypores, and the total lack of poroid representatives from the Hymenochaetaceae. From this family only the resupinate *Hymenochaete opaca* was found. Further, no *Stereum* sp. were found. This is remarkable since the genus is so widespread in both South America and Africa and where the basidiocarps are very well adapted to withstand adverse climatic conditions, especially fairly long dry periods.
Only two species, i.e. *Hymenochaete opaca* and *Hypochnicium rickii* have a specific American tropical distribution. The former was described from Jamaica (Leger 1998:205), the latter from Brazil (Hjortstam & Ryvarden 1982) *S. trichilae* is the only species with an exclusive tropical African distribution that was registered on the island.

Acknowledgements
LR deeply acknowledge valuable support from Terrestrial Conservation Officer Lourens Malan from the government of St. Helena. He showed and drove me to suitable places for collecting. Without his enthusiasm the list of species would have been much shorter. Drs. Thomas Læssøe, Copenhagen University, R. Agerer, Botanische Staatssamlung, Münic and Edwin Johanessen, University of Oslo have kindly determined specimens from their own specialist groups, and we are grateful for their help.

References
Ashmole P. & A. 2000: St. Helena and Ascension Island: a natural history. Anthony Nelson, England, 350 pp.
Hjortstam, K. & Ryvarden, L. 1982: Studies in tropical Corticiaceae (Basidiomycetes) IV. Type studies in taxa described by J. Rick. Mycotaxon 15:261-276.
Langer, E. 1994: Die Gattung *Hyphodontia* John Eriksson. Biblio. Mycologia 154:1-298.
Leger, J.-C. 1998: Le genre *Hymenochaete* Léveillé. Biblio. Mycologia 171 :1-319. Masuka, A. & Ryvarden, L. 1992: Aphyllophorales on *Pinus* and *Eucalyptus* in Zimbabwe. Mycotaxon 44: 243-250.
Mellis, J. C. 1875: St. Helena, A physical, Historical and Topographical description of the island, including Geology, Fauna, Flora and Meteorology, L. Reeve & Co, London, 380 pp.

Notes on heterobasidiomycetes of St. Helena

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Abstract
In total, 7 species of heterobasidiomycetes are reported for the first time from St. Helena. A new genus *Dendrogloeon* (*Auricularilaes*) is introduced for the new species *D. helenae* based on both DNA and morphological data. *Saccoblastia media*, sp. nova, is the sole representative of the *Pucciniomycotina*, so far found in the study area.

Introduction
This paper summarizes the first data on heterobasidiomycetes of St. Helena.

Material and methods
Eighteen specimens of heterobasidiomycetes were collected by one of us (LR) in February 2014. They are preserved in herbarium K, with some duplicates in H. Collecting localities are listed in Ryvarden (2015). DNA and morphological methods follow Miettinen et al. (2012).

Species list

Calocera furcata (Fr.) Fr.,
Specimens: LR 49525, 49573, 49457, 49478, 49509.
C. furcata is characterized by sparsely branched, orange basidiocarps and 1–3-septate spores; hyphae are clampless. It is distributed in Europe and Asia (McNabb 1965a, Reid 1974) and evidently prefers gymnosperm hosts. Its presence on St. Helena may be a result of the human-induced introduction.

Dacryopinax spathularia (Schwein.) Martin,
Specimens: LR 49584, 49430, 49456.
D. spathularia is considered as a widely distributed species with spathulate basidiocarps, clampless hyphae and 2-celled mature spores (McNabb 1965b). However, it is possible that it represents a species complex; McNabb (1965b) and Lowy (1971) listed many species names currently regarded as synonyms of *D. spathularia*.

Dendrogloeon Spirin & Miettinen, gen. nov.
Ab genero simile Basidiodenron basidiae magniori et ovoidei differt. Index Fung. No 551113.
Basidiocarps corticioid, arid. Hyphal structure monomitic. Hymenium consists of gloeocystidia, dendrohyphidia and ovoid, four-celled basidia. Basidiospores broadly ellipsoid to subglobose, thin-walled, repetitive. On hardwood; presumably causes a white rot.
Type species: *Dendrogloeon helenae* Spirin, Ryvarden & Miettinen.
The genus is described to encompass the single species, *Dendrogloeon helenae* (see description and discussion below).

Dendrogloeon helenae Spirin, Ryvarden & Miettinen, sp. nova – Fig. 1

Effusus, corticioideus. Systema hypharum monomiticum; hyphae fibulatae. Dendrohyphidia and gloeocystidia adsunt. Basidia ovoideae, 18–27 × 10–13 µm. Basidiosporae lato ellipsoideae vel subglobosae, 8–10.5 × 6.5–8.5 µm. Index Fung. No 551114.
Holotype. St. Helena. Plantation House, on hardwood, 5.II.2014 *Ryvarden 49580* (K, isotype H).
Basidiocarps resupinate, grayish white, tough ceraceous, 0.03–0.05 mm thick, margin indistinct. Hymenial surface smooth, margin not differentiated. Hyphal structure monomitic, hyphae clamped. Subicular hyphae very densely arranged and partly glued together, slightly thick-walled, faintly cyanophilous, 3–4 µm in diam. Tramal / subhymenial hyphae densely arranged, thin-walled, 2–3 µm in diam. Gloeocystidia abundant, narrowly clavate, 22–28 × 5–8 µm (n = 10/1), with brownish, strongly cyanophilous content. Dendrohyphidia abundant, richly dichotomously branched, 1–2.5 µm in diam., embedded or slightly projecting, in some parts apically encrusted by rosette-like or stellate crystals. Basidia obovate, four-celled, (18.3–) 18.4–26.2 (–26.9) × (9.7–) 9.8–12.7 (–13.0) µm, slightly thick-walled (wall 0.3–0.5 µm thick), guttulate, with rather thick and straight, mostly blunt sterigmata up to 11 × 5 µm. Basidiospores broadly ellipsoid to subglobose, thin-walled, (8.1–) 8.3–10.3 (–10.4) × (6.2–) 6.5–8.3 (–9.2) µm, L = 9.23, W = 7.53, Q' = (1.1–) 1.2–1.4 (–1.5), Q = 1.23 (n = 20/1), with large central oil drop, inamyloid, acyanophilous.
D. helenae is so far known only from the type locality. Both nLSU and ITS sequences of this species give no close matches in GenBank. *D. helenae* is undoubtedly a member of the *Auriculariales* but it is very distant from other genera possessing similar morphological characters. The presence of gloeocystidia and almost subglobose spores brings *Basidiodendron* to mind, but species of the latter genus have thin-walled, shorter, broadly urniform or subglobose basidia, which collapse and form involucre-like structures in older basidiocarps (Luck-Allen 1963, Wells & Raitviir 1975). The sole representative of *Bourdotia*, *B. galzinii*, has stalked (petiolate) basidia and a well-developed epihymenial layer consisting of densely arranged hyphidia (Wells & Raitviir 1975, Weiss & Oberwinkler 2001). No gloeocystidiate species are known in *Exidiopsis*; however, the latter genus is highly artificial in morphological terms and certainly polyphyletic.

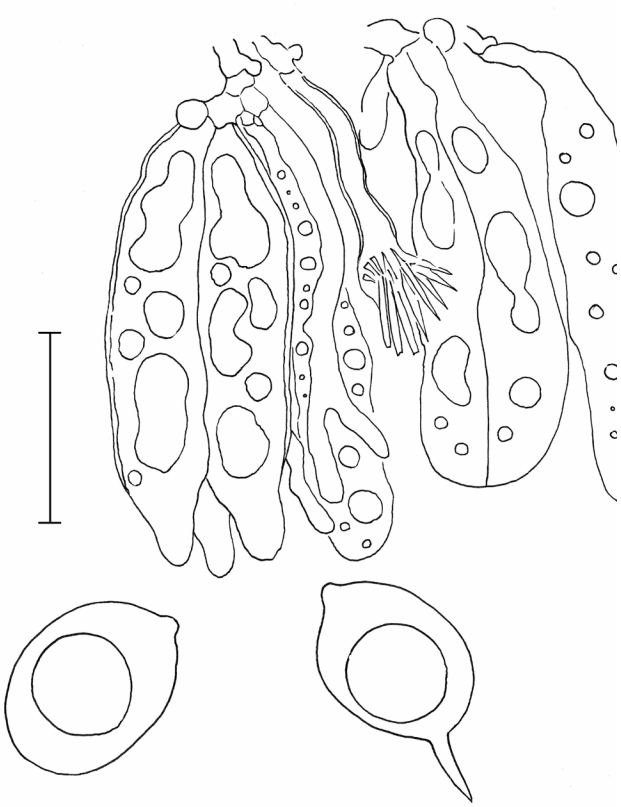

Fig. 1. *Dendrogloeon helenae* (from the holotype): hymenial cells and basidiospores. Scale bar = 10 µm.

Heterochaete inconspicua P. Roberts coll.
Specimens: LR 49514, 49583
Resupinate, grayish, semitranslucent, ceraceous, up to 0.05 mm thick, margin indistinct. Hymenial surface covered by dense, irregularly arranger hyphal pegs ("spines") up to 70 × 60 µm, 8–9 per mm. Hyphal structure monomitic, hyphae clamped, 2.5–3.5 µm in diam., thin- or slightly thick-walled, very densely arranged and abundantly encrusted (mineralized) in hyphal pegs. Cystidia rare, thin- or slightly thick-walled, clavate, up to 30 × 7 µm. Hyphidia present, richly branched, not encrusted, 1–2 µm in diam., embedded or slightly projecting. Basidia globose to obovate, four-celled, 11–13.5 × 9–11 µm (n = 10/1), guttulate, with straight sterigmata up to 10 × 2 µm. Basidiospores thick cylindrical, germinating, (8.8–) 9.5–12.4 (–12.9) × (4.2–) 4.3–5.3 (–5.7) µm, L = 10.99, W = 4.75, Q' = (2.0–) 2.1–2.6 (–2.7), Q = 2.32 (n = 20/1), with oily content, evenly curved (ventral side concave).

H. inconspicua was described from the British Virgin Islands based on a single collection (Roberts 2008). Two of our collections correspond with the original description in all essential details although their spores are slightly longer and wider (9–11 × 3.5–4 µm in the type, Roberts 2008). Further studies are needed for clarifying their conspecificy with *H. inconspiqua* sensu typi.

Heterochaete shearii (Burt) Burt,
Specimens: LR 49412, 49469.

Resupinate, light brownish-gray, arid, up to 0.2 mm thick, margin abrupt. Hymenial surface covered by dense, irregularly arranger hyphal pegs ("spines") 90–120 × 30–50 µm, 6–7 per mm. Hyphal structure monomitic, hyphae clamped, 2–3.5 µm in diam., thick-walled and brownish in subiculum, thin- or only slightly thick-walled and hyaline in trama and subhymenium, densely arranged and glued by brownish substance in hyphal pegs. Crystals occasionally present on hyphal pegs. Cystidia abundant, thin- or slightly thick-walled, clavate, 26–46 × 6.7–8.4 µm. Hyphidia present, sparsely to richly dichotomously branched, 1.5–3 µm in diam., embedded or slightly projecting. Basidia subglobose to broadly ovoid, constantly two-celled, 10–16 × 9–11 µm (n = 10/1), guttulate, with long, straight sterigmata up to 30 × 2–3.5 µm; a few basidia stalked-clavate, up to 30 µm long from the basal clamp. Basidiospores thick cylindrical, germinating, (11.8–) 12.2–16.1 (–16.2) × (5.0–) 5.3–6.5 (–6.6) µm, L = 14.40, W = 5.91, Q' = (2.0–) 2.1–2.7 (–2.8), Q = 2.44 (n = 30/1), with oily content, ventral side concave or rarely almost flat.
H. shearii is recognizable due to arid (non-gelatinized) brownish basidiocarps and two-celled basidia. Our specimens fit well with its descriptions given by Bodman (1952), Lowy (1971) and Roberts (2001). *H. shearii* is a tropical species; it was earlier reported from both North and South America, the Pacific (Bodman 1952, Lowy 1971, Roberts 2003, 2006, 2008), Africa (Cameroon – Roberts 2001) and Azores (Roberts & Spooner 2004).

Saccoblastia media Spirin, Ryvarden & Miettinen, sp. nova – Fig. 2
S. sphaerosporae similis, sed cystidiis hyphoideis obtusis vel acutatis et sporis ellipsoideis 8.2–11 × 6.3–8.2 µm. Index Fung.. No 551115.
Holotype. St. Helena. Scotland Research Station, on hardwood, 3.II.2014 *Ryvarden 49436* (K, isotype H).
Basidiocarps resupinate, cream-colored, hypochnoid, covering several cm, up to 0.3 mm thick, margin pruinose. Hymenial surface smooth. Hyphal structure monomitic, hyphae clamped. Subicular hyphae loosely arranged, slightly thick-walled (wall up to 1 µm), fainly cyanophilous, (5.8–) 6.8–8.7 (–9.0) µm in diam. (n = 10/1). Tramal / subhymenial hyphae thin-walled, easily collapsing, 4–7 µm in diam. Cystidia long, hyphoid with obtuse or sharpened apex, 52–113 × 6.3–7.9 µm (n = 10/1), slightly thick-walled (wall up to 0.5 µm thick). Basidia with oil droplets; probasidia bladder-shaped, 16–23 × 7.2–10.7 µm (n = 10/1), metabasidia narrowly cylindrical, 4-celled, 41–76 × 5.3–7.0 µm (n = 10/1), with short and rather sharp sterigmata 4.5–6 × 1.5–2 µm; sterigmata of the last cell almost apical. Basidiospores ellipsoid to broadly ellipsoid, some clearly tapering to the apiculus,

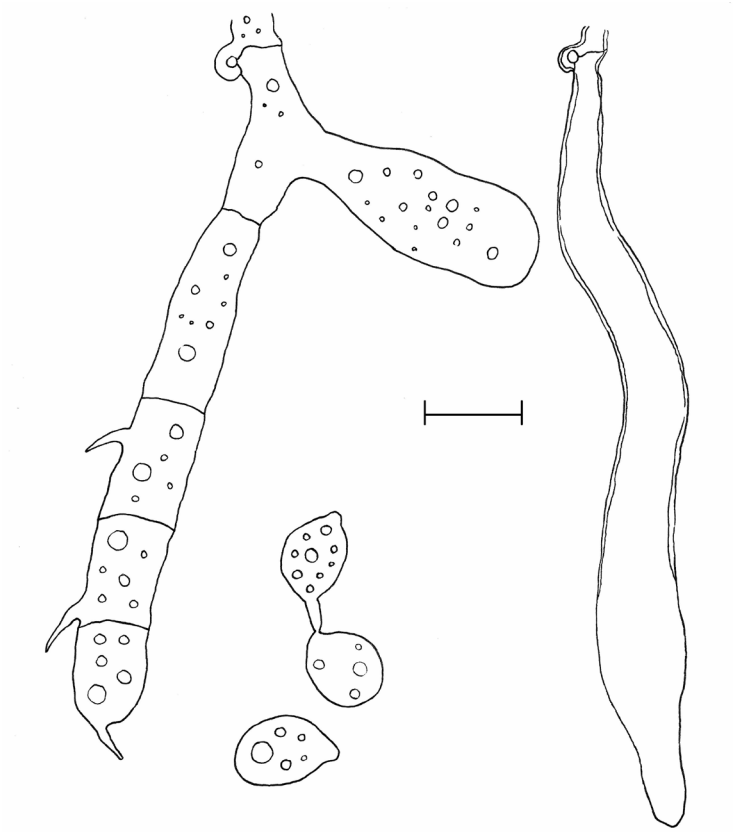

Fig. 2. *Saccoblastia media* (from the holotype): basidia, basidiospores, cystidia. Scale bar = 10 μm.

(8.1–) 8.2–11.0 (–11.1) × (6.2–) 6.3–8.2 (–9.0) μm, L = 9.66, W = 7.28, Q' = (1.2–) 1.3–1.5 (–1.6), Q = 1.33 (n = 30/1), with oily content, apiculus thick and blunt, up to 1 × 3 μm. *S. media* is so far known from the type locality. Morphologically, the most similar species is the lectotype of *Saccoblastia*, *S. sphaerospora* A. Möller (selected by Kisimova-Horovitz et al. 2000). The latter species lacks cystidia and its spores are globose and smaller (6–8 μm in diam. – Lowy 1971). *Helicogloea variabilis* from Brazil (Wells 1990) and *H. globispora* from Taiwan (Wu & Chen 2000) have spores of the same size as *S. media* but they both are acystidiate species; moreover, *H. variablis* possesses no clamps. Donk (1966) and Jülich (1976) considered *Saccoblastia* as a genus different from *Helicogloea* (the opposite view was presented by Baker 1936 and, partly, by Lowy 1971); however, the morphological differences are rather subtle (see Kirschner 2004 for further

comments). We address our new species to *Saccoblastia* based on such morphological characters as floccose basidiocarps and a presence of clamps. However, recent DNA-based studies of the *Atractiellomycetes* (*Pucciniomycotina*) (Bauer et al. 2006, Aime et al. 2006) revealed that the generic division in this group is much more complicated and should be completely reconsidered.

Stypella glaira (Lloyd) Roberts coll.
Specimens: LR 49417, 49418, 49594.
Resupinate, semitranslucent, very thin (ca. 0.02 – 0.03 mm thick) and almost invisible by the naked eye. Hymenial surface smooth or covered by scattered tubercles or spines. Hyphal structure monomitic, hyphae clamped, 1.5–2 µm in diam., thin-walled. Cystidia absent. Hyphidia few, simple or scarcely branched, 1–1.5 µm in diam. Basidia pedunculate (myxarioid), 4-celled, basal part stalk-shaped, 3–8 µm long, apical part ovoid to subglobose, 8–11 × 7–9 µm (n = 10/1), guttulate, with short sterigmata up to 7 × 2.5 µm. Basidiospores broadly ellipsoid to subglobose, (5.1–) 5.2–7.1 (–7.2) × (4.1–) 4.2–5.5 (–5.8) µm, L = 5.97, W = 4.82, Q' = (1.1–) 1.2–1.4 (–1.5), Q = 1.24 (n = 30/1), with a large central oil drop, ventral side more or less disctinctly convex.
The three specimens citec above possess identical morphological features which put them in the vicinity of *S. glaira* from the northern hemisphere. The latter species has a long list of synonyms and its spore variation is wide (Roberts 1998).

References

Aime C.M., Matheny P.B., Henk D.A., Frieders E.M., Nilsson R.H., Piepenbring M., McLaughlin D.J., Szabo L.J., Begerow D., Sampaio J.P., Bauer R., Weiss M., Oberwinkler F. & Hibbett D.
2006: An overview of the higher-level classification of *Pucciniomycotina* based on combined analyses of nuclear large and small subunit rDNA sequences. – Mycologia 98: 896–905.
Baker G.E. 1936: A study of genus *Helicogloea*. – Ann. Missouri Bot. Gdn. 23: 69–129.
Bauer R., Begerow D., Sampaio J.P., Weiss M. & Oberwinkler F. 2006: The simple-septate basidiomycetes: a synopsis. – Mycol. Progress 5: 41–66.
Bodman M.C. 1952: A taxonomic study of the genus *Heterochaete*. – Lloydia 15: 193–233.
Donk M.A. 1966: Check list of European Hymenomycetous Heterobasidiae. – Persoonia 4: 145–335.
Jülich W. 1976: Zur Morphologie von *Saccoblastia pinicola* and *S. sebacea*. – Persoonia 9: 39–48.
Kirschner R. 2004: Sporodochial anamorphs of species of *Helicogloea*. – In: Agerer R. et al. (eds.).
Frontiers in Basidiomycote Mycology. Eching, IHW-Verlag. P. 165–178.
Kisimova-Horovitz L., Oberwinkler F. & Gómez L.D. 2000: Basidiomicetos resupinados de Costa
Rica. Especies nuevas o raras de *Atractiellales* (*Auriculariales* s.l.), *Exidiaceae*, *Sirobasidiaceae* y *Tremellaceae*. – Revista de Biología Tropical 48: 539–554.
Lowy B. 1971: *Tremellales*. – Flora Neotropica 6: 1–154.

Luck-Allen E.R. 1963: The genus *Basidiodendron*. – Canadian J. Bot. 41: 1025–1052.
McNabb R.F.R. 1965a: Taxonomic studies in *Dacrymycetaceae*. 2. *Calocera* (Fries) Fries. New Zealand J. Bot. 3: 31–58.
McNabb R.F.R. 1965b: Taxonomic studies in *Dacrymycetaceae*. 3. *Dacryopinax* Martin. – New Zealand J. Bot. 3: 59–72.
Miettinen O., Spirin **V**. & Niemelä T. 2012. Notes on the genus *Aporpium* (*Auriculariales, Basidiomycota*), with a new species from temperate Europe. – Ann. Bot. Fennici 49: 359–368.
Reid D.A. 1974: A monograph of the British *Dacrymycetales*. – Trans. British Mycol. Soc. 62: 433–494.
Roberts P. 1998: A revision of the genera *Heterochaetella*, *Myxarium*, *Protodontia*, and *Stypella* (Heterobasidiomycetes). – Mycotaxon 69: 209–248.
Roberts P. 2001: Heterobasidiomycetes from Korup National Park, Cameroon. – Kew Bull. 56: 163–187.
Roberts P. 2003: Caribbean Heterobasidiomycetes. 1. Dominican Republic. – Mycotaxon 87: 187–201.
Roberts P. 2006: Caribbean Heterobasidiomycetes. 2. Jamaica. – Mycotaxon 96: 83–107.
Roberts P. 2008: Caribbean Heterobasidiomycetes. 3. British Virgin Islands. – Mycotaxon 105: 137–147.
Roberts P. & Spooner B.M. 2004: Heterobasidiomycetes from the Azores. – Kew Bull. 59: 95–101.
Ryvarden L. 2015: Some basidiomycetes from St. Helena. –Synopsis Fung. 33:
Weiss M. & Oberwinkler F. 2001: Phylogenetic relationships in *Auriculariales* and related groups – hypotheses derived from nuclear ribosomal DNA sequences. – Mycol. Res. 105: 403–415.
Wells K. 1990: An undescribed species of *Helicogloea* from Brazil. – Mycol. Res. 94: 835–839.
Wells K. & Raitviir A. 1975: The species of *Bourdotia* and *Basidiodendron* (*Tremellaceae*) of the USSR. – Mycologia 67: 904–922.
Wu S.H. & Chen Z.C. 2000: *Helicogloea globispora* sp. nova from Taiwan. – Karstenia 40: 195–196.

Studies in Neotropical polypores 39
Trametes alba nova species

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Abstract
Trametes alba nova species is described and a key to the genus in the Neotropics is provided. The combination *Trametes psila* (Lloyd) Ryvarden is proposed.

Introduction
For many years an unknown polypore from Brazil has rested on my desk hoping that one day I should be able to unravel its identity. Even if several people with experience from the South American forests have examined it, nobody had a name to suggest. Thus, I felt that 10 years dormancy was sufficient, and to bring the taxon into circulation, a new species is described.

Trametes alba Ryvarden nov. sp.
Holotype: Brazil, State of Alagoas, Pilar municipality, Reserva Fazenda Sao Pedro, 11 February 2004, Ryvarden 46462 in the Fungarium at O, isotype in the Fungarium at URM Index Fungorum 551112.
Basidiocarps annual dimidiate with contracted base approximately 1 cm in diameter, or almost circular in outline, 8 cm wide and 11 cm long and 1 cm thick at base, dense and hard, pileus pure white, glabrous, slightly sulcate, margin sharp, pore surface deep cinnamon with a 2-3 mm wide sterile cinnamon coloured margin, pores sinuous-daedaleoid, 1-2 per mm measured tangentially, tubes slightly paler than pore surface, up to 3 mm deep, context deep cinnamon, dense and without zonation.
Hyphal system trimitic; generative hyphae hyaline, thin-walled, with clamps, 2-4 µm wide; skeletal hyphae dominating, yellow to golden, thick-walled to solid, 3-7 µm in diameter; binding hyphae hyaline to pale yellow, thick-walled, up to 5 µm wide, irregularly branched.
Cystidia not present, but binding hyphae project into the hymenium and may easily be interpreted as acute cystidia until a section is squashed and their hyphal nature is revealed.
Basidia clavate, 4-sterigmate, 8-15 x 4-6 µm, with a basal clamp.
Basidiospores 5-7 x 2-3 µm, cylindrical al oblong ellipsoid, hyaline, IKI-,
Substrata. Unknown hard wood tree.
Distribution. Known only from the type locality.
Remarks. This is a striking species with the pure white, sulcate and glabrous upper surface, the cinnamon colour of the pore surface and context, besides the irregular sinuous to daedaleoid pores. In the latter aspect it is identical with the pore surface in many specimens of the widespread and common *Trametes elegans*. This species has however, much lighter coloured pore surface, tubes and context.

Key to Neotropical *Trametes* species

Main key

1.Context white, cream to pale olivaceous **Key A**
1.Context cinnamon to deep brown **Key B**

Key A

1. Pores 1-3 per mm or larger, regular, lamellate, daedaleoid, semi-labyrinthine or lacerate to almost hydnoid **2**
1. Pores 3-8 per mm, round to angular, more or less entire **6**

2. Upper surface more or less glabrous **3**
2. Upper surface hirsute to hispid **4**

3. Hymenophore often lamellate or pores sinuous to daedaleoid in parts, cystidia absent ..... **T. elegans**
3. Pores angular 1-4 mm wide, finely encrusted cystidia present ..... **T. cystidiata**

4. Basidiocarps thin and flexible, rarely above 3 mm thick ..... **T. villosa**
4. Basidiocarps hard and rigid, up to 15 mm thick **5**

5. Context duplex with a distinct black zone, at least close to the base; hymenophore split and almost hydnoid, spores 4.5-5.5 um long ..... **T. maxima**
5. Context homogenous to duplex, but lacking a black zone; hymenophore regular, to slightly daedaleoid, about 1 mm wide spores 7-9 um long ..... **T. cervina**

6. Pileus hirsute to tomentose; context duplex, often with a black line between tomentum and context, at least close to the base **7**
6. Pileus adpressed velutinate and dull to subshiny or soon becoming glabrous except for margin; context homogeneous although a cuticle may develop from the base with age... **10**

7. Pileus multizonate, often in different colours as tomentose and glabrous zones are alternating; pore surface white becoming pale tan with age..... **T. versicolor**
7. Pileus azonate or with zones in different colours of white to ochraceous **8**

8. Basidiocarps up to 1 cm wide and long, pores tiny, regular, spores cylindrical 6-8 x 2.8-3.5 µm ..... **T. minuta**
8. Basidiocarps usually larger, spores ellipsoid to short cylindrical al, up to 6 µm long ... **9**

9. Pileus hirsute to tomentose, pores angular, often slightly elongated radially; spores ellipsoid, 5-6 x 3-4 µm ..... **T. pavonia**
9. Pileus finely adpressed velutinate, becoming almost glabrous with age, white, pale tan or pale cinnamon; pores round to regular; spores cylindrical 4.5-6 x 2-2.5 µm ..... **T. membranacea**

10. Pores 1-3 per mm **11**
10. Pores 4-7 per mm **12**

11. Spores 10-15 µm long, skeletal hyphae dextrinoid ..... **T. frustrata**
11. Spores 4-7 µm long, skeletal hyphae non dextrinoid ..... **T. lactinea**

12. Dark reddish, brown or blackish cuticle spreading from the base **13**
12. No cuticle spreading form the base, upper surface white, ochraceous becoming unevenly pale brown with age **15**

13. Upper surface becoming greyish and black from base ..... **T. cingulata**
13. Upper surface becoming tan, brown to reddish from base or in zones 14

14. Upper surface usually zonate with variable colours in brown shades, not pointed hyphal ends in the hymenium ..... **T. ectypus**
14. Upper surface azonate, becoming reddish from the base, sharply pointed hyphal ends in the hymenium ..... **T. cubensis**

15. Context pale pinkish to cafe au lait, red to brownish with KOH fading to dark spot **16**
16. Context white to ochraceous or cork coloured **17**

16. Basidiome flat and flexible, upper surface soft velvety to glabrous in zones spores 1.5-2 µm wide ..... **T. modesta**
16. Basidiome elongated semicircular, 5-20 mm thick, upper surface azonate and glabrous, spores 2.5-3 µm wide ..... **T. roseola**

17. Pores 3-4 per mm, often slightly irregular, spores cylindrical **18**
17. Pores 4-5 per mm, more or less round, spores ellipsoid **19**

18. Basidiome effused reflexed, pileus flexible and papery thin, spores 7-10 µm long ..... **T. cotonea**
18. Basidiome single, sessile to dimidiate, tough, up to 6 mm thick, spores 6-7 µm long ..... **T. marianna**

19. Pore surface even, spores 3-4 x 2.5-3 µm ..... **T. ellipsospora**
19. Pore surface uneven, rigid and crested, spores not known ..... **T. ochroflava**

Key B

1. Basidiocarps thin and pliable, individual pilei rarely above 3 mm thick, upper surface ochraceous to pale cinnamon **2**
1. Basidiocarps thicker, coriaceous to tough, usually thicker than 3 mm, upper surface white reddish, yellowish to greyish brown **3**

2. Pores 5-6 mm, upper surface soft velutinate adpressed, spores 4.5-6 µm wide ..... **T. byrsina**
2. Pores 2-4 per mm, upper surface tomentose to hirsute, spores 2.5-4 µm wide ... **T. rigida**

3. Upper surface reddish brown, glabrous to finely scrupose or with scattered erect often forked hairs, basidiocarp stiff and hard..... **4**
3. Upper surface pale brown to greyish brown, tomentose to hirsute, basidiocarp coriaceous, pores angular to round, basidiocarp rarely above 1 cm thick **6**

4. Pileus white, sulcate and glabrous, context cinnamon, pores irregular ..... **T. alba.**
4. Pileus reddish to umber brown, glabrous to scrupose or unevenly tomentose 5

5. Upper surface glabrous, usually smooth with exception of the base, reddish brown in narrow zones, often subshiny, pores 6-7 per mm, almost invisible to the naked eye ..... **T. hostmannii**
5. Upper surface scrupose to tomentose, often in tufts , reddish brown to umber brown, dull, pores 3-4 per mm ..... **T. aspera**

6 Pileus covered with a dense mat of intertwined brown hairs, up to 1 cm thick..... **T. psila**
Ryvarden comb nov. Basionym *Fomes psila* Lloyd, Mycol. Writ. 4 (Syn. gen. *Fomes*): p.233, 1915, Index Fung. No 551117
6. Pileus tomentose to hirsute in yellowish to umber brown colours **7**

7. Pileus greydark brown, context dark brown, pore surface mostly pale brown and with a distinct bluish pruina..... **T. floccosa**
7. Pileus, tubes and context golden brown to dark ochraceous, pore surface evenly yellowish brown to pale brown..... **T. polyzona**

Studies in Neotropical polypores 40
A note on the genus *Grammothele*

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Abstract
The genus *Grammothele* is revised for tropical America, and *G. brasilense* Ryvarden, *G. lacticolor* Ryvarden and *G. venezuelica* Ryvarden are described as new species. A key to the genus in America is provided.

Introduction
Grammothele, typified by *G. lineata* Berk. & M. A. Curtis, includes resupinate wood-inhabiting basidiomycetes, out of which have very thin and strongly adherent basidiocarps with shallow pores. On sight, they remind one of corticoid species except for the poroid hymenophore, and in most examined specimens, the hymenium is restricted to the bottom of the pores. Thus, they give an impression of having evolved from corticoid species where the pore walls more function as a protection for the hymenium in the bottom, more than being a place for spore production. DNA sequencing has shown that, at least the type species, is related to *Epithele*, a corticoid genus characterized by sterile hyphal pegs. One may suggest that they act as defense against grazing by mites and insects in the same way as the sterile pore walls in *Grammothele.*
The genus slept in oblivion for a long time until Lowe (1961) revised the genus with emphasis on the North American species. Ryvarden (1979) provided a general survey of *Porogramme* and related genera based on type studies in an effort to clarify the relationship between them. Reck, M, Silveira, A, & Borges, R. M (2009) reported three species of *Grammothele*, all well known, from Southern Brazil. Zhou, L. W & Dai, Y. C. (2012) revised the genus based on Chinese collections besides provided a worldwide key based on literature studies.
Recently Karasiński (2015) described a new species from Bolivia related to *G. fuligo*.
Over years I have accumulated a number of *Grammothele* species from tropical America, and an recent examination of them revealed the presence of three new species which are described in the following.

Grammothele Berk. & M. A. Curtis,
J. Linn. Soc. Bot. 10:327, 1868.
Basidiocarps annual, resupinate, adnate, effused, up to 2 mm thick, but usually thinner, hymenial surface irregularly irpicoid to poroid and then partly labyrinthine to sinuous, pore surface variable white, pinkish white grey, bluish-grey to almost black with age or time pale brownish pinkish to pale umber brown as the skeletal hyphae becomes coloured, in some species the skeletal hyphae are agglutinated as bundles and then the pore surface becomes dotted with darker spots on an otherwise lighter surface, hymenium restricted to

the horizontal basal parts of the pores and slightly down the vertical walls, context light and thin.
Hyphal system dimitic, generative hyphae with clamps, skeletal hyphae thick-walled to solid, dextrinoid at least in the outer parts, in some species more or less hyaline throughout the life span of the basidiocarps, in other species first hyaline and then darker with age and in some species coloured from the very beginning. Dendrohyphidia absent or present, both in the hymenium and in the dissepiments and the sterile tube walls, spores ellipsoid to cylindrical, thin -walled, smooth and non-amyloid. On hard woods and monocotyledons. Tropical genus.
Type species: *Grammothele lineata* Berk. & M. A. Curtis.
Remarks. The genus is related to *Porogramme* which is separated by being monomitic.

Key to species

1. Pore surface bluish to black, on monocotyledons, spores 7-11 µm long..... **2**
1. Pore surface cream to pale umber brown, spores shorter than 7 µm **3**

2. Pores 7-9 per mm or less, spores 7-9 x 2.5-3.5 µm .....**G. fuligo**
2. Pores (3)4-5 per mm, spores 8.4-11 x 6-7.5 µm ..... **G. bolivianus**

3, Spores cylindrical..... **4**
3. Spores ellipsoid **5**

4. Pore surface whitish silvery to pink or pale violet, pores 8-10 per mm, skeletal hyphae dextrinoid .....**G. subargentea**
4. Pore surface white to cream, pores 2-4 per mm, slightly irregular, skeletal hyphae non dextrinoid ..... **G. hondueren sis**

5. Pores tiny, 8-10 per mm, skeletal hyphae not in bundles ..... **G. venezuelica**
5. Pores irregular 2-4 per mm, skeletal hyphae often agglutinated in bundles **6**

6. Pore surface white with numerous hyphal pegs along the dissepiments .....**G. lacticolor**
6. Pore surface grey to isabelline, hyphal pegs few or absent along the dissepiments **7**

7. Pore surface almost hydnoid, pores 2-4 per mm, bundles of skeletal hyphae almost smooth, spores subcylindrical 4-6 x 1.5-2.5 µm..... **G. lineata**
7. Pore surface slightly irregular, 5-6 per mm, bundles of skeletal hyphae strongly encrusted simulating large metuloid cystidia, spores ellipsoid, 5-6 x 2.5-3 µm .....**G. brasilense**

Description of species

Grammothele bolivianus Karasiński,
Nova Hedwigia 17 Feb. DOI: **http://dx.doi.org/10.1127/nova hedwigia/2015/0251.**
Basidiocarps annual, resupinate, closely adnate, inseparable, at first as small, circular or irregular patches, becoming confluent with age in linear areas up to 10 × 2.5 cm, up to 250 µm thick. Pore surface gray, bluish gray to light reddish gray, margin white, 2–6 mm wide, pores shallow, up to 200 µm thick, dissepiments entirely covered with white tiny white crystal (3–) 4–5 per 1 mm, angular, often pentagonal or hexagonal, trama and subiculum brownish, bottom of pores white, taste mild.
Hyphal system trimitic, generative hyphae with clamps, 1.5–2.5 µm wide. skeletal hyphae 1.5–3.5 µm wide, thick-walled with narrow lumen to almost solid, yellowish, yellow brown to brown in KOH, dextrinoid, dominant in subiculum and trama of tubes; binding hyphae abundant at sterile margin and often present in subhymenium, and also in substrate under basidiocarps, delicate, frequently branched, especially at right angles, up to 1.5 µm wide without reaction in Melzer's reagent.
Dendrohyphidia present and easy to observe in young hymenia, in old basidiocarps present almost only on the dissepiment edges and not numerous, up to 45 µm long, sparsely branched at apex, thin-walled, with a stalk up to 3 µm wide, hyaline, with basal clamp, hymenium present only at the bottom of the tubes.
Basidia 22–33 × 8–10 µm, clavate to subcylindrical, sometimes with a slight median constriction, tetrasterigmatic.
Basidiospores 8.4–11 x 6–7.5 µm, broadly ellipsoidal to ovate, slightly tapering towards distinct apiculus, thin-walled, smooth, hyaline, no reaction in Melzer´s reagent.
Substrate. On dead, still attached frond midrib of spiny palm**.**
Distribution. Known only from type locality**.**
Remarks. This species is separated from the similar *G. fuligo*, also frequently occurring on palms, by larger pores and spores.

Grammothele brasilensis Ryvarden nov. sp.
Holotype: Brazil, Sao Paulo State, Parque Estado Fontes de Ipiranga, 16. February 1987, L. Ryvarden 24115 (O), isotype in K and SP. Index Fung. No 551109.
Basidiocarps resupinate widely effused, strongly adnate, hard and brittle, margin narrow and white, pore surface dark grey, pores round and entire with a few exceptions, 5-6 per mm, dissepiments with white irregular crystals (lens), tubes shallow, up to 200 µm deep, tube walls greyish under a lens, hymenium restricted to the bases of the tubes, context white, very thin to invisible.
Hyphal system dimitic, generative hyphae hyaline and with clamps, 2-4 µm wide, clamps difficult to observe due to numerous crystals and agglutinated hyphae, skeletal hyphae present as brown bundles of strongly agglutinated hyphae, these bundles easily seen in microscopical sections as pointed bodies scattered through the section, in many cases covered with crystals and thus simulating very large metuloide cystidia dextrinoid in Melzer's reagent, 3-6 µm in diameter.
Dendrohyphidia not seen, but their presences should be looked for in the dissepiments.

Cystidia none, but sterile hyphal ends occur in the hymenium, simulating narrow and cylindrical cystidiols.
Basidia 15-17 x 4-6 µm, clavate, tetrasterigmatic.
Basidiospores 5-6 x 2.5-3 µm cylindrical, hyaline, thin-walled, smooth and non-amyloid.
Substrata. On dead hardwood.
Distribution. Known only from the type locality.
Remarks. The even grey colour and he entire and regular round pores make his to a distinct species.

Grammothele fuligo (Berk. & Broome) Ryvarden,
Trans. Br. Mycol. Soc. 73:15, 1979. - *Polyporus fuligo* Berk. & Broome, J. Linn. Soc. Bot. 14:53, 1875.
Basidiocarps resupinate widely effused, strongly adnate, hard and brittle, margin wide to narrow, bluish white when fresh, pore surface bluish white, grey or glaucous, darkening with age to almost black, pores angular, thin-walled and entire, 8-16 per mm, tubes shallow, up to 400 µm deep, variable from specimen to specimen, tube walls whitish under a lens, but trama dark brown, hymenium restricted to the bases of the tubes, context dark brown and very thin.
Hyphal system trimitic, generative hyphae hyaline and with clamps, 2-4 µm wide, skeletal hyphae dominating in context and sterile tube-walls, thick-walled to solid, olivaceous light brown in KOH, dextrinoid in Melzer's reagent, 3-6 µm in diameter, unbranched or rarely with short side branches.
Dendrohyphidia present, especially along the pore edges, arising from generative hyphae, moderately to strongly branched towards the apices, also observed along the sterile walls of the pores.
Cystidia none, but sterile hyphal ends often occur in the hymenium, simulating narrow and cylindrical cystidia.
Basidia clavate, 20-25 x 4-7 µm, tetrasterigmatic with large curved sterigmata, up to 6 µm long.
Basidiospores 7-9 x 2.5-3.5 µm, cylindrical to slightly allantoid, hyaline, thin-walled, smooth and non-amyloid.
Substrata. Restricted to monocotyledons and especially common on palms, but also registered on bamboo.
Distribution. Pantropical species and quite common when the right habitats are examined, such as old palm leaves etc.
Remarks. The species is usually easy to recognize in the field because of the special habitat and the glaucous to blackish colour. It does not redden the substrate as *Porogramme albocincta* with which it has often been confused and which grows on hard wood.

Grammotele hondurensis (Murrill) Ryvarden**,**
Mycotaxon 23:185, 1985 , 2000. - *Poria hondurensis* Murrill, Mycologia 12:303, 1920.
Basidiocarps resupinate, up to 2 mm thick, adnate, brittle when dry, margin narrow, white to cream, pore surface white, pores angular, in parts irregular and slightly incised, 2-4 per mm, in parts with hyphal pegs, some as hydnoid protuberances, others as an initial

development of partition walls, tube layer concolorous with pores, up to 2 mm thick, subiculum very thin and white.
Hyphal system dimitic, generative hyphae hyaline, with clamps, 2-3 µm wide, skeletal hyphae predominant, solid to thick-walled, hyaline, negative in Melzer's reagent, 2-3 µm in diam. often mixed with coarse crystalline matter.
Cystidia and other sterile hymenial elements absent.
Dendrohyphidia present, both along the dissepiments where they are abundant and prominent, and among the basidia where they are smaller and with fewer apical protuberances.
Basidia 10-15 x 5-6 µm with basal clamps and 4 sterigmata, in the type also observed with 2 sterigmata.
Basidiospores 5-8 x 3-3.5 µm, oblong ellipsoid to cylindrical.
Substrate. On dead hardwoods.
Distribution. Puerto Rico, French Guyana and Honduras (type locality), but has certainly a wider distribution in Central and South America.
Remarks. The species is microscopically separated by having larger spores than the other species in the genus.

Grammothele lacticolor Ryvarden nov. sp.
Holotype: Puerto Rico, Municipio Isabella, Quebradillas, near Parador Guajataca, 27 June 1996, on dead hard wood, Ryvarden 39129, in Fungarium Oslo University (O), isotype in NY. Index Fung. No 551110.
Basidiocarps resupinate, effused, strongly adnate, hard and brittle, margin narrow and white, pore surface pure white, pores slightly irregular, some pores sinuous and split to plates, other more or less round, 3-4 per mm, densely covered with white hyphal pegs, especially along the dissepiments, tubes white, up to 2 mm deep, context very thin, white, substrate with distinct reddish line or zones.
Hyphal system dimitic, generative hyphae hyaline and with clamps, 2-5 µm wide, skeletal hyphae present as hyaline, pointed bundles of strongly agglutinated hyphae in the trama ending in the dissepiments, up to 100 µm long, weakly dextrinoid.
Dendrohyphidia numerous along the dissepiments, up to 40 µm long.
Cystidia none, although a superficial examination take the agglutinated bundles of skeletal hyphae as cystidia.
Basidia 15-20 x 5-6 µm, clavate, tetrasterigmatic.
Basidiospores 3-4 x 2-2.5 µm ellipsoid, hyaline, thin-walled, smooth and non-amyloid.
Substrata. On dead hardwood.
Distribution. Puerto Rica, Costa Rica and Jamaica.
Remarks. The pure white colour, the numerous white hyphal pegs covering the dissepiments and the small spores characterize this species. *G. lineata* usually has more distinct hydnoid hymenophore and becomes often distinctly greyish by age and its spores are longer.

Grammothele lineata Berk. & M. A. Curtis,
Jour. Linn. Soc. 10:327, 1868.

Basidiocarps adnate, effused, up to 1 mm thick, but frequently only 200-400 µm thick, margin white to pale pinkish, pore surface first white to greyish, later pinkish, pale cocoa or sordid grey, the colour change occurs as the skeletal hyphae become tinted or coloured especially those in hyphal pegs and then the pore surface becomes dotted with dark spots with age, especially along the dissepiments, more scattered on the vertical, sterile tube walls where these bundles often project as hyphal pegs, tubes shallow, angular (1)2-4 per mm, often irregular and the walls first occur as irregular plates or teeth which later merge to a more or less poroid pattern where, however, there usually are numerous pores which are incomplete as there are narrow passages from one pore to another, hymenium whitish and restricted to the base of the pores, subiculum very thin, whitish to pinkish, with age becoming dark and resinous.
Hyphal system trimitic, generative hyphae thin-walled and with clamps, 1.5-2.5 µm wide, skeletal hyphae thick-walled to solid, 1.0-2.5 µm wide, first hyaline, with age becoming tinted in shades of brown, darkening in KOH and with a distinct dextrinoid reaction.
Dendrohyphidia richly present, hyaline and irregularly branched at the top, difficult to find in old specimens, in the hymenium up to 35 µm long, in the dissepiments and on the vertical walls apparently arising at the end of branched generative hyphae.
Basidia 12-18 µm long clavate and tetrasterigmatic.
Basidiospores 4.5-6 x 1.5-2.5 µm, ellipsoid, hyaline, thin-walled and non-amyloid.
Substrata. On hard wood of many kinds.
Distribution. Described form Cuba and has a wide distribution in the Caribbean area. Previously the name was used for almost all dimitic specimens with a *Grammothele*- like appearance. Thus, the names cited in the literature should be treated with caution.
Remarks. The partly hydnoid surface with dots of numerous dark bundles of skeletal hyphae is distinct in this species.

Grammothele subargentea (Speg.) Rachjenb.,
Mycotaxon 17:280, 1973. - *Poria subargentea* Speg. Rev. Arg. Hist. Nat. 1:104, 1891. - *Poria pavonia* Bres., Hedwigia 35:282, 1896.
Basidiocarps resupinate widely effused, strongly adnate, hard and brittle, margin wide to narrow, pale violet, pore surface very pale violet to pale buff, pores angular, thin-walled and entire, 8-16 per mm, tubes shallow, up to 400 µm deep, variable from specimen to specimen, tube walls whitish under a lens, hymenium restricted to the bases of the tubes, context dark brown and very thin.
Hyphal system dimitic, generative hyphae hyaline and with clamps, 2-4 µm wide, skeletal hyphae dominating in context and sterile tube-walls, thick-walled to solid, olivaceous light brown in KOH, dextrinoid in Melzer's reagent, 3-6 µm in diameter.
Dendrohyphidia present, especially along the pore edges, arising from generative hyphae, moderately to strongly branched towards the apices, also observed along the sterile walls of the pores.
Cystidia none, but sterile hyphal ends often occur in the hymenium, simulating narrow and cylindrical cystidia.
Basidia clavate, 20-25 x 4-7 µm with four large curved sterigmata, up to 6 µm long.
Basidiospores 5.2-8.3 x 2.6-3.1 µm cylindrical, hyaline, thin-walled, smooth and non-amyloid.

Substrata. On different hardwoods.
Distribution. From Costa Rica to Argentina, but not common.
Remarks. The species is usually easy to recognize in the field because of the silvery whitish to pale pinkish pore surface. In a few specimens there is a very thin reddish line in the substrate, but this is not visible or present in all specimens seen by me.

Grammothele venezuelica Ryvarden nov. sp.
Holotype: Venezuela, Eastado Aruga, Choroni, on dead hard wood, 5. February 2006. Ryvarden 47370 (O) (isotype in NY). Index Fung. No 551111.
Basidiocarps resupinate widely effused, strongly adnate, hard and brittle, up to 250 mm thick, margin narrow to almost lacking, pale isabelline, pore surface, grey to deep isabelline reflecting he colour of the pore bottoms, pores angular, thin-walled and entire, 8-10 per mm and with a white edge (lens), tubes shallow, up to 100 µm deep, hymenial surface at bottom grey, context whitish almost invisible in parts. Distinct red zones in the substrate.
Hyphal system dimitic, generative hyphae hyaline and with clamps, 2-4 µm wide, skeletal hyphae dominating in context and sterile tube-walls, thick-walled to solid and strongly encrusted in agglutinated structures, hyaline and without reaction in Melzer's reagent, 3-6 µm in diameter.
Dendrohyphidia present but not common along the pore edges, arising from generative hyphae, moderately to strongly branched towards the apices.
Cystidia none, but sterile hyphal ends strongly encrusted are present along the dissepiments and in places they simulate narrow and cylindrical cystidia.
Basidia clavate, 20-25 x 4-7 µm, tetrasterigmatic.
Basidiospores 3-3.5 x 5-5.5 µm, ellipsoid, hyaline, thin-walled, smooth and non-amyloid.
Substrata. On dead hard woods.
Distribution. Known only from the type locality
Remarks. The strongly encrusted non dextrinoid skeletal hyphae characterize this species. It may remind one of *Porogramme albocincta* which also grows on hard wood and develop a distinct red zone in the substrate. However, this species has an almost black basidiocarp and a monomitic hyphal structure.

References
Karasiński D., 2015: A new species of plam-associated *Grammothele* (Basidiocmycota, Polyporales) from Bolivia. publ. on line 17. February 2015. DOI: http://dx.doi.org/10.1127/nova_hedwigia/2015/0251
Lowe, J. L. 1961: The genera *Grammothele* and *Porogramme*. Papers Michigan Acad. Scienc. Arts, Letters. 49:27-40.
Reck, Mateus A.; da Silveira, A & Borges, R. 2009: *Grammothele* species from southern Brazil, Mycotaxon 109: 361-372.
Ryvarden, L. 1979: *Porogramme* and related genera. Trans. Br. Mycol. Soc. 73: 9-19.
Zhou, L.-W. & Dai, Y.-C. 2012 : Wood-inhabiting fungi in southern China 5. New species of *Theleporus* and *Grammothele* (Polyporales, Basidiomycota), Mycologia 104:915-24.

Studies in *Perenniporia* s.l. African taxa IX: *Perenniporia vanhullii sp. nov.* from open woodlands.

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Abstract
Perenniporia vanhullii Decock & Ryvarden sp. nov. is described based on specimens originating from open forests in Zimbabwe, Namibia, an Senegal.

Introduction
As a part of an ongoing survey of *Perenniporia* Murrill (Basidiomycota) in tropical Africa (Decock 2001, 2007, 2011, Decock and Masuka 2003, Decock and Mossebo 2001, 2002, Decock *et al*. 2011), several specimens gathered from Zimbabwe, Namibia and Senegal were found to represent an undescribed taxa (Decock *et al*. 2011, Ryvarden and Johansen 1980). This species is described below as *Perenniporia vanhullii* sp. nov.

Materials and methods
Material and Collection localities. The type specimen of the new species was collected in Hwange National Park, Zimbabwe. The local vegetation is mostly composed of dry deciduous forest, dominated by *Baikiaea plurijuga* (Fabaceae) on Kalahari sands. *Terminalia sericea* Burch. ex DC (Combretaceae) shrubs and Mopane (*Colophospermum mopane* (Kirk ex Benth.) Kirk ex J.L. Leonard (Fabaceae) woodlands are also found in Hwange ((White 1983). The area belongs to the Zambesian regional center of endemism (White 1983).
The type or authentic specimens are preserved at MUCL and O (herbarium acronyms are from Thiers B. [continuously updated]).
MUCL original strains were isolated from basidiome tissues during field works, on malt extract agar supplemented with 2 ppm benomyl (benlate) and 50 ppm chloramphenicol, and later purified in the laboratory. Living cultures are preserved at MUCL, with a duplicate of ex-type strain at the CBS.

Specimen's description. Colors are described according to Kornerup and Wanscher (1981). Section were carefully dissected under a stereomicroscope in hot (40°C) NaOH 3% solution, and later examined in NaOH 3% solution at room temperature (Decock *et al*. 2010). Sections were also examined in Melzer's reagent and lactic acid cotton blue to evidence staining reaction. All the microscopic measurements were done in Melzer's reagent. In presenting the size range of several microscopic elements, 5% of the measurements at each end of the range are given in parentheses when relevant. In the text, the following abbreviations are used: ave = arithmetic mean, R = the ratio of length/width of basidiospores, and ave_R = arithmetic mean of the ratio R.

Taxonomy

Perenniporia vanhullii Decock & Ryvarden sp. nov. Figs. 1–2
Etymology: "vanhullii", dedicated to my late friend and distinguished colleague, Sophie Vanhulle; she had collected the specimen from Senegal. Mycobank no 811 013.

Basidiomes resupinate, effused, adnate, seasonal to bi-seasonal, extending from 10–90 mm long × 10–25 mm wide, up to 1 mm thick; *margin* well delimited, 0.5–2 mm wide, white; *pore surface* even, cracking on drying, homogeneously grayish orange (5B3) (then contrasting with the margin), with a corky consistency; *pores* even, round to slightly ellipsoid, (5–)6(–7)/mm, 100–175 µm wide (8 = 144 µm), elongated pores up to 200 × 125 µm; *dissepiments* thin to thick, 45–100 µm thick (8 = 60 µm), entire, smooth to slightly lanose under the lens; *tube layer* unique, 05–1 mm thick, concolorous with the pore surface (grayish orange),with a corky consistency; *subiculum* absent or extremely reduced to a very thin line pale, concolorous with the tube layer (grayish orange).
Hyphal system dimitic, both in the context and the trama of the tubes, with generative and skeleto-binding hyphae; *generative hyphae* scarce, hyaline, sparsely branched, clamped, (2.0–)2.5–3.0 µm diam; *vegetative hyphae* hyaline, non- to faintly dextrinoid , cyanophilous, of a similar construction in the context and the trama of the tubes, mostly shortly arboriform, with the branching denser from the subiculum towards the hymenophoral, made of an unbranched basal part, arising from a generative hyphae, clamped at the basal septum, 55–95 (–110) µm long (ave = 78 µm), 2.0–2.5 µm diam at the basal septa to 2.5–3.0 µm diam. at the branching point, thick-walled but not solid, straight to more often geniculate then frequently with short, lateral aborted processes, and several either lateral or apical branches, once or twice branched, of variable length, measured up to 150 µm long, then skeletal-like, straight to sinuous, thick-walled but not solid, and ending thin-walled (very occasionally with secondary septa), 2.0–2.5 µm diam. in the main part down to 1.5 µm diam; at apices.
Hymenium. Basidia hyaline, clavate to pedunculate, clamped, with four sterigmata, 13–17 ´ 6.5–7.5 µm; cystidia or other sterile structure absent; *basidiospores* broadly ellipsoid to subglobose, apically truncate, thick-walled but with an apical germ pore, with a small apiculus, hyaline, dextrinoid, cyanophilous, 5.5–6.0 ´ 4.5–5.5 µm (ave = 5.7 ´ 4.9 µm), R = 1.05–1.30 (ave_R = 1.16); *chlamydospores* absent.

Figs 1 & 2. *Perenniporia vanhullii*, from the type. 1. Vegetative hyphae from the hymenophoral trama (scale bar = 50 μm); 2. Basidiospores (scale bar = 5 μm).

Type of rot: white rot (presence of laccases positive when tested with syringaldazine [Harkin and Obst 1974] on culture (MUCL 46315) grown on malt extract agar).
Substrate: on dead wood on the ground, Fabaceae (?) and unidentified angiosperms.
Distribution: known from north-western Zimbabwe, northern Namibia, and Southern Senegal.
Phylogenetic affinities: the species is related to *Perenniporia aridula* B.K. Cui & C.L. Zhao, *Perenniporia centrali-africana* Decock & Mossebo, *Perenniporia alboferruginea* Decock, and several still undescribed taxa originating from Meso-America and the Caribbean (data not shown).

Holotype. **Zimbabwe**, Matabeleland North, Hwange National Park (approx. 18°30'-19°50' S, 25°45'-27°30' E), on dead wood on the ground, unidentified angiosperm, 15 Apr. 1993, C. Decock, ZW/93-H-28, in herbarium MUCL (MUCL 38450) and O. ITS reference sequence Genbank # KP217810.

Other specimens examined: Namibia, Otjozondjupa Region, Otjiwarango (approx. 20°28'S, 16°39'E) on dead wood on the ground, unidentified angiosperm, 19 Jan 2014, L. Ryvarden 49349, in O and MUCL; **Senegal**, Sine-Saloum area, garden, on dead wood on the ground, unidentified angiosperm, Mar 2005, S. Vanhulle, in MUCL (MUCL 46315; culture ex. MUCL 46315, ITS sequence Genbank # KP217811).

Discussion
The combination of thin, resupinate basidiomata, about 6 pores / mm, a cork-colored pore surface (Fig. 1) contrasting with a white margin, non- to faintly dextrinoid vegetative hyphae, and broadly ellipsoid to subglobose (Fig. 2), and dextrinoid basidiospores, averaging 5.7 ´ 5.0 µm, make the species distinct. The trama of the tubes is composed of variously branched vegetative hyphae, of the arboriform skeleto-binding type (Fig. 1), comparable to those found in several other African species such as *P. centrali-africana* or *P. mundula*. *Perenniporia vanhullii* is known from open habitat, with contrasted, alternate dry and rainy seasons. This includes the dry, deciduous forest dominated by *Baikiaea plurijuga* (Fabaceae) in Zimbabwe that belongs to the Zambesian regional center of endemism (White 1983).
Perenniporia vanhullii should be compared to *P. mundula* and, at a lesser degree, to *P. tephropora*; these species are likely to be found in the same environment. They are sympatric in the western / south-western corner of Zimbabwe.
Perenniporia mundula differs from *P. vanhullii* in forming effused to pseudopileate basidiomata, the pseudopileus turning dark brown to black with age, and in having a whitish pore surface and tube layer. *Perenniporia mundula* is a very little know species, and its taxonomic status could be debated. Morphologically, it is in many respects very similar to *P. centrali-africana* (Decock and Mossebo 2001) but also to *P. malvena* (Lloyd) Ryvarden (Ryvarden 1989). When more specimens and DNA sequence data will become available, these three species might reveal to be closely related, if not representing a single taxon.
Perenniporia tephropora differs from *P. vanhullii* in having perennial basidiomata, occasionally with a black pseudopileus, a distinctly grayish pore surface, brown to dark

brown tube layers, unbranched, yellowish and dextrinoid skeletal hyphae, and ellipsoid, slightly narrower basidiospores (3.5–4.5 µm wide, Ryvarden and Johansen 1980). *Perenniporia vanhullii* should be compared also to *P. centrali-africana* (Decock & Mossebo 2001) and *P. alboferruginea* (Decock *et al*. 2011); both latter are the closest relatives of *P. vanhullii* present in Africa.

Perenniporia centrali-africana also develops dark brown to black pseudo-pileus, has a whitish pore surface, and pale grayish brown tube layer. *Perenniporia alboferruginea* has a white pore surface and oxide red marginal area. *Perenniporia centrali-africana* and *P. alboferruginea* are known for the time being from the western edge of central Africa or, in a biogeographically perspective, from the western edge of the Guineo-Congolian rainforest.

Perenniporia djaensis Decock & Mossebo has a comparable basidiomata, resupinate, effused, with a cork colored pore surface (Decock and Mossebo 2002, Decock *et al*. 2011). It differs from *P. vanhullii* in its larger pores (3–4/mm, 200–300 µm wide) and distinctly ellipsoid basidiospores, 5.0–6.0 ´ 3.6–4.2 µm wide with R = 1.3–1.5. Furthermore, the species is known exclusively from the humid rainforest of southeastern Cameroon and Gabon (the western edge of the Guineo-Congolian rainforest).

Considering non-African species, *P. vanhullii* should be compared also to *P. aridula* B.K. Cui & C.L. Zhao, a species known for the time being only from southwestern China, in the Yunnan Province (Zhao *et al*. 2013). Both species are also, phylogenetically, very closely related (data not shown). *Perenniporia aridula* differs in having slightly larger basidiospores, 6.0–7.0 ´ 5.0–6.0 µm (average 6.7 ´ 5.6 µm, Zhao *et al*. 2013). *Perenniporia aridula* also is described as trimitic (Zhao *et al*. 2013). However, the exact hyphal system and the differentiation of the vegetative hyphae in this species are difficult to figure out based on the original description of this species.

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References

Zhao C.L., Cui B.K. & Dai Y.C. 2013. New species and phylogeny of *Perenniporia* based on morphological and molecular characters. Fungal Diversity 58: 47–60, doi 10.1007/s13225-012-0177-6.

Decock C. 2001. Studies in *Perenniporia* (Basidiomycetes, Polypores): African taxa I. *Perenniporia dendrohyphidia* and *Perenniporia subdendrohyphidi*a. Systematic and Geography of Plants 71: 45–51.

Decock C. 2011. Studies in *Perenniporia* s.l. (Polyporaceae): African taxa VII. *Truncospora oboensis* sp. nov., an undescribed species from cloud forest in São Tome. Cryptogamie Mycologie 32: 383–390.

Decock C. & Mossebo D. 2001. Studies in *Perenniporia* (Basidiomycetes, Polypores): African taxa II. *Perenniporia centrali-africana* sp. nov. from Cameroon. Systematic and Geography of Plants 71: 607–612.
Decock C. & Mossebo D. 2002. Studies in *Perenniporia* (Basidiomycetes, Polyporaceae): African taxa. III. The new species *Perenniporia djaensis* and some records of *Perenniporia* for the Dja Biosphere Reserve, Cameroon. Systematic and Geography of Plants 72: 55–62.
Decock C. & Masuka A.J. 2003. Studies in *Perenniporia* (Basidiomycetes, Aphyllophorales): African taxa IV. *Perenniporia mundula* and its presumed taxonomic synonym, *Vanderbylia ungulata*. Systematic and Geography of Plants 73: 161–170.
Decock C., Mossebo D. & Yombiyeni P. 2011. The genus *Perenniporia s.l.* (Polyporaceae) in Africa V. *Perenniporia alboferruginea* sp. nov. from Cameroon. Plant Ecology and Evolution, 144: 226–232, doi: 10.5091/plecevo.2011.509.
Decock C., Valenzuela R. & Castillo G. 2010. Studies in *Perenniporia s.l.*: *Perenniporiella tepeitensis* comb. nov., an addition to *Perenniporiella*. Cryptogamie Mycologie 31: 419–429.
Kornerup A. & Wanscher J.H. 1981. Methuen handbook of colour, Ed. 3, London, Methuen.
Ryvarden L. 1989. Type studies in the Polyporaceae. 21. Species described by C.G. Lloyd in Cyclomyces, Daedalea, Favolus, Fomes and Hexagonia. Mycotaxon 352: 229–236.
Ryvarden L. & Johansen I. 1980. A Preliminary Polypore Flora of East Africa. Fungiflora: 1–455.
Thiers, B. [continuously updated]. *Index Herbariorum*: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. http://sweetgum.nybg.org/ih/
White F. 1983. The vegetation of Africa, a descriptive memoir to accompany the UNESCO/AETFAT/UNSO Vegetation Map of Africa. Unesco, Paris.

In memory of Sophie Vanhulle, here collecting specimens in Senegal.

Notes on basidiomycetes on driftwood in Finnmark, Norway

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Abstract
26 Homobasidiomycetes and 2 Heterobasidiomycetes are reported from coniferous driftwood on the coast of Finnmark, Northern Norway. The driftwood comes from Siberia and it is assumed that the fungi followed the wood and survived the transport over the Polar basin. Besides common species, also three species, *Melzericium udicola*, *Litschauerella abietis* and *Paullicorticium pearsonii*, were recorded, approximately 1200 km north of their previous northernmost localities.

Introduction
On the outermost beaches of Finnmark, approximately at 70 ° N, there are numerous logs of coniferous driftwood. They originate in Siberia where flooding carries them down rivers, into the Polar Sea where they are transported by the drift ice across the Polar basin and down along the east coast of Greenland.

When the ice melts and releases the logs, they are taken by the Gulf current and ultimately land upon the coasts of Iceland, Jan Mayen, Svalbard and Northern Norway. It is estimated that this round trip takes at least 5 years, based (among other things) that it took Nansen´s famous ship "Fram" over three years in 1903 to cross the polar basin locked in the drift ice.

After being stranded, for fungal growth to occur, it is necessary for the logs to be removed from normal sea water level which happens under heavy storms and then to slowly be depleted of the salt content on the outer surfaces. This is done by rain and melting snow and nobody knows the time scale here. Nevertheless, after a while fungi start to appear on the lower side of the logs. As shown in previous reports (Ryvarden 1994, 2010) based on collections made at Varanger Peninsula, a surprising high number of species have been reported, many of them very far from the closest locality in which they are known. Inspired by these results, more collecting were done in August 2014 at two different beaches on the peninsula. Further, as it may useful to compile a list of all these species currently known from this harsh and unusual environment and complete results from all three excursions are reported below.

To make the list easier to read, the species are indicated with numbers where 1 indicates those from 1994, 2 those from 2010, while 3 and 4 indicate those from 2014 with details as outlined below. All collections were made on coniferous driftwood and are deposited in the Oslo Herbarium (O).

Results

The following two localities were visited in 2014:
3. Finnmark, Vardø, Hamningberg, UTM 36W VD 085-280, 4. August 2014.
4. Finnmark, Berlevåg, Moldjord, UTM 35 W NU 615 565, 5. August 2014.

List of species
Homobasidiomycetes

Polyporaceae
Antrodia serialis (Fr.) Donk, 3.
A.sinuosa (Fr.) P.Karst. , 3.
A. xantha (Fr.) Ryvarden, 2, 3.
Neolentinus lepidus (Fr.:Fr.) Redhead & Ginns, 2, 4.
Oligoporus rennyii (Berk.) Ryvarden, 3.

Coniophoraceae
Coniophora arida (Fr.) P. Karst. 2, 3.

Corticiaceae
Amylocorticium cebennense (Bourdot) Pouzar, 3.
Botryobasidium intertextum (Schweinitz) Jülich & Stalpers, 2.
B. subcoronatum (Höhn.) Litsch.) Donk, 4.
Chaetoderma luna (Romell ex D.P. Rogers & H.S. Jacks.) Parmasto, 3.
Dacryobolus sudans (Bres.)Oberw., 2.
Hyphoderma argillaceum (Bres.) Donk, 2. 3.
H. setigerum (Fr.) Donk,2
Kneiffiella subalutacea (P. Karst.) Jülich & Stalpers, 2. 3,4.
Litschauerella abietis (Bourdot & Galzin) Oberw., 2. 3.
Melzericium udicola (Bourdot) Hauerslev, 2. 3.
Paullicorticium pearsonii (Bourdot) J. Erikss., 3.
Peniophorella pallida (Bres.) K.H. Larss., 2, 4.
P. praetermissa (P. Karst.) K.H. Larss., 2, 3, 4.
Radulomyces confluens (Fr.) M.P. Christ., 2.
Sistotrema coroniferum (Höhn. & Litsch.) Donk, 2.
Tubulicrinis borealis J. Erikss., 4.
T. medius (Bourdot & Galzin) Oberw., 2
T. sororius (Bourdot & Galzin) Oberw., 4.
T. subulatus (Bourdot & Galzin) Donk, 1,2,3,4.
Veluticeps abietina (Pers.:Fr.) Hjortstam & Telleria, 2, 4.

Heterobasidiomycetes
Basidiodendron caesiocinereum (Höhm. & Litsch.) Luck-Allen, 2.
Ditiola radicata (Alb. & Schwein.:Fr.) Fr. 2.

Discussion

The first immediate question is: How did the reported species arrive at the arctic coast of Finnmark?
The nearest natural pine forest is in Pasvikdalen, close to the Russian border, some 100 km to the south east as the crow flies. Some of the species reported from the coast occur there also, but it is rather improbable that spores should be dispersed from there to the logs on the beaches.
Personally I feel convinced that most of the species arrived from Siberia and that the logs were infected there, and that the fungi survived the long transport, partly deep frozen and partly in salt water. We know from other investigations (Berglund & Jonsson 2001) that even fresh logs may be infected in their core wood by basidiomycetes without any trace of the infection on the surface of the log.

One additional argument is the occurrence of some very rare species, previously in Norway only known up to 1500 km south of the localities on the Varanger coast. Examples are *Melzericium udicola*, *Litschauerella abietis* and *Paullicorticium pearsonii*. It is quite improbable that spores of these species should have been dispersed from such remote localities.

It would have been desirable to take core samples from recently arrived drift logs and to do DNA sequencing of species occurring when such samples are cultured. This may shed light on the question whether logs really can act as agents for long distance dispersal of fungi, not only along the Arctic coast, but elsewhere in the world.

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Dr. Karl-Henrik Larsson, University of Oslo has kindly confirmed some of my determinations of corticoid species. N. Legon, England has as always ready suggested improvements to the English text.

References
Berglund, H. & Jonson B. G. 2001: Predictability of plant and fungal richness of old growth boreal forests island. J. Vegetation Science 12:857-866.
Ryvarden, L. 1994. Notes on some corticoid fungi from Finnmark, Northern Norway, Agarica 13:49-51.
Ryvarden, L. 2010. Basidiomycetes on driftwood in Finnmark, Norway. Agarica 29:2-4.