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Aphyllophorales of Africa 41

Some polypores from Gabon

by

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Abstract

108 poroid species are reported from Gabon and the following new species are described: *Ganoderma gabonensis* Decock & Ryvarden, *Ceriporiopsis gabonensis* Decock & Ryvarden, *Diplomitoporus densiporus* Decock & Ryvarden, *Diplomitoporus gabonensis* Decock & Ryvarden, *Microporus nigroglaber* Decock & Ryvarden *Polyporus gabonensis* Decock & Ryvarden, *Theleporus africanus* Decock & Ryvarden, *Tyromyces microsporus* Decock & Ryvarden and *Wrightoporia grandipora* Decock & Ryvarden while *Cyclomyces tabacinus* (Mont.) Pat is reported as new to Africa.

Introduction

Collecting was done in April 2006 and 2008 by the senior author (C. D.) with his numbering at the following localities

In Estuaire province, Libreville, La Mondah forest, collections 1-25 ; 278-298 ; 500-510.

In Estuaire province, Libreville, Sibang Arboretum, collections 270-277.

In Ogooue Ivindo province, Ipassa Makokou Biosphere Reserve, collections 28-245, 299-419.

All pictures were taken by C. Decock.

List of species

Coniophoraceae

Serpula similis (Berk. & Broome) Ginns, 152.

Ganodermactea

Amauroderma albocontexta Ryvarden, 168.

A. conjunctum (Lloyd) Torrend, 99, 614 and 349.

A. expallens (Bres.) Furtado, 102 and 73.

A. fasciculatum (Pat.) Torrend, 114, 314 and 389.

A. kwiluensis (Beeli) Ryvarden, 53, 367, 614 and 567.
A. oblongisporum Furtado, 10 and 756.
A. preussii (Henn.) Steyaert, 61, 50, 58, 409, 58, 70, 40, 381 and 207.
A. rugosum (Blume et Nees: Fr.) Torrend, 226 and 270.
A. sericatum (Lloyd) Wakefield, 82, 114, 270, 372, 415 and 410.
Ganoderma alluaudii Pat. & Har., 273.
G. australe (Fr.) Pat., 148 and 275.
G. chaliceum (Cooke) Steyaert, 171 and 274.
G. cinnamomea Ryvarden, 126, 225, 226, 242 and 243.

This species belongs in a complex of species including *G. rufoalbum* (Bres. & Pat.) Pat., and *G. caracareum* Douanla-Meli & Langer, which all are characterized by having their context transformed to masses of smooth, thick walled chlamydospores. However, the latter two species both have slightly wider basidiospores than the former. Further, DNA sequencing of *G. cinnamomea* has shown it to be different from the two others (Cabaro et al. 2019).

G. hildebrandii Henn., 193, 413, 339, 340 and 360.
Humphreya lloydii (Pat. & Har.) Steyaert, 108, 401.

Ganoderma gabonensis Decock & Ryvarden, nov. species, Index fung. 558049.

Holotype Gabon, Ogooue Ivindo province, Ipassa Makokou Biosphere Reserve, 0°17'60" N, 12°35'58" E, elev. ~ 400 masl, 8 April 2006, Coll. C. Decock GA-06-124, on a dead fallen trunk, ~ 80 cm diam, unidentified angiosperm, in BE, isotype in O.

Basidiocarps perennial, pileate, sessile, broadly attached, woody hard, 3 cm wide, 5 cm long and up to 1.5. cm thick in compound basidiocarps; upper surface dull, sulcate in wide zones, evenly cinnamon by deposited spores, under which there is a black distinct line becoming black and sub shiny along the margin; margin steep and rounded; pore surface deep brown, pores thick walled, about 6 per mm, almost invisible to the naked eye because of the wide pore walls, tube layer concolorous with pore surface, up to 10 mm deep, context deep cinnamon, partly fibrous, up to 6 mm thick at base and with a black compressed zone at the top.

Hyphal system dimitic with arboriform skeleto-binding hyphae; generative hyphae hyaline, thin-walled, with clamps, 2-5 µm in diam, difficult to observe in dried specimens; arboriform skeleto-binding hyphae abundant, thick-walled, pale yellowish brown, sparingly branched or with a few distal branches, 3-6 µm in diam, side branches long and whip-like.

Cuticle: up to 200 µm thick with agglutinated hyphae in a dense structure without any distinct organization.

Basidia not seen,

Basidiospores 10-12 x 5-6 µm with a distinct truncate apex, hyaline to pale yellow, finely ornamented, almost invisible in microscopic preparations (1000 x).

Substrata. On a dead hard wood tree

Distribution. Known only from the type locality.

Remarks. The species is characterized by its thin pileus cuticle, minute pores, and almost conical spores.

Hymenochatacae

- Cyclomyces tabacinus* (Mont.) Pat., New to Africa, 22 and 63.
Fomitiporia gabonensis Amalfi & Decock, 179, 312, 313, 347, 412.
F. ivindoensis Decock, Amalfi & Yombiyeni, 366.
F. nobilissima Decock & Yombiyeni, 191, 384 and 385.
F. tenuis Decock, Bitew, Castillo, 158, 278, 299, 300, 335 and 348.
Phellinus allardii (Bres.) Ryvarden, 06 and 288.
P. cesatii (Bres.) Ryvarden, 272 and 320.
P. fastuosus (Lev.) Pat., 23.
P. ferruginosus (Fr.) Pat., 79.
P. extensus (Lev.) Pat., 03, 66, 43, 33 and 76.
P. gabonensis Decock & Yombiyeni, 54, 279 and 291.
P. gilvus (Schw.) Pat., 48, 192 and 240.
P. glaucescens (Petch) Ryvarden, 249 and 413.
P. nilgheriensis (Berk.) Ryvarden, 176, 318, 319 and 285.
P. noxius (Corner) Cunningh., 391.
P. pachyphloeus (Pat.) Pat., 359.
P. purpureogilvus (Petch) Ryvarden, 392.
P. senex (Mont. & Nees) Imazeki, 64, 170, 305, 292 and 282.
P. wahlbergii (Fr.) Reid, 86, 355.
Phylloporia afrospathulata Yombiyeni & Decock, 166.
P. cfr. pectinata (Kl.) Ryvarden, 17, 52 and 63.

Polyporaceae

- Abundisporus fuscopurpureus* (Pers.) Ryvarden, 182.
Antrodiella duracina (Pat.) Lindbl. & Ryvarden, 100.
Ceriporia ferruginicincta (Murr.) Ryvarden, 94.
C. xylostromatioides (Berk.) Ryvarden, 45.
C. cfr. mucida (Pers.) Gilb. & Ryvarden, 28.
Ceriporiopsis cfr. angulatosporus Ryvarden. No spores seen, 199.
C. consobrina (Bres.) Ryvarden, 237, new to Africa.
C. costaricensis Mato & Ryvarden 38.

Ceriporiopsis gabonensis Decock & Ryvarden, nova species Index fung. 558050.

Holotype: Gabon, Ogooue Ivindo province, Ipassa Makokou Biosphere Reserve, ~ 0°17'60" N, 12°35'58" E, elev. ~ 400 masl, on a very decayed wood, unidentified angiosperm, 2 April 2006, Coll C. Decock GA-06-128, in BR, isotype in O.

Basidiocarps annual, resupinate about 7 x 4 cm and 3 mm thick, soft when fresh, hard and brittle when dry, margin narrow and white, pore surface whitish cream when fresh,

cream coloured when dry, pores angular, in part irregular and incised, 1-3 mm wide, tubes as pore surface up to 2 mm deep, subiculum white, almost invisible to the naked eye.

Hyphal system monomitic, generative hyphae with large clamps, hyaline, thin-walled, 3-6 μm wide.

Basidia 8-12 x 4-6 μm tetrasterigmatic.

Basidiospores 4-5 x 2.5-3 μm , elliptic, smooth, hyaline, non-dextrinoid.

Substrate: Dead, decayed hard wood log.

Distribution. Known only from the type locality.

Remarks. The large angular pores make this a distinct species.

C. melleus Ryvarden, 05.

Daedalea stereoides Fr., 67.

Datronia caperata (Berk.) Ryvarden, 85 and 220.

Dichomitus cavernulosus (Berk.) Masuka & Ryvarden, 08.

D. leucoplacus (Berk.) Ryvarden, 145.

D. setulosus (Henn.) Masuka & Ryvarden, 65.

Diplomitoporus africanus Ryvarden, 88.

D. angulatoporus Ryvarden, 31, 199.

Diplomitoporus densiporus Decock & Ryvarden, nov. sp. Index Fung. 558051.

Holotype: Gabon, Ogooue Ivindo province, Ipassa Makokou Biosphere Reserve, ~ 0°17'60" N, 12°35'58" E, elev. ~ 400 masl, 8 April 2006, on dead fallen branch, ~20 cm diam, unidentified angiosperm, Coll. C. Decock GA-06-111 in BR, isotype in O.

Basidiocarps resupinate, up to 3 mm thick on sloping parts, adnate, brittle when dry, margin narrow to wide, up to 4 mm, white and soft, pore surface slightly reddish orange when fresh, evenly wood coloured when dried, pores angular, 5-6 per mm, some even larger, tube layer dense, concolorous with pore surface, up to 3 mm thick, subiculum very thin and white.

Hyphal system dimitic, generative hyphae hyaline, with clamps, 2-3 μm wide, skeletal hyphae solid to thick-walled, hyaline, 3-6 μm in diam, those of the dissepiments almost cystidia-like with even thickness of 4-7 μm and with a round apex.

Basidiospores 3-3.5 x 1-1.5 μm , cylindrical to slightly bent.

Distribution. Known only from the type locality.

Remarks. The species is undoubtedly related to *D. ugandensis*, which however has an irregular pore surface, spores being 1.5-2 μm wide and where cystidia-like skeletal hyphae have not been observed. The latter are rather distinct and conspicuous in the outer parts of the pore walls.

Diplomitoporus gabonensis Decock & Ryvar den, Index Fung. 558052.

Holotype: Gabon, Ogooue Ivindo province, Ipassa Makokou Biosphere Reserve, ~ 0°17'60" N, 12°35'58" E, elev. ~ 400 masl, 5 April 2006, on dead hard wood, Coll. C. Decock GA-06-28, in BR, isotype in O.

Basidiocarps resupinate, up to 2 mm thick, adnate, brittle when dry, margin narrow, white to cream, pore surface ochraceous, pores round to slightly to angular, invisible to the naked eye, 7-9 per mm, tube layer concolorous with pore surface, up to 2 mm thick, subiculum very thin and white.

Hyphal system dimitic, generative hyphae hyaline with clamps which is difficult to observe, 2-4 µm wide, skeletal hyphae totally dominating, along the dissepiments, straight and tubular with rounded tips, 4-6 µm wide.

Basidiospores 6-7 x 4-5 oblong elliptic, smooth, IKI negative.

Distribution. Only the type has been seen.

Remarks. The species is similar to *D. minutoporus* Ryvar den, which however has elliptic spores, i.e. 3-3.5 x 2.5 µm.

D. irregularis Ryvar den 167 and 229.

D. minutoporus Ryvar den, 56, 64, 194.

Favolaschia calocera Henn., 87.

Flabellophora obovata (Jungh.) Núñez & Ryvar den, 227.

Gloeoporus thelephoroides (Hooker) G. Cunnningh. 114.

Haploporus nanosporus (A. David & Rajchenb.) Piątek 39, 40, 43, 44, 51, 76, 77, 81, 131, 139, 154, 210, 211, 280, 286, 310 and 353.

Hexagonia glaber (Beauv.) Ryvar den, 02, 07 and 11.

H. speciosa Fr., sterile, 74.

Junghuhnia crustacea (Jungh.) Ryvar den, 235.

Larssoniporia tropicalis (Cooke) Y.C. Dai, Jia J. Chen & B.K. Cui, 344.

Microporellus adextrinoideus Decock, 396, 397 and 398.

This species was recently (Ryvar den 2018) described as *Perenniporia afrostipitata* Henkel & Ryvar den, which thus, becomes a taxonomic synonym of *M. adextrinoideus*.

Microporus affinis (Blume & Nees: Fr.) Kunt., t32 and 90.

M. albo-ater (Henn.) Kunth. 153.

Microporus nigroglaber Decock & Ryvar den nova sp. Index Fung. 558053. Fig 1

Holotype: Gabon, Ogooue Ivindo province, Ipassa Makokou Biosphere Reserve, ~ 0°17'60" N, 12°35'58" E, elev. ~ 400 masl, 26 Mar 2008, on dead hanging branch, 5-6 cm diam, Coll. C. Decock GA-08-306 (BE) Isotype in O and MUCL. Paratype, same locality, 17 Apr 2006, coll. C. Decock GA-06-238 in BR, isotype in O.

Basidiocarps annual, solitary or in groups, laterally stipitate flabelliform, spatulate, semi-circular dimidiate, flat or depressed around the stipe, pileus up to 3 cm long and 2 cm wide, pileus glabrous, distinctly zoned, black to deep brown in small specimens, margin sharp and thin, pore surface pale cream, pores round and entire, minute 7-10 per

mm, tubes light cream, up to 0.5 mm deep, context homogenous, white and dense, up to 1 mm thick

Stipe lateral, up to 2 cm long and prominent, up to 3 mm in diameter, glabrous, pale brown, slightly expanded both towards the base, inner part white and dense.

Hyphal system trimitic, generative hyphae hyaline and with clamps, 2-4 μm in diameter, skeletal hyphae 3-7 μm in diameter, thick-walled to almost solid, binding hyphae tortuous and much branched, mostly 1.5-6 μm wide, coralloid elements not seen.

Basidiospores 3-4 x 1.5-2 μm , cylindrical to oblong elliptic, smooth and IKI-.

Distribution. Known only from the type locality.

Remarks. This is a remarkable species by its smooth, completely glabrous and black pileus.



Fig. 1. *Microporus nigroglaber*, holotype.

M. vernicipes (Berk.) Kunt., 33, 142.

M. xanthopus (Fr.) Kunt., 01.

Nigrofomes melanoporus (Mont.) Murrill, 287.

Nigroporus stipitatus Dounala-Meli & Ryvarden, 97.

N. vinosus (Berk.) Murrill, 20, 27 and 62.

Perenniporia djaensis Decock & Mossebo, 31, 229, 271.

P. inflexibilis (Berk. & M. A. Curtis) Ryvarden, 42, 67, 84, 101, 228, 293, 302, 309, 371, 390 and 402.

P. latissima (Bres.) Ryvarden 103, 177, 315, and 354.
P. medullapanis s. lato 02, 15, 140.
P. miniochroleuca Ryvarden, 09 and 290.
P. mundula (Wakef.) Ryvarden, 146.
P. ochroleuca (Berk.) Ryvarden, 93.
P. tephropora (Mont.) Ryvarden, 37, 60, 217, 224, 234, 251, 296 and 297.

Polyporus gabonensis Decock & Ryvarden, nova species Index Fung. 558054.

Holotype: Gabon, Ogooue Ivindo province, Ipassa Makokou Biosphere Reserve, ~ 0°17'60" N, 12°35'58" E, elev. ~ 400 masl, 02 April 2006, on dead hanging branch, 3-5 cm diam, unidentified angiosperm, Coll C. Decock GA-06-13, in BR, isotype in O.

Basidiocarps laterally stipitate, about 6 cm in diameter and about 3 mm thick at centre, pileus evenly brown, glabrous, azonate and slightly wrinkled in dry condition, margin thin, pore surface ochraceous, pores round to slightly to angular, 6-7 per mm, tube layer concolorous with pore surface, up to 1 mm thick, subiculum thin and white.

Stipe round, 3 cm long, 5 mm in diameter, dark brown finely velutinate, in parts otherwise glabrous and almost black.

Hyphal system dimitic, generative hyphae hyaline with clamps which h is difficult to observe, 2-4 µm wide, arboriform hyphae totally dominating, up to 6 µm at the base, ending in whip like side branches, negative in Melzers solution.

Basidia 15-20 x 4-6 µm tetrasterigmatic.

Basidiospores 6-7 x 3.5-4.5 oblong elliptic to cylindrical, smooth, IKI negative.

Distribution. Only the type has been seen.

Remarks. The species is almost identical with the temperate *P. melanopus*, but separated by its smaller pores.

Polyporus udus Jungh., 117.

Porogramme albocincta (Mass.) Lowe, 19 and 347.

P. azurica Ryvarden, 25.

P. fuligo (Berk. & Broome) Pat., 241.

Rigidoporus dextrinoideus I. Johansen & Ryvarden, 341.

R. microporus (Fr.) Overeem, 222.

R. ulmarius (Fr.) Imazeki, 72.

R. undatus (Pers.:Fr.) Donk, 98.

R. vinctus (Berk.) Ryvarden, 91, 343.

Schizopora trichiliae (Van der Byl) Ryvarden, 223 and 233.

Theleporus calcicolor (Sacc. & Sydow) Ryvarden, 57.

Tinctoporellus epimiltinus (Berk.) Ryvarden, 157.

Trechispora dimitica (Johan. & Ryvarden) K.-H. Larsson, 326.

Theleporus africanus Decock & Ryvarden Nov. species, Index Fung. 558055.

Holotype: Gabon, Ogooue Ivindo province, Ipassa Makokou Biosphere Reserve, Kongou Fall, around the tourist camp, ~ 0°17'60" N, 12°35'58" E, elev. ~ 400 masl, 9 April 2006, dead hanging branch, unidentified angiosperm, Coll C. Decock GA-06-143, in BR, isotype in O.

Basidiocarps annual, resupinate, adnate and widely effused, up to 30 cm long, dense and brittle when dry, pore surface white when fresh, unchanged on drying, pores 1-3 per mm, pores up to 200 µm deep, pores densely dotted with hyphal pegs, hymenium restricted to the bases of the pores, difficult to observe properly, consistency dense, subiculum thin, along margin cob webby and partly transparent.

Hyphal pegs numerous covering pores and sterile dissepiments, white about 20-40 x 50-120 µm.

Hyphal system dimitic, generative hyphae hyaline, thinwalled and with clamps, 24 µm wide, skeletal hyphae thickwalled to solid, 24 µm wide, densely agglutinated and difficult to separate. IKI negative.

Dendrohyphidia 15-30 x 3-5 µm, hyaline, difficult to observe properly, mostly collapsed.

Basidia 12-16 x 4-6 µm, tetrasterigmatic.

Basidiospores globose, 5-6 µm in diameter with distinct apiculus, smooth, thin walled and negative in Melzers reagent.

Distribution. Known only from the type locality.

Remarks. The white basidiocarp with shallow angular pores densely dotted with hyphal pegs should make it possible even to recognize the species in the field. It is similar to *T. cretaceus* Fr., which however has mostly one central papillae or hyphal pegs besides broadly cylindrical spores, i.e. 7-8 x 3-3.2 µm.

Trametes anthlerloides (Douanla-Meli & Ryvarden) Ryvarden, 231.

T. elegans (Fr.) Fr., 247.

Trametes menziesii (Berk.) Ryvarden, 16.

T. strumosa (Fr.) Zimitr. et. Al., 46.

Tyromyces kenyensis Ryvarden, 198.

Tyromyces microsporus Decock & Ryvarden, nova species Index Fung. 558056. Fig.2 Gabon, Ogooue Ivindo province Ipassa Makokou Biosphere Reserve, layon 1, ~ 0°17'60" N, 12°35'58" E, elev. ~ 400 masl, 12 April 2006, on dead fallen trunk, ~ 20 cm diam, Coll C. Decock GA-06-198, in BR, isotype in O.

Basidiocarp annual, pileate, sessile to dimidiate, convex, semicircular up to 4 cm wide, 6 cm long and 3 mm thick at the base, soft when fresh, fragile when dry, upper surface glabrous, smooth, white when fresh, with faint shades of grey, margin thin, sharp, pore surface white to very pale cream when dry, pores invisible to the naked eye, round 7-8 per mm, a few slightly larger, tubes white, 1 mm deep, context dense, homogenous, white and 2 mm thick at base.

Hyphal system monomitic; generative hyphae with clamps, straight, thin- to distinctly thick walled, especially in the context and with large clamps, 2-6 μm wide, swelling strongly in 3 % KOH.

Basidiospores 3-3.5-4 x 1-1.2 μm , cylindrical, smooth and IKI negative.

Distribution. Known only from the type locality in Gabon.

Remarks. The species reminds one of *T. kenyensis* Ryvarden, which, however has larger pores and spores, 4-5 per mm and 3.5-4 x 1.5 -1.7 μm respectively and a much darker pileus.



Fig. 2 *Tyromyces microsporus*, holotype

Wrightoporia africana Johan. & Ryvarden, 115, 120, 123, 212, 289 and 303.

Wrightoporia grandipora Decock & Ryvarden nova species Index Fung 558057. Fig. 3

Holotype: Gabon, Ogooue Ivindo province, Ipassa Makokou Biosphere Reserve, ~ 0°17'60" N, 12°35'58" E, elev. ~ 400 masl, 5 April 2006, on a very decayed, fallen trunk, unidentified angiosperm, Coll. C. Decock 2 Apr. 2006, GA-06-36, in BR, isotype in O.

Basidiocarps annual, resupinate, becoming widely effused, up to 10 cm wide or long and 2 mm thick, easily separable from the substratum, consistency silky when fresh, fragile when dry, margin white, up to 4 mm wide, pore surface whitish when fresh, cream to ochraceous on drying, dull, pores irregular 2 per mm, but some even larger with partly irregular outline, tubes up to 1 mm deep.

Hyphal system, generative hyphae with clamps, but difficult to observe, 2-4 μm in diameter, skeletal hyphae dominant throughout, dextrinoid, thick-walled, flexuous, unbranched, narrow and 1.5-2 μm in Melzer's reagent, swelling to 1.5-4 μm wide in KOH.

Basidia not seen.

Basidiospores 3-3.5 x 2 μm , sub-globose, seemingly smooth, amyloid.

Distribution Known only from the type locality.

Remarks. The large, partly angular to irregular pores and the small amyloid spores are distinct features for this remarkable species.

W. lenta (Overh. & Lowe) Pouzar, 78.



Fig. 3. *Wrightoporia grandipora*, holotype

Heterobasidiomycetes

Protomerulius africanus Ryvarden, 219.

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formalities having let us perform field research. Thanks also to Mr N. Yao, field guide at Ipassa-Makokou research station, who provided invaluable help during field work,

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Aphyllorphorales of Africa, 42

Some corticoid species from Cameroon

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Abstract

83 corticoid species, 8 *Hymenochaete* species and 4 Heterobasidiomycetes are reported from Cameroon, almost all being new to the country.

Introduction

The wood inhabiting mycota of Cameroon is relatively poorly known, but still better than for most of other countries in Central Africa. The very first reports of wood inhabiting species are those of Hennings (1895, 1897, 1901 and 1905). Later contributions were made by Berthet and Boidin (1966), Nunez & Daniels (1999), Hjortstam, Ryvarden and Watling (1993), Douanla-Meli (2007), Roberts (2000), Roberts (2001), Ryvarden & Nunez (1993) and Ryvarden (2020). Still corticoid fungi are poorly known and the following is an attempt to make a first checklist of such fungi.

One of us (LR) has had the privilege to collect wood inhabiting fungi on two occasions in Cameroon. The first as participant in a general biological survey of the canopy in the Campo forest reserve in southern Cameroon (Ryvarden & Nunez 1993). Specimens reported in the following from this trip are those with numbers beginning with 30.

The second was a collecting trip in the Dja Biosphere Reserve in the Dja sector in the eastern part of Cameroon. Professor T. Henkel of Humboldt University, United States had established a camp inside the reserve, and I am indebted for his generosity giving me the opportunity to join him and his collaborators for about a week in September 2019. The recorded poroid species were published a year ago (Ryvarden 2020). The corticoid species from this last collecting trip, are those with collecting numbers beginning with 50.

The corticioid specimens from both collecting trips were sent to the first author at the Botanical Museum at Helsinki Museum for determination. A number undetermined specimens have been put aside for future studies. The collections are all deposited in the fungarium of Oslo University (O).

In total, 79 species of corticioid fungi (incl. *Hymenochaete*) are reported as new to Cameroon (marked below by asterisk).

Cortiaceae s. lato

- **Acanthophysium thoenii* Boidin, Lanq. & Gilles 31010 & 31011.
- **Amyloxenasma* aff. *pruina* (clamps absent!) (Bourdot & Galzin) Hjortstam & Ryvarden 30982.
- **Asterostroma cervicolor* (Berk. & M. Curtis) Massee 50666 & 50730.
- A. ochroleucum* Bres. 30896 & 30899.
- **Botryobasidium candicans* s.l. J. Erikss. 50541.
- **B. conspersum* J. Erikss. 50525.
- **B. aff. lembosporum* (Rogers) Donk 50520.
- **B. vagum* (Berk. & M. A. Curtis) Rogers 50466 & 50674.
- **Brevicelopsis allantospora* (Hjortstam & Ryvarden) Hjortstam & Ryvarden 50643.
- Candelabrochaete mexicana* (Burt) P. Rogers 31070.
- **Clavulicium vinososcabens* s.l. (Burt) Pouzar 30830 & 30873.
- Cystidodontia laminifera* (Berk. & M. A. Curtis) Hjortstam 30938, 30942, 50479B, 50486 & 50653.
- **Dacryobolus sudans* s.l. Fr. 50625.
- **Dendrothele asterophora* Boidin & Lanq. 50677 & 50679.
- **Dichostereum durum* (Bourdot & Galzin) Pilat 50448, 50481, 50708 & 50516.
- **Duportella trigonosperma* (Boidin, Lanq. & Gilles) Hjortstam 30992.
- Fibrodontia gossypina* (Fr.) Parmasto 31118.
- **Gloeohypochnicium analogum* (Bourdot & Galzin) Hjortstam 50580.
- **Gloiothele lactescens* (Berk.) Hjortstam 50587.
- Hyphoderma albocremeum* (Hohnel & Litsch.) J. Erikss. & Strid 50316.
- **H. definitum* (H. Jacks.) Donk 31037.
- **H. cf. magnargillaceum* Boidin & Gilles 30762.
- **H. aff. medioburiense* (Burt) Donk 30934.
- H. setigerum* (Fr.) Donk 30865, 50560, 50683 & 50689.
- **H. aff. transiens* (Bres.) Parmasto 50592, 50660, 50478 & 50502.
- **Hyphodontia alutaria* (Burt.) J. Erikss. 50723.
- H. nespori* s.l. (Bres.) J. Erikss. & Hjortstam 30824.
- **H. palmae* Langer 50703.

**H. sambuci* s.l. (Pers.) J. Erikss. 31009.
**Hypochnicium cymosum* (D.P. Rogers & H. Jackson) K.H. Larsson & Hjortstam 30930.
H. cystidiatum Boudot & Gilles 50762.
Laxitextum globisporum Henkel & Ryvarden 30878, 50515 & 50561
L. lutescens Hjortstam & Ryvarden 50536.
**Leptocorticium tenellum* Nakasone 30813 & 30851.
**Lopharia aff. cinerascens* (Schw.) G. Cunningh. 30841, 30853 & 50638.
**Lyomyces mascarensis* Riebesehl, Yorchenko & Langer, 50699.
**Mycoacia uda* (Fr.) Donk 50614.
Odontiopsis hyphodontina Hjortstam & Ryvarden 30923, 50316 & 50595.
**Parvobasidium aff. cretatum* (Bourdout & Galzin) Jülich 50470.
**Parvodontia luteocystidia* Hjortstam & Ryvarden 30864B.
**Peniophora molesta* Boidin, Lanq. & Gilles 30748, 30753 & 50431.
**Peniophorella pallida* (Bres.) K.H. Larsson 50613, 50620 & 50628.
P. praetermissa s.l. (P. Karst.) K. H. Larsson 31022.
**P. pubera* (Fr.) P. Karst. 30850.
**Phaeophlebiopsis cf. ignerii* Floudas & Hibbett 30868B.
**Phanerochaete exilis* (Burt) Burdsall 50632.
**P. laevis* (Fr.) J. Erikss. & Ryvarden 50457.
Phlebia chrysocreas s.l. (Berk. & M. A. Curtis) Burdsall 50469, 50567 & 50611.
P. icterina P. Roberts 50629.
P. livida (Pers.) Bres. 50765.
**P. wrightii* (Berk. & M. A. Curtis) Duhem 31166.
**Phlebiopsis aff. galochroa* (Bres.) Hjortstam & Ryvarden 30932.
**P. flavidoalba* (Cooke) Hjortstam 50586 & 50633.
P. ravenelii (Cooke) Hjortstam 50644.
**Phlyctibasidium polyporoideum* (Berk. & M. A. Curtis) Jülich 30741.
**Pseudolagarobasidium cf. pusillum* Nakasone & Lindner 30872 & 30888B.
**Pteridomyces aff. galzinii* (Bres.) Jülich 30807 30810.
Resinicium saccharicola s.l. (Burt) Nakasone 31071 & 30764.
**Rhizochaete aff. sulphurosa* (Bres.) Chikowski, Larsson & Gibertoni 30860B.
Schizopora flavipora s.l. (Berk. & M. A. Curtis) Ryvarden 50746.
**Scotomyces subviolaceus* (Peck) Jülich 50656.
**Scytinostroma aff. arachnoideum* (Peck) Gilbert. 30911, 50488 & 50504.
Serpula similis (Berk. & Broome) Ginns 50714.
**Sistotremastrum guttuliferum* Melo, Duenas, Telleria & M. P. Martin 30864A.
Stecchericium seriatum (Lloyd) Maas Geest. 50675.
Subulcystidium brachysporum (Talbot & Green) Jülich 50744.
S. longisporum (Pat.) Parmasto 30858, 30927 & 50658.

- **Trechispora cohaerens* (Schwein.) Jülich & Stalpers complex 30906.
- **T. farinacea* s.l. (Pers.) Liberta 50602.
- **T. incisa* K. H. Larsson 50655.
- **T. cf. kavinioides* P. D. Vries 30826.
- **T. molliuscula* (Hjortstam & Ryvarden) K. H. Larsson 30941 & 50564.
- **T. subsphaerospora* (Litsch.) Liberta 31024, 50684 & 50654.
- **Vararia cunninghamii* Boidin & Lanq. 30879A.
- **V. aff. dussii* Boidin & Lanq. 30894B.
- **V. intexta* (Boidin Lanq. & Gilles) Boidin 31124 & 31127.
- **V. longispora* Boidin & Gilles 50728.
- **V. mediospora* Boidin, Lanq. & Gilles 30961.
- **V. spissata* Boidin & Gilles 30939B.
- **V. trinidadensis* A. J. Welden 30997.
- **Veluticeps africana* (Boidin, Lanq. & Gilles) Hjortstam & Telleria 50479 & 50568.
- **Xenasma rimicola* (P. Karst.) Donk 31005.

Hymenochaetaceae

- **Hymenochaete acanthophysata* J. Leger 30811, 30845, a50534 & 50615.
- **H. aff. alabastrina* G. A. Escobar 31179.
- **H. cf. coffeana* J. Leger & Lanq. 31077.
- **H. cinnamomea* s.l. (Pers.) Bres. 30970, 30994 & 50584.
- **H. curtisii* (Berk.) Morgan 31031.
- **H. fuliginosa* s.l. (Fr.) Lev. 31176.
- **H. livens* Bres. 50729.
- **H. aff. longispora* Parmasto 50691.

Heterobasidiomycetes

- Basidioidendron farinaceum* (Rogers) P. Roberts 30871.
- B. radians* s.l. (Rick) P. Roberts 30898 & 30863.
- Eichleriella flavida* (Pat.) V. Spirin & Malysheva 30813B.
- Patouillardina cinerea* Bres. 30747 & 50649.
- Protomerulius dubius* s.l. (Bourdot & Galzin) V. Spirin & Malysheva 50630.

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Tyromyces chlamydosporus a new species from Cameroon

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Abstract

Tyromyces chlamydosporus is described as new based on a specimen from Cameroon and a key to known African species of the genus is provided.

Introduction

In an ongoing study of wood inhabiting fungi from Cameroon (Henkel & Ryvarden 2020 and Ryvarden 2020 and several papers in this issue) we came across a poroid species especially distinct by presence of chlamydospores which did not match any known species. Thus, it is described a new in the following.

Tyromyces chlamydosporus Oba, Mossebo & Ryvarden, nova species, Index Fung. 558076.

Holotype: Cameroon, Western Region, Bamendjou, 15. October 2017, on dead hard wood log, Coll D. Mossebo (DM) in HUY1-DM 1521 (Herbarium of the Department of Plant Biology and Physiology of the University of Yaoundé 1 in Cameroon), isotype in O.

Basidiocarp annual, single, dimidiate with strongly narrow point of attachment, up to 6 cm wide, 8 cm long and 1 cm thick at the base, soft when fresh, rigid when dry, pileus finely velutinate, azonate, reddish brown when fresh, fading to pale brown when dry, slight rugulose, margin sharp and wavy, pore surface whitish grey when fresh, dries pale brown, pores thin-walled, wavy, angular and irregular, 1-3 per mm, 5 mm deep, concolorous with pore surface, context duplex, lower part white and horizontally fibrous, about 0.5 mm thick, upper part homogenous, pale cinnamon, slightly punky, about 1 cm thick at base.

Hyphal system monomitic; generative hyphae with clamps, thin- to thick-walled, 3-6 µm wide.

Cystidia or other sterile hymenial elements absent.

Basidia 15-20 x 5-7 µm, clavate.

Basidiospores 4-6 x 3-4.5 µm, elliptic, smooth and thin-walled.

Chlamydospores present, 5-8 µm in diameter, globose, thick walled, negative in Melzers reagent.

Substrata. Known only unknown hardwood log.

Distribution. Known only from the type locality.

Remarks. This is a remarkable species with the strong change of colour when drying and its velutinate brown pileus, large angular pores and about all by the globose, thick walled chlamydospores.

Additional specimen examined: Cameroon, Western Region, Baham village 4. April 2018, Coll. D. Mossebo (DM) in HUY1-DM 1633 and duplicate in O.

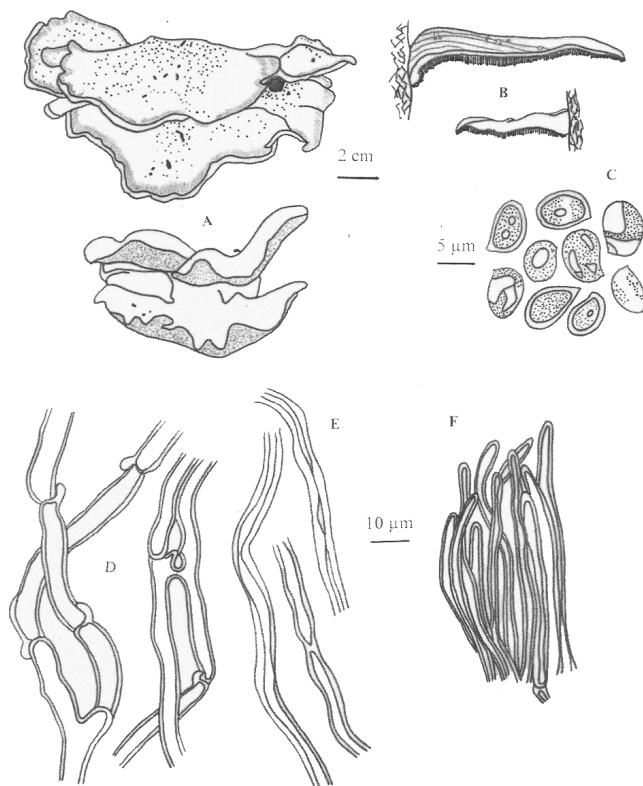


Fig. 1. *Tyromyces chlamydoporus*. A. Basidiocarp, B. Section of basidiocarp, C. Basidiospores D. Generative hyphae E. Skeletal hyphae, F. Cuticle cells. Del. D. Mossebo.

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Aphyllorphorales of Africa 44,

The genus *Mycorrhaphium* in Africa

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Summary: *Mycorrhaphium ursinum* Decock & Ryvarden is described as new and a key to the African species of the genus is provided.

Introduction

The genus *Mycorrhaphium* includes small, stipitate hydroid species. Previously, two species were known from Africa, i.e. *M. citrinum* Ryvarden and *M. africanus* Mossebo & Ryvarden (Mossebo & Ryvarden 2003). During an extensive survey of wood-decaying basidiomycetes in Gabon, one of us (C. D.) collected a species of *Mycorrhaphium* that could not be identified to any known species. It is described below as *Mycorrhaphium ursinum*.

Mycorrhaphium Maas-Geesteranus,
Persoonia 2:394, 1962.

Basidiocarps centrally to laterally stipitate, lower side densely hydroid, hyphal system dimitic with generative and skeletal hyphae, gloecystidia present or absent, basidiospores smooth, thin-walled, hyaline and without reaction in Melzer's reagent, widespread genus, growing on the ground, but not common.

Type species: *Steccherinum adustulum* Banker.

Remarks. The genus may be related to *Donkia*, which however has a monomitic hyphal system and sessile basidiocarps.

Key to African species

1. Basidiocarp citric yellow *M. citrinum*.
1. Basidiocarp differently coloured **2**
2. Stipe densely hairy and cinnamon coloured *M. ursinum*
2. Stipe glabrous, whitish to ochraceous *M. africanum*

Mycorrhaphium africanum Mossebo & Ryvarden,
Mycotaxon 88:230, 2003.

Basidiocarp centrally to laterally stipitate, pileus 4-7 cm wide, funnel-shaped or semi-circular, pileus first white, then pale brown to reddish brown with pinkish spots, smooth, glabrous, slightly concentrically zonate, radially veined when dry, margin flat and wavy when fresh, slightly incised when dry, stipe glabrous, whitish becoming ochre when dry, 3-5 cm long, 3-6 mm in diameter, slightly widened toward the pileus, context white and dense, white becoming pale brown when dry, lower side densely hydroid, spines up to 3 mm long, first whitish then pale brown when dry.

Hyphal system dimitic, skeletal hyphae confined to the trama of the spines, hyaline and thick-walled, 3-5 mm diam, more or less parallel, generative hyphae with clamps, thin-walled and strongly branched in the subhymenium, 2-4 mm wide, in the context of pileus and stipe distinctly thick-walled, very sparingly branched and with rather scattered clamps, 3-5 mm diam.

Cystidia not seen, cystidioles present among the basidia, pointed, smooth, thin-walled, 12-14 x 4-5 mm.

Basidia clavate, 12-14 x 4-5 mm with 4 sterigmata and a basal clamp,

Basidiospores 4.5-5 x 2 µm, cylindrical, smooth, hyaline and non-amyloid.

Substrate: On the ground among litter.

Distribution. Known only from the type locality in Cameroon.

Remarks. The whitish to brown colours and the small cylindrical spores characterise this species.

Mycorrhaphium citrinum Ryvarden,
Mem. NY Bot. Garden 49:346, 1994.

Basidiocarp centrally to laterally stipitate, pileus 1-2.5 cm wide, circular to fan-shaped or semi-circular, slightly lobed to deeply incised in one specimen, flat to centrally depressed, citric yellow to pale yellowish-brown, glabrous, slightly concentrically zonate, slightly wrinkled from the centre of the pileus, margin deflexed in dry condition, flat and wavy when fresh, stipe glabrous, bright citric yellow, 1.5-2.5 mm diam and with rhizomorphs from the base., spines densely



Figure 1. *Mycorrhaphium ursinum*, the holotype from above. Photo C. Decock



Figure 2. *Mycorrhaphium ursinum*, the holotype from below. Photo C. Decock.

crowded, pale citric yellow, 1-3 mm long, stipe slightly expanding towards the pileus, centrally to laterally attached, in one specimen split in the top as if three individual pilei have become fused, context white to pale citric yellow in stipe and pileus.

Hyphal system dimitic, skeletal hyphae confined to the trama of the spines, hyaline and thick-walled, 3-5 mm diam, more or less parallel, generative hyphae with clamps, thin-walled and strongly branched in the subhymenium, 2-4 mm wide, in the context of pileus and stipe distinctly thick-walled, very sparingly branched and with rather scattered clamps, 3-5 mm diam.

Cystidia not seen, cystidioles present among the basidia, pointed, smooth, thin-walled, 10-15 x 4-5 mm.

Basidia clavate, 12-15 x 4-5 mm with 4 sterigmata and a basal clamp,

Basidiospores subcylindrical to oblong ellipsoid smooth, hyaline and with a small oil drop, non-amyloid, 3-3.5 x 2-2.5 mm.

Substrate: On the ground among litter.

Distribution. Known only from Zambia.

Remarks. The species is easy to recognize by its stipitate bright citric yellow hydroid basidiocarp.

Mycorrhaphium ursinum Decock & Ryvarden nov. species Index Fung. 558084

Holotype: Africa, Gabon, Ogooué-Ivindo, Ipassa Biosphere Reserve, Parc National de l'Ivindo, near the Ipassa Biological Station, 3. March 2008, on the ground, coll. Cony Decock GA-08-369, Holotype BR, isotype in Fungarium Univ. of Oslo, Norway (O)

Basidiocarp laterally stipitate; pileus up to 5 mm wide, semi-circular and deeply incised in up to 10 narrow lobes, soft when fresh, dense and hard when dry, flat to slightly depressed at stipe attachment, glabrous, dull, cinnamon coloured when fresh, becoming black with age, slightly concentrically zonate, margin flat and wavy, stipe up to 15 mm long, dark cinnamon coloured, densely hirsute, becoming almost hydroid as the hairs become agglutinated in an irregular fashion, spines densely crowded, finely pruinose (strong lens!) initially ochraceous, becoming greyish to almost black with age, dense and with a blackish core, about 1 mm long and up to 100 µm in diameter.

Hyphal system: dimitic, skeletal hyphae confined to the trama of the spines, hyaline and thick-walled, 2-5 mm diam, more or less parallelly arranged in the spines and the spine tomentum, generative hyphae with clamps, thin-walled, 2-4 mm wide.

Cystidia not seen.

Basidia 12-15 x 4-5 mm, clavate with 4 sterigmata and a basal clamp.

Basidiospores globose to subglobose, 2.5-3.5 µm in diameter, smooth, thin-walled and amyloid.

Substrate: On the ground among litter.

Distribution. Known only from the type locality in Gabon, but has probably a wide distribution in the Central African Equatorial forest.

Remarks. The species is easy to recognize by densely hairy, cinnamon coloured stipe and a deeply incised pileus. The globose spores are also distinctive for this African species.

The basidiome of *M. ursinum* reminds one of that of *Auriscalpium dissectum* Maas Geest. & Rammeloo, which also has a deeply incised pileus, a teathed hymenophore, a hairy stipe, and is originating from the rain forest of Central Africa in Democratic Republic of Congo (Maas Geesteranus and Rammeloo 1979, Ryvar den 2001). *Auriscalpium dissectum* is differentiated in having pip- to drop-shaped, slightly echinulatedornamented, larger basidiospores (4.5-5.6 x 3.5-4 µm).

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Some polypores from Akok lowland rain forest reserve in Cameroon

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Abstract

Ceriporia globospora Ryvar den and *Rigidoporus subvinctus* Ryvar den are described as new species from Akok lowland rain forest reserve in Campo province in southern Cameroon.

Introduction

In 1991 the ELF oil company terminated their search for oil in Southern Cameroon and left their camp to the University of Yaoundé. They also set aside funds for research in the reserve they had used. The money was managed by the university which among other things, invited researchers to do research in the reserve. This made it possible to invite among others, mycological experts from abroad. I spent almost two weeks in the reserve with my assistant Dr. M. Nunez from the university of Oslo.

Collecting was done in 2-15 December 1991, and the collections are deposited in the fungarium of Oslo University, Norway (O). The following species did not match any known description and are described as new.

Ceriporia globospora Ryvar den, nova species Index Fung. 558085.

Holotype: Cameroon, Campo province, Akok lowland rain forest reserve, 2.

December 1991, on dead hard wood log, Coll. Ryvar den 30931 in Fungarium O.

Basidiocarps annual, resupinate, 3 x 2 cm, up to 2 mm thick, soft when fresh, pale cinnamon coloured, pores thin walled, angular 3-5 per mm appearing as slightly contracted by drying, slightly irregular, 1-4 per mm, subiculum white, cob webby and thin.

Hyphal system monomitic; generative hyphae hyaline, thin-walled and simple septate, 3-6 µm in diam, running conspicuously parallel with the tube walls.

Basidia not see,

Basidiospores 5-6 µm in diameter globose, hyaline and thin walled, negative in Melzers reagent.

Distribution Known only from the type locality.

Remarks The cinnamon basidiocarps with angular and irregular pores and almost lack of subiculum make this a distinct species.

Rigidoporus subvinctus Ryvar den, nova species Index Fung. 558086.

Holotype: Cameroon, Campo province, Akok lowland rain forest reserve, 2. December 1991, on dead hard wood log, Coll. Ryvar den 30771 in Fungarium O.

Basidiocarps annual, resupinate, 4 x 2 cm, up to 1 mm thick, dense and resinous hard when dry, slightly contracting by drying, pore surface white to pale ochraceous becoming darker towards the subiculum, pores thin walled, angular 3-5 per mm, larger on parts of the sloping substrate, subiculum pale cinnamon, restricted by a dark line towards the substrate, margin lacking.

Hyphal system monomitic; generative hyphae hyaline, thick-walled to almost solid, difficult to find thin walled hyphae with distinct septa, 3-7 μm in diam.

Cystidia not seen.

Basidia not seen,

Basidiospores 3-4 x 2.5-3.5 μm subglobose, hyaline and thin walled, negative in Melzers reagent.

Distribution. Known only from the type locality.

Remarks. The species looks like the wide spread *Rigidoporus crocatus* (Pat.)

Ryvar den, which however has larger globose spores, i. e. 5-6 μm in diameter

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Some new and noteworthy polypores from Costa Rica

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Abstract

Coltricia robusta Vlasák & Ryvarden and *Polyporus laetiporoides* Vlasák & Ryvarden are described as new and keys to Neotropical species of the respective genera are provided. *Inonotus pseudoglomeratus* Ryvarden and *Melanoporella carbonaceous* (Berk. & M. A. Curtis) Murrill, are reported as new to Costa Rica.

List of species

Buglossoporus americanus D. A. Reid, Costa Rica, Santa Eleana, July 2017, on dead hard wood, Coll. 1704/9-J in fungarium PRM, and O. Description in Ryvarden 2016:487.

Coltricia robusta Vlasák & Ryvarden nova species Index Fung. 558087.

Holotype: Costa Rica, Nosara, on living palm, Vlasák 1707/1-J, 1. July 2017, PRM 952194, Isotype in fungarium O.

Basidiocarps annual, centrally stipitate, pileus circular, infundibuliform, 8 cm in diam, up to 8 mm thick in centre, margin entire, deflexed when dry, probably more or less flat when fresh, pileus surface finely velutinate, evenly deep rusty brown dull, with distinct to indistinct concentric zones; stipe cylindrical, 4 cm high and about 7 mm in diameter, dull, finely velutinate, deep reddish brown, pore surface reddish brown, pores thin-walled, angular, 4-5 per mm; tube layer up to 4 mm thick close to stipe, concolorous with the pore surface, context homogenous, thin, up to 4 mm thick, fibrous, deep reddish brown;

Hyphal system monomitic; generative hyphae with simple septa, thinwalled and hyaline when young, later more thickwalled and golden to light rusty brown, branching at right or wide angles, in the hymenium 25 µm in diam, in the context

of pileus and stipe up to 10 µm in diam.

Basidia 15-22 x 4-6, tetrasterigmatic.

Basidiospores 5.5-7 x 5-6 µm, subglobose to broadly elliptic, smooth, golden yellow, negative in IKI.

Substrate. On living palm.

Distribution. Known only from the type locality in Costa Rica.

Remarks. Undoubtedly this new species is related to the wide spread *C.*

cinnamomea, but is separated by smaller pores and spores

(24 per mm and 6.5-8 x 56 µm respectively in *C. cinnamomea*). The substrate is also unusual as the latter species usually grows on the ground.

Key to Neotropical species of *Coltricia*

1. Setae or setal hyphae present *C. hamata*
1. Setae or setal hyphae absent 2
2. Basidiospores longer than 6 µm long 3
2. Basidiospores shorter than 6 µm 7
3. Basidiospores cylindrical, basidiocarps on burnt wood or fire places *C. focicola*
3. basidiospores elliptic, on the ground 4
4. Basidiospores 9-14 µm long, pores 1-3 mm wide *C. montagnei*
4. Basidiospores 6-10 µm long, pores 2-5 per mm 5
5. Basidiocarp usually 3-10 cm in diameter, pileus shiny, hyphae smooth..... 6
5. Basidiocarp less than 2 cm wide, pileus striate, hyphae strongly pruinose
..... *C. pruinata*
6. Basidiospores 6.5-8 µm, pores angular 2-4 per mm *C. cinnamomea*
6. Basidiospores 5.5-7 x 5-6 µm, pores more or less round, 4-5 per mm ... *C. robusta*
7. Basidiospores globose, margin ciliate *C. barbata*
7. Basidiospores elliptic, no cilia along the margin..... 8
8. Basidiospores 2.5-3 µm wide, pores 6-8 µm, context duplex..... *C. fonsecoensis*
8. Basidiospores 3-3.5 µm wide, pores 2-6 per mm, context homogenous 9
9. Pores 4-6 per mm, on the ground in Argentina and Paraguay *C. stuckertiana*
9. Pores 2-4 per mm, on burnt ground in Venezuela *C. pyrophila*

Inonotus pseudoglomeratus Ryvarden, Costa Rica, Santa Elena, July 2017, on hard wood log, Coll. 1707/15-J. in PRM and O. New to Costa Rica, this is second known collection. It was described from Venezuela. Description in Ryvarden 2004: 143.

Melanoporella carbonaceous (Berk. & M. A. Curtis) Murrill, Tarcoles, Villa la Paz, on hard wood stump, 16. April 2017, coll. J. Vlasák 1704, new to Costa Rica. Description in Ryvarden 2015: 429.

Polyporus laetiporoides Vlasák & Ryvarden nov. species, Index Fung. 558088.

Holotype: Costa Rica, Golfito, 16. April 2017, on dead hard wood log, Coll. Vlasák 1704/13 in Fungarium PRM, isotype in Fungarium O.

Basidiocarps annual, laterally stipitate; semicircular, up to 3 cm wide and 3 mm thick, upper surface pale tan or pale brown, faintly radially fibrillose (lens) with tiny darker erect tufts of hyphae, slightly towards the base; pore surface pale ochraceous, pores 7-8 per mm, round, tubes 1 m deep, context white, 1-2 mm thick, homogenous. stipe short, 4 mm long and 5 mm in diameter, glabrous, whitish to very pale ochraceous, attached to the substratum by a mycelial mat.

Hyphal system dimitic; generative hyphae with scattered clamps, up to 4 µm wide, forming a cutis both in the stipe and pilear surfaces; arboriform hyphae hyaline, solid, up to 7 µm wide in basal part with whip like endings, sparingly branched, especially towards the basal part and where they can be up to 150 µm without branching.

Basidia not seen.

Basidiospores 6-8 (9) x 2- 2.5 (3) µm, cylindrical, straight, IKI negative, smooth.

Substrate: Dead hard wood log.

Distribution. Only the type is known, but see Remarks.

Remarks. *P. philippinensis* Berk, which is morphologically similar, differs by having larger pores, up to 2 per mm. *P. grammacephalus* Berk., originally described from the Philippines, has previously been reported from South America (Ryvarden 2016) , but these reports refer to the present new species.

Key to Neotropical species of Group *Favolus* in *Polyporus* s. str.

1. Pileus dark chestnut to bay or deep vinaceous *P. subpurpurascens*
1. Pileus white, deep tan or leather coloured..... 2
2. Pileus white when fresh, darker when dry 3
2. Pileus leather coloured, orange to brown, radially striate or with small hydroid processes or squamules, at least at the base; spores shorter than 9 µm 4

3. Pileus laterally tapering, tessellate to smooth, pores large and irregular; spores 9-12 µm long, common species	P. tenuiculus
3. Pileus smooth, stipe distinct, pores small, 6-7 per mm, spores 6-7 µm long	P. albostipes
4. Pores 2-5 per mm	5
4. Pores 1-2 per mm or larger	7
5. Pileus pale reddish brown with minute black squamules	P. minutosquamosus
5. Pileus differently coloured and without dark squamules, but often with radial lines	6
6. Pileus vinaceous to pale brown, smooth; pores consistently round; spores 5-6 µm long	P. ianthinus
6. Pileus ochraceous, smooth or with minute hyphal tufts at base; pores often slightly elongated; spores 6-8 µm long	7
7. Pileus whitish with hydroid protuberances	P. biskeletalis
7. Pileus ochraceous to tan and smooth, often with radial lines	8
8. Pores 7-8 per mm, more or less round	P. laetiporoides
8. Pores 1-2 per mm, angular	P. philippinensis

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Diversity of wood decay fungi from Henri Pittier National Park, Aragua-Venezuela

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Abstract

Wood decaying fungi from Henri Pittier National Park in Venezuela were sampled from 51 fallen logs in a cloud forest. Sixty 60 species were recorded out of which 54 % were polypores.

Key words: fungi, decay, wood, Venezuela, diversity, Aphyllophorales

Introduction

This study reports a collection of 250 wood decaying fungi from Henri Pittier National Park in Venezuela. Hundred and thirty (130) isolates were identified among fifty (55) different species, fortyone 41 genera, twenty seven 27 families and eleven 11 orders from the phyla Ascomycota and Basidiomycota. The taxonomic classifications are those of Kirk & Ansell (1992).

The two areas studied in the Park were the path Via Guacamaya and the path Via Pico Periquito. Fifty-one fallen logs were randomly selected within these areas in three stages of decomposition. We categorized them in the following patterns or characteristics: Decay I stage (logs have their cortex and the cutting instrument cannot puncture log). Decay II stage (logs have lost some of the cortex and the cutting instrument can puncture partially); and Decay III logs (includes logs that have lost most of their cortex, and the cutting instrument can be introduced easily). Fifty five (55) species were identified as Basidiomycota (84% of the samples), 8 species as Ascomycota (11% of the total collection) while 5% were unidentified. The most common species (collection number in parenthesis) were *Phellinus gilvus* (14), *Datronia caperata* (7), *Trichaptum sector* (5), *Cotylidia aurantiaca* (5), *Lycoperdon molle* (4).

Most species were found in decay log stages II and III. Nine species were commonly found among 25% of the logs, namely *Cotylidia aurantiaca*, *Datronia caperata*, *Lycoperdon molle*, *Phellinus gilvus*, *Rigidoporus microporus*, *Rigidoporus ulmarius*, *Trametes acuta*, *Trametes sector* and *Xylaria scruposa*. Urbina et al. (2001) reported from the Venezuelan Amazon, two of these species, such as *P. gilvus* and *R. microporus* as most common. Ryvar den and Johansen (1984) in Africa, Gilbertson and Ryvar den (1986) in Europe and Ryvar den and Gilbertson (1993) for North America have reported these species showing them to be almost cosmopolitan. Similarly, Lindblad (2001b) also reported *Phellinus gilvus* as widespread on decay logs in a Costa Rica tropical forest. De Jesus (1996) also reported *Phellinus gilvus* and *Phellinus sarcites* in Brazil. Ryvar den (1998) compared the number of species in *Phellinus* from three continents reporting 28 species in Africa, 52 from America, and 32 from Europe.

Recorded species

Ascomycota

Scutellinia scutellata (L.) Lambotte,
Xylaria adscendens Fr.,
Xylaria cfr. *curta* Fr.,
Xylaria cfr. *polymorfa* (Pers.:Fr.) Greville,
Xylaria scruposa (Fr.) Fr.,
Xylaria telfairii (Berk.) Sacc.

Basidiomycota

Agaricales

Cotylidia aurantiaca (Pat.) A.L. Welden,
Conocybe cfr. *siennophylla* (Berk. & Br.) Singer ex Chiari & Papetti,
Dermoloma atrobrunneum (Dennis) Singer,
Favolaschia flava (Bres.) Kuntze,
Gymnopilus lateritius (Pat.) Murrill,
Hypholoma subviride ((Berk. & M.A. Curtis) Dennis,
Hygrocybe parvula (Peck.) Pegler Murrill,
Lycoperdon molle Pers.
Neopaxillus sp.
Panaeolus cfr. *papilionaceus* (Fr.) Quel.,
Pholiota discolor Sacc.

Aphyllophorales

Hymenochetaceae

Cyclomyces tabacinus (Mont.) Pat.,

Phellinus gilvus (Schwen.) Pat.,

Phellinus sarcites (Fr.) Ryvarden.

Polyporaceae:

Antrodiella hydrophila (Berk. & Curt.) Ryvarden,

Corioloopsis rigida (Berk. & Mont.) Murrill,

Datronia caperata (Berk.) Ryvarden,

Gloeoporus thelephoroides (Hook.) G. Cunn.,

Junghuhnia sub-undata (Murrill) Ryvarden,

Lentinus crinitus (L.: Fr.) Fr.,

Nigroporus vinosus (Berk.) Murr.

Perenniporia isabellina (Pat.) Ryvarden,

Perenniporia medulla-panis (Jacq.) Donk,

Polyporus dictyopus Mont.,

Polyporus tenuiculus (Beauv.) Fr.,

Porogramme albocincta (Cooke & Massee),

Rigidoporus aureofulvus (Lloyd) P.K. Buchanan & Ryvarden,

Rigidoporus microporus (Sw.) Overeem,

Rigidoporus ulmarius (Sowerby) Imazeki,

Schizopora flavipora (Berk & M.A. Curtis ex Cooke) Ryvarden.

Trametes acuta (Berk.) Imazeki,

Trametes modesta (Kunze ex Fr.) Ryvarden,

Trichaptum sector (Ehrenb.) Kreisel,

Corticiaceae

Phlebia chrysocreas (Berk. & M.A. Curtis) Burdsall,

Phlebia rosea (Henn.) Hjortstam & Ryvarden,

Podoscypha nitidula (Berk.) Pat.,

Scytinostroma cfr. *duriusculum* (Berk. & Br.) Donk,

Stereum ostrea (Blume & T. Nees) Fr.,

Trechispora farinacea (Pers.:Fr.) Liberta,

Tubulicium vermiferum (Bourdott) Oberw.

Heterobasidiomycetes

Auricularia mesenterica (Dicks) Pers.

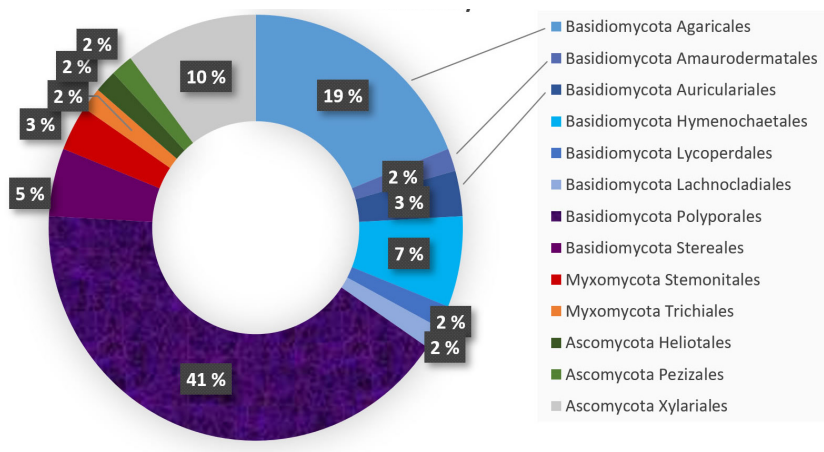


Figure 1: Percentage distribution of the Phyla and Orders of species reported in this study.

Common species

Among the poroid species, most were from Coriolaceae i.e (45%). The most commonly recorded genera were *Datronia*, *Perenniporia* and *Rigidoporus* including the following species: *Datronia caperata*, *Perenniporia isabellina*, *Perenniporia martius*, *Perenniporia medulla-panis*, *Cotylidia aurantiaca*, *Rigidoporus microporus*, *Rigidoporus ulmarius*. In addition, some species genera from Corticiaceae were also represented, such as *Hyphoderma*, *Phanaerochaete* and *Scytinostroma*, including species like *Trechispora farinacea* and *Schizopora flavipora* respectively. The species diversity reported here is similar to one reported from North America by Gilbertson (1996). The most common families were Corticiaceae, Hymenochaetaceae and Polyporaceae (Figure 2) and the most common genera were *Antrodiella*, *Coriolopsis*, *Cyclomyces*, *Datronia*, *Gloeophyllum*, *Junghuhnia*, *Nigroporus*, *Perenniporia*, *Phellinus*, *Polyporus*, *Rigidoporus*, *Schizopora*, *Trametes*, *Trechispora* and *Trichaptum*.

Frequency

The only Neotropical endemic species recorded was *Amauroderma mesenterica* demonstrating that many tropical wood inhabiting species are widespread. The major number specimens i.e forty-six 46 were collected only once at a single log. Seven were collected in two logs; four species on three logs; and one on five logs. The most common species collected only once are *Antrodiella hydrophilla*, *Amauroderma mesenterica*, *Conocybe* cfr. *siennophylla*, *Coriolopsis rigida*, *Cyclomyces tabacinus*, *Dermoloma* cfr. *atroberum*, *Favolaschia flava*, *Gloeoporus dichrous*,

Gymnopilus lateritius, *Hypholoma subviride*, *Junghuhnia carneola*, *Junghuhnia sub-undata*, *Lentinus crinitus*, *Lepiota subflavescens*, *Loweporus* sp., *Mycena* sp., *Neopaxillus* sp., *Nigroporus vinosus*, *Panaeolus* cfr. *papilionaceus*, *Perenniporia isabellina*, *Perenniporia martius*, *Perenniporia medulla-panis*, *Phlebia cryscreas*, *Phlebia rosea*, *Pholiota discolor*, *Podoscypha nitidula*, *Podoscypha tenuicola*, *Polyporus dictyopus*, *Rigidoporus aureofulvus*, *Trametes acuta*, *Trametes modesta*, *Trechispora farinaceae*, *Tubulicium vermiferum*, *Xylaria adscendens*, *Xylaria* cfr. *curta*, *Xylaria* cfr. *polymorfa* and *Xylaria telfairii*.

The following ones were collected at two logs: *Gloeoporus thelephoroides*, *Gloiothela* sp., *Hyphodontia* sp., *Rigidoporus ulmarius*, *Stereum ostrea*, *Schizopora flavipora* and *Trichaptum sector*. Those found on three logs were *Datronia caperata*, *Phellinus gilvus*, *Rigidoporus microporus* and *Xylaria scruposa*. *Cotylidia aurantiaca* was the only one recorded from five different decaying wood logs.

The log with the highest number of species of fungi were one with 17 species. *Phellinus gilvus* was the only species recorded from logs in all three decay stages. This aligns with the studies reported by Hoiland & Bendiksen (1996) and Lindblad (1998 and 2001a), where the number of species reported per log and the size of the logs are proportionally correlated, i.e.: the bigger the log the higher the number of fungi collections found in the log.

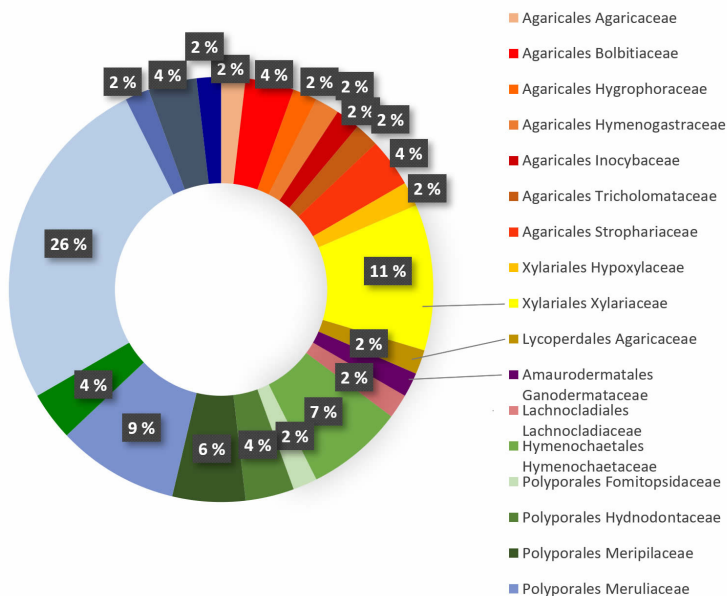


Fig. 2. Percentage of orders and families from the species reported in this study.

Species	Stage I	Stage II	Stage III	Species	Stage I	Stage II	Stage III
<i>Coriolois rigida</i>				<i>Paxillus guttatus</i>			
<i>Cyclomyces tabacinus</i>				<i>Phlebia rosea</i>			
<i>Gloeoporus dichrous</i>				<i>Phlebia chrysocreas</i>			
<i>Gloeoporus thelephoroides</i>				<i>Polyporus dictyopus</i>			
<i>Hyphodontia sp</i>				<i>Porogramme albocincta</i>			
<i>Lentinus crinitus</i>				<i>Rigidoporus microporus</i>			
<i>Lycoperdon molle</i>				<i>Scytinostroma cfr. duriusculum</i>			
<i>Nigroporus vinosus</i>				<i>Stereum ostrea</i>			
<i>Perenniporia martius</i>				<i>Trametes modesta</i>			
<i>Phellinus gilvus</i>				<i>Trechispora farinacea</i>			
<i>Pholiota discolor</i>				<i>Xylaria adscendens</i>			
<i>Podoscypha nitidulum</i>				<i>Xylaria cfr. curta</i>			
<i>Polyporus tenuicola</i>				<i>Xylaria cfr. polymorpha</i>			
<i>Rigidoporus aurantiaca</i>				<i>Xylaria scruposa</i>			
<i>Rigidoporus ulmarius</i>				<i>Antrodiella hydrophila</i>			
<i>Schizopora flavipora</i>				<i>Datronia caperata</i>			
<i>Scutellinia scutellata</i>				<i>Dermoloma atrobrunneum</i>			
<i>Trametes acuta</i>				<i>Favolaschia flava</i>			
<i>Trichaptum sector</i>				<i>Gloiothele sp</i>			
<i>Auricularia mesenterica</i>				<i>Junghuhnia carneola</i>			
<i>Cotylidia aurantiaca</i>				<i>Junghuhnia sub-undata</i>			
<i>Conocybe siennophylla</i>				<i>Loweporus sp</i>			
<i>Gymnopilus lateritius</i>				<i>Mycena cp.</i>			
<i>Hygrocybe parvula</i>				<i>Perenniporia isabellina</i>			
<i>Hypholoma subviride</i>				<i>Perenniporia medulla-panis</i>			
<i>Hypoxydon sp.</i>				<i>Phellinus sarcites</i>			
<i>Lepiota subflavescens</i>				<i>Phlebia chrysocreas</i>			
<i>Neopaxillus sp.</i>				<i>Tubulicium vermiferum</i>			
<i>Panaeolus cfr. Papiliomacrus</i>				<i>Xylaria telfairii</i>			

Table 1. Distribution of the fungal species following the successions and the decomposition stage of the logs studied

Successions of fungi decaying wood logs

The succession of fungal species is given in Table 2. It can be observed that the majority of species was found in stage II. However, there were a higher number of species in stage III. Five logs in Stage I progressed to Stage II after 12 months. Similarly, 7 logs in stage II decayed to stage III, and became part of the soil. This could explain why some species were recorded in different stages of decay (I, II or III). Examples are *Cotylidia aurantiaca*, *Gloeoporus thelephoroides*, *Lycoperdon molle*, *Phellinus gilvus*, and *Schizopora flavipora* (all of these were found in decay wood logs on stages I and II). Similarly, species from decaying wood logs in stages II and III were *Phellinus gilvus* and *Phlebia rosea*. In the seven logs in stage III the following species were collected, *Porogramme albocincta*, *Rigidoporus microporus*, *Scytinostroma cfr. duriusculum*, *S. axifera* var *axifera* and *X. scruposa*.

Statistical analysis suggests that there is no significant difference between the number of species found in the three decay stages studied (ANOVA 1 via, $F=6.96$, $P=0.01$). However, we can infer that the decaying rate of wood in this forest floor is high, and fast decomposition of wood logs is taking place due to the observations found during the time of this study.

The succession of fungi found across the logs is present in Table 1. It can be observed that the majority of the species determined and collected were found in wood decay log in stage III. Following Harmon et al. 1995, the precipitation does not proportionally correlate to the net rate of decomposition of the logs; in contrast, the average temperature seems to be affecting it. At Henri Pittier National Park, the annual average temperature fluctuates between 20-21 °C (Huber 1986); and it has been suggested that in tropical forest with those temperatures the constant decomposition rate is around 0.15% of decomposition of fallen wood logs per year (Chambers et al. 2000), this indicates that the decomposition rate may be high. This correlates with the rapid degree of decomposition that has been observed in the logs selected in this study.

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Cotylidia P. Karst – a synopsis

by

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Abstract

A synopsis of the stereoid genus *Cotylidia* is provided with descriptions of 9 accepted species with a key to them.

COTYLIDIA P. Karsten,

Rev. Mycol. Toulouse 3: 22, 1881.

Basidiocarps terrestrial or on woody debris, coriaceous, spatulate, dimidiate, flabellate or infundibuliform to pseudoinfundibuliform, adjacent basidiocarps sometimes becoming confluent, upper surface usually white, yellowish or pale brown, becoming pale fawn, yellowish ochre or purplish brown, hymenial surface smooth, white, cream or bright yellow in fresh specimens, minutely setulose under a lens.

Hyphal system monomitic, generative hyphae with clamps or with simple septa, smooth, cystidia always present in the hymenium and, in some species also on the pileus and stipe, basidia clavate, basidiospores elliptic, thinwalled, hyaline, smooth and non-amyloid. Cosmopolitan genus.

Type species: *Cotylidia undulata* (Fr.) P. Karst.

Remarks. The genus is characterized by a monomitic hyphal system with simple septate generative hyphae and smooth, thin walled, cylindrical cystidia.

Key to species

1. Basidiocarps whitish to bright yellow when fresh, becoming ochraceous,
Neotropical species **C. aurantiaca**
1. Basidiocarps differently coloured, predominantly temperate to boreal **2**
2. Basidiocarps often rosette like, 35 cm high, pileus 1 cm thick or more,
basidiospores $79 \times 3.54 \mu\text{m}$ **C. pannosa**
2. Basidiocarps infundibuliform to spatulate, 12 cm high, 1-2 mm thick,
basidiospores smaller **3**
3. Japanese species **4**
3. Wide spread species **5**

4. Generative hyphae with clamps, basidiocarp reddish **C. harmandii**
 4. Generative hyphae with simple septa, basidiocarp white **C. combaensis**
5. Growing on mosses, spores 5-7.5 μm long **C. muscigena**
 5. Growing on dead wood or on the ground, spores shorter than 6 μm long **6**
6. Basidiocarp whitish to ochraceous or straw coloured, spores 4-6 μm long, North American species **C. diaphana**
 6. Basidiocarps ochraceous to brown **7**
7. Basidiocarps white to ochraceous, basidiospores 2.7-3.5 μm wide, cystidia absent on pileus and stipe **C. diaphana**
 7. Basidiocarps, greyish to brown, basidiospores 1.5-2.5 μm wide and cystidia present also on pileus and stipe..... **8**
8. Common wide spread species, spores elliptic 4-5 2-2.5 μm **C. undulata**
 8. Rare species, known only from Italy, spores subglobose 4-5 x 3-3.5 μm **C. marsicana**

Cotylidia aurantiaca (Pers.) Welden,

Lloydia 2, 40, 1958. - *Thelephora aurantiaca* Pers., Gaudichaud, Voyage sur l'Uranie Botany p. 176, 1827. - *Thelephora spectabilis* Lev., Ann. Sci. nat. Series III, 2:206, 1844. - *Thelephora decolorans* Berk. & M. A. Curtis, J. Linn. Soc. (Bot.), 10:328, 1868. - *Thelephora sericella* Berk. & M. A. Curtis, J. Linn. Soc. (Bot.) 10:328, 1868. - *Thelephora affinis* Berk. & M. A. Curtis, J. Linn. Soc. (Bot.) 10: 328, 1868. - *Thelephora quisquiliaris* Berk. & M. A. Curtis, J. Linn. Soc. (Bot.) 10, 239, 1868. - *Stereum alutaceum* Berk. & Cooke, J. Linn. Soc. (Bot.) 15:388, 1876. - *Stereum xanthellum* Cooke, Grevillea 9:12, 1880. - *Stereum albobipitatum* Lloyd, Lloyd Mycol. Writ. 4:22, 1913.

Basidiocarps 0.63.5 cm high, 0.24.5 cm wide, stipe up to 1.5 cm. long and 1.5 mm wide, solitary or gregarious, with a papery texture, commonly spatulate or reniform, less often pseudo-infundibuliform or truly infundibuliform, adjacent basidiocarps frequently confluent, pilei bright yellow when fresh, becoming ochraceous or ochraceous-straw coloured when dry, margin usually fimbriate or the pileus may split radially, when dry the upper surface has a distinct silky sheen with numerous radiating fibrils; hymenial surface bright yellow when fresh, yellow ochre or creamy ochre on drying, context very thin.

Hyphal system monomitic, generative hyphae, 38 μm in diameter, slightly thick-walled, hyaline or pale yellowish with simple septa.

Cystidia 626 μm wide and up to 125 μm long, often projecting up to 65 μm beyond the basidia, cylindrical, clavate or slightly capitate to subglobose or pyriform, some with 1 to 3 transverse and often somewhat constricted septa, walls slightly thickened.

Basidia 2639 x 35 µm, cylindrical or clavate.

Basidiospores (5.5) 68.5 (9) x 33.75 (4) µm, elliptic.

Substrata. Most frequent on woody substrates, but also terrestrial.

Distribution. Known only from tropical America, where it is common.

Remarks. This is a small, soft, beautiful, and white to yellow species, which may be locally common, often occurring in large numbers on the forest floor.

Cotylidia carpatica (Pilát) Huijsman,

Bull. Soc. Mycol. France 70: 57, 1954. — *Skepperia carpatica* Pilát, Bull. Soc. Mycol. France 43: 52, 1927.

Basidiocarps laterally stipitate, stipe 2 - 10 mm high, and up to 0.3 mm wide, tough, pubescent, pileus thin, reniform or flabelliform to broadly spathulate, margin fringed to undulating, 2 to 7.5 mm wide, pale brownish when fresh, hymenial surface smooth, pilose by protruding cystidia.

Hyphal system monomitic, hyphae simple-septate, mostly 2–2.5 µm in diam., thin-walled.

Cystidia abundant in the hymenium, cylindrical, 50–70 × 5–8 µm, projecting up to 50 µm, similar cystidia occur on the pileus and on the stipe but then slightly more thick-walled.

Basidia 12–16 × 3–4 µm narrowly clavate.

Basidiospores 3–4 × 1.5–2 µm, elliptic.

Habitat. Among mosses in moist forest.

Distribution. Only found three times, the type locality in the Carpathian mountains, also Netherlands, and France.

Remarks. The species is similar to *Cotylidia undulata* and differs chiefly by the lateral stipe and smaller spores.

Cotylidia diaphana (Schwein.) Lentz,

US Dept. Agric. Monograph 24:12, 1955. - *Thelephora diaphana* Schwein. in Berk. & W. A. Curtis, J. Acad. Nat. Sci. Phil. Ser. II, vol. 2:278, 1854.

Basidiocarps 1.5–4 cm high, 0.83 cm wide, usually solitary, thin, coriaceous, frequently infundibuliform more rarely spatulate, sometimes with pilei split into lobes that then fuse together again, to form a complicated basidiocarp. Adjacent basidiocarps may also fuse to form compound basidiocarps, pileus white to pale cream when fresh, becoming darker, to straw-coloured, occasionally with darker bands, smooth or with fine radiating fibrils which may be more fibrous to strigose towards the base, hymenial surface smooth to slightly wrinkled white to ochraceous-yellow when fresh, becoming pale reddish-brown in some specimens, usually decurrent on the stipe, stipe to 2.5 cm. long and 1–4 mm wide, white, and finely velutinate to tomentose towards the base.

Hyphal system monomitic, generative hyphae 37 µm in diameter, hyaline or very pale yellowish, with simple septa.

Cystidia up to 125 µm long and 8-15 µm wide, projecting up to 80 µm beyond the basidia, cylindrical to clavate, with slightly thickened walls, some with 1 to 3 transverse, often somewhat constricted septa.

Basidia 22-30 x 35 µm, cylindrical or clavate, with 4 sterigmata.

Basidiospores 4-6 (7) x 2.5-3.5 µm, elliptic.

Substrata. On the ground or on wood of hardwood trees.

Distribution: North America and East Siberia.

Remarks. This species may be looked upon as the temperate, boreal, counterpart of *C. aurantiaca*, separated from that species by shorter basidiospores.

Cotylidia harmandii (Lloyd) D.A. Reid,

Beiheft Nova Hedwigia 18: 76, 1965. - *Stereum harmandii* Lloyd, Mycol. Writings 4:22, 1913.

Basidiocarps 2-4 cm high, 0.83 cm wide, usually solitary, thin, translucent, flabelliform, often split along the margin, pileus pinkish to reddish when dry, smooth, hymenial surface smooth dark reddish, stipe to 2.5 cm. long and 1-4 mm and pinkish.

Hyphal system monomitic, generative hyphae 38 µm in diameter, hyaline and with clamps.

Cystidia abundant, cylindrical, smooth, up to 80 µm long and 7-10 µm wide, projecting up to 50 µm beyond the basidia, cylindrical to clavate, with slightly thickened walls, some with 1 to 3 transverse septa.

Basidia 20-30 x 4-6 µm, cylindrical to clavate.

Basidiospores 6 x 3, elliptic, only one seen acc. to Reid (1965:76).

Substrata. On the ground.

Distribution: Known only from the type locality in Japan.

Remarks. The small pinkish to reddish basidiocarps, and if this is also the colour of fresh basidiocarps, it will be a good field character.

Cotylidia komabensis (Henn.) D.A. Reid,

Beiheft Nova Hedwigia 18: 77, 1965. - *Thelephora komabensis* Henn., Bot. Jahrb. 31:736, 1902.

Basidiocarps 1-4 cm high, 13 cm wide, usually solitary, thin, translucent, flabelliform, spatulate occasionally infundibuliform, pileus white, to cream, smooth, hymenial surface smooth, whitish to cream to pale ochraceous, stipe lateral, up to 1 cm. long, pale cream, tomentose, especially towards the base which is swollen in the type.

Hyphal system monomitic, generative hyphae 36 µm in diameter, hyaline and simple septate.

Cystidia abundant, cylindrical, smooth, up to 100 µm long and 7-10 µm wide, projecting up to 40 µm beyond the basidia,

Basidia 20-30 x 35 µm, cylindrical or clavate, with 4 sterigmata.

Basidiospores 6 -8.5 x 2.5 -3.5 µm, elliptic to slightly flattened on one side. inwalled and hyaline.

Substrata. On the ground.

Distribution: Known only from Japan.

Remarks. The large spores and the whitish colours combined with a tomentose stipe characterize this rare species. The description is based on two collections only, thus, it is probably not covering the whole morphological variation.

Cotylidia marsicana Lonati,

Micol. Veg. Medit. 5: 3, 2000.

Basidiocarps more or less centrally stipitate, infundibuliform, 5–15 mm wide and 3–8 mm high, margin lobed, undulating, fimbriate, basidiomata white or with a isabellinous tinge.

Hyphal system monomitic, simple septate, hyphae uniformly 2–4 μm wide.

Cystidia cylindrical, 40–60 $\times$ 4–6 μm , thin-walled, hyaline.

Basidia 15–20 $\times$ 4–5 μm , narrowly clavate.

Basidiospores 4–5 $\times$ 3–3.5 μm , broadly elliptic.

Habitat. On burned wood of *Castanea sativa* on the ground.

Distribution. Only known from the type locality in Italy.

Identification. Differs from other species of the genus by the broadly elliptic spores.

Remarks. Little known species. The description is drawn from the protologue. If the habitat on burned wood is typical, it makes this species differ from other members of the genus, which allmost are all associated with mosses.

Cotylidia muscigena L. Remy,

Bull. Soc. Mycol. France 80: 469, 1964.

Basidiocarps pileate, semi-infundibuliform and deeply incised, about 1.5 cm high and 1 mm thick, pileus thin, ca 2 $\times$ 1 cm, translucent, whitish to pale ochraceous, slightly zonate, pilose above by projecting pilocystidia (lens), margin involute, hymenial surface smooth, setulose under the lens, stipe short, whitish, hairy by hyphae and numerous filiform caulocystidia.

Hyphal system monomitic, hyphae thin-walled, simple-septate, straight, about 2 μm wide, sparsely branched in the trama, densely branched and interwoven in the subhymenium.

Cystidia numerous, in the hymenium thin-walled or slightly thick-walled, originating in the trama, up to 120 μm long and about 10 μm wide, rarely septate, on the pilear surface numerous filiform pilocystidia, as a rule not septate, on the stipe as filiform caulocystidia with or without septa, up to 150 μm long.

Basidia 15–20 $\times$ 4–5 μm , narrowly clavate.

Basidiospores 5–7.5 $\times$ 2–2.5 μm , subcylindrical.

Habitat. On dead mosses.

Distribution. This is a rare species and only a few collections are known, but found north to Northern Norway, so it is probably widespread, but overlooked.

Remarks. The habitat on mosses is characteristic. This species seems to be well distinguished from *C. undulata*, which is grey or greyish brown and has a regular infundibuliform basidiocarp. *C. carpatica* has smaller spores.

Cotylidia pannosa (Sowerby: Fr.) D. A. Reid,

Nova Hedwigia Beih. 18:81, 1965. - *Thelephora pannosa* Sowerby: Fr., Syst. mycol. 1:430, 1821. - *Helvella pannosa* Sowerby, Col. Engl. fung. 2:pl.155, 1791. - *Cotylidia pallida* (Pers.) Boidin, Rev. Mycol. 24:201, 1959.

Basidiocarp 35 cm, irregularly infundibuliform, then confluent and often becoming more or less like a rosette, at first white, later more yellowish, upper surface radiately fibrillose, hymenial surface setulose (lens), irregularly veined, initially white, then yellowish to ochre after drying, stipe short or inconspicuous, covered at the base by a whitish tomentum of hyphae.

Hyphal system monomitic, 34 µm wide, hyphae with thin or slightly thickened walls, simple septate, arranged parallel in the trama, irregularly interwoven in the subhymenium.

Cystidia (pseudocystidia) 100150 x 1012 µm, tubular-cylindrical, thinwalled, apically rounded, strongly projecting, usually abundantly present.

Basidia 50 x 57 µm, subcylindrical, with 24 sterigmata.

Basidiospores 79 x 3.54 µm, elliptic.

Substrata. On soil in hard wood forests.

Distribution. A rare species, known from a few states in the northern United States. In Europe known from England, France, Sweden and Denmark.

Cotylidia undulata (Fr.) P. Karsten.

Rév. Mycol. Toulouse 3:22, 1881. - *Thelephora undulata* Fr., Elench. fung. 1:164, 1828.

Basidiocarp 0.51.5 cm high, 0.51.5 cm wide, stipitate, infundibuliform, pileus thin, indistinctly zonate, greyish to greyishbrown, upper side smooth, fibrillose near the margin with radiating hyphae and pilocystidia (lens), hymenium smooth or slightly veined, greyish or pale ochraceous, setulose (lens) due to projecting cystidia, stipe about 0.5 cm high and 1 mm wide, greyish white, appearing finely hairy due to projecting hyphae and caulocystidia.

Hyphal system monomitic, hyphae up to 3 µm wide, simple septate, thinwalled, straight, parallel, sparsely branched and distinct in the trama, but densely branched, interwoven and indistinct in the subhymenium.

Cystidia (pseudocystidia), 5070 x 510 µm, subcylindrical, apically rounded, with thin or slightly thickened walls, present in the hymenium and project above it. Pileo- and caulocystidia present, cylindrical, thin walled up to 120 µm long.

Basidia 1520 x 45 µm, narrowly clavate.

Basidiospores 45 x 22.5 µm, narrowly elliptic.

Substrata. On soil in dry biotopes, sometimes on old fire sites, often associated with mosses, especially those of the genus *Polytrichum*.

Distribution. Circumpolar in the temperate zone, but apparently rather rare.

Excluded species

Cotylidia aculeata (Berk. & M.A. Curtis) Lentz, *Stereum* and allied genera of fungi in the upper Mississippi valley: 11, 1955.

= *Podoscypa aculeata* Berk. & M. A. Curtis.

Cotylidia cyphelloides (Berk. & M.A. Curtis) A.L. Welden, *Lloydia* 21: 42, 1958.

= *Cyphellostereum pusiolum* (Berk. & M. A. Curtis) D. Reid.

Cotylidia decolorans (Berk. & M.A. Curtis) A.L. Welden, *Lloydia* 21: 41 (1958).

= *Nomen confusum*, based on a mixed collection, see D. Reid 1965:94.

Cotylidia guttulata L. Remy, *Bull. Soc. é Mycol. France* 80: 579, 1965.

= *Cotylidia muscigena* f. *guttulata* (Remy) Moreau, Wullb. & Courtec. *Doc. Mycol.* 34:67, 2008.

Cotylidia hartmannii (Mont.) A.L. Welden, *Lloydia* 21: 41, 1958.

= *Hydnopolyporus hartmannii* (Mont.) D. A. Reid.

Cotylidia pallida (Pers.) Boidin, *Rev. Mycol.* 24:201, 1959.

= *Cotylidia pannosa* (Sowerby.Fr.) D. A. Reid.

Cotylidia pusiola (Berk. & M.A. Curtis) A.L. Welden, *Flora Neotrop. Monogr.* 106: 27, 2010.

= *Cyphellostereum pusiolum* (Berk. & M. A. Curt.) D. Reid.

Cotylidia pertenuis (Skovst.) Boidin, *Rev. Mycol. (Paris)* 24: 202, 1959.

= *Pseudocraterellus sinuosus* (Fr.) D. Reid.

Cotylidia radicans (Berk.) Boidin, *Fl. icon. Champ. Congo*: p. 189, 1961.

= *Stereopsis radicans* (Berk.) D. Reid.

Cotylidia sparassoides (Henn.) Boidin, *Rev. Mycol. (Paris)* 24: 204, 1959.

= *Stereopsis sparassoides* (Henn.) D. Reid.

Cotylidia spectabilis (Lév.) Courtec., *Mycotaxon* 57: 49, 1996.

= *Cotylidia aurantiaca* (Pers.) Welden, teste D. Reid 1965:60.

Cotylidia vitellina (Plowr.) Lundell, *Fungi Exsiccati*, fasc. 29:52, 1947.

= *Stereopsis vitellina* (Plowr.) D. Reid.

Literature

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

The genus *Cymatoderma* - a synopsis

by

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Introduction

The genus *Cymatoderma* Jungh., is a small genus of stipitate tropical stereoid species. D. Reid provided a fine taxonomic survey of the genus (1965) in his monumental book on stipitate stereoid fungi. However, the book is firstly rather difficult to find and secondly, rather expensive. However, it includes, in addition to descriptions also long discussions concerning taxonomic concepts and vague definitions based on old names. Thus, it has proven to be a little complicated to use for practical identifications it was felt that it could be useful to provide a synopsis of the known species in the genus.

CYMATODERMA Jungh.,

Tijdschr. nat. Gesch. 7, 290, 1840.

Basidiocarps lignicolous, coriaceous, dimidiate, flabellate, infundibuliform, with adjacent basidiocarps frequently becoming confluent, upper surface of the pileus covered with a very thick felty tomentum which may be much thicker than the context. In some species the surface below the tomentum is covered with radiating, knife-like, sharp edged ridges but these may be almost completely obscured by the density of the tomentum, except towards the pileal margins, hymenial surface smooth, warty or spiny, and with folds, ridges, or undulations, stipe lateral or central. Hyphal system di- or trimitic; generative hyphae frequently of two kinds 1. thin-walled, hyaline, branched, and with clamp connections or 2. very thick-walled with the lumen often obliterated; skeletal hyphae very thick-walled, subhyaline or pale brown; binding hyphae thick walled. Encrusted cystidia present in some species, gloecystidia present in all species, basidia clavate, usually 4-spored, basidiospores broadly elliptical to subglobose thin-walled, hyaline, non-amyloid. On dead hardwoods, pantropical genus with a white rot.

Type species: *Cymatoderma elegans* Jungh.

Taxonomic synonyms:

Cladoderris Berk., Lond. J. Bot. 1:152, 1842.

Actinostroma Klotzsch, Nova Acta Acad. Leop. Carol. 19 (Suppl.1) 23: 6, 1843.

Beccariella Ces., Atti Accad. Sci. fis. mat. Napoli 8: 95, 1879.

Remarks. Species of the genus are usually easy to recognize in the field because of the large, fleshy basidiocarps with a tomentose to densely hairy pileus, and, in most species, ribs or folds on the lower side. *Podoscypha*, a genus similar to *Cymatoderma*, has species with much smaller basidiocarps, pilei which are smooth or only sparsely covered with simple cystidia and a smooth hymenial surface.

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..... **C. dendriticum**
5. Hymenial surface with occasional ribs but with numerous small protuberances, context greyish white to wood-coloured, gloecystidia few, subhymenial hyphae strongly encrusted **C. fuscum**
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8. Spores 6.5-9 x 4-5 μm , elliptic **C. elegans**
8. Spores 3-4 x (2-) 2.5-3 (-3.5) μm , subglobose **C. dendriticum**

Cymatoderma africanum Boidin,

Bull. Bot. Jard. Brux. 30:306, 1960.

Basidiocarp up to 12 cm high, 10 cm wide and 5 cm deep, folded flabellate to truly funnel shaped, pileus pinkish brown to pale brown, very finely velutinate and with numerous radiating furrows, hymenial surface creamy-white to ochraceous, densely covered with radiating ridges.

Stipe up to 7 cm long, 4 mm wide, brownish tomentose, arising from a buried sclerotium.

Hyphal system dimitic, generative hyphae 2-5 μm wide, with clamp connections, skeletal hyphae 3-5 μm wide.

Cystidia absent.

Gloeocystidia abundant, up to 11 μm wide, undulating, thin-walled, with swollen bases, narrowing toward the obtuse apices.

Basidia not observed properly.

Basidiospores 6.5-8 x 2.7-3.2 μm , subcylindrical to narrowly elliptic.

Substrata: On the ground from a buried sclerotium.

Distribution: Known only from West Africa.

Remarks. The species is recognized by the sclerotium, its distribution and the spores being more elongated and larger than those of *C. sclerotiioides* which has similar basidiocarps.

Cymatoderma blumei (Lev.) D. A. Reid,

Kew Bull. 13:521, 1958. - *Cladoderris blumei* Lev., Ann. Sci. Nat. Ser. III, 2:213, 1844.

Basidiocarp up to 10 cm high, 12 cm wide, thin, pliable, dimidiate to flabellate to pseudoinfunduliform with a short lateral stipe, pileus whitish when fresh becoming brownish by drying, glabrous, and covered with conspicuous, dense radiating knife like edges, hymenial surface whitish, cream coloured to ochraceous with brownish tones when dry, covered with densely crowded radiating ribs

Stipe lateral and short, almost absent but at point of attachment covered with a dense light coloured tomentum.

Hyphal system dimitic, generative hyphae 2-5 μm wide, with clamp connections, skeletal hyphae 3-6 μm wide.

Cystidia present, thick walled, apically encrusted, variable form subcylindrical to subglobose, 17-40 x 6-12 μm .

Gloeocystidia abundant, up to 12 μm wide, undulating, thin-walled, with swollen bases.

Basidia 18-30 x 4.5-6 μm , tetrasterigmatic.

Basidiospores 5-7 x 2-3 μm , subcylindrical to narrowly elliptic.

Substrata: On dead wood.

Distribution: Asia, i.e. Java, Malaya and Philippine Islands.

Remarks. The species is recognized by its encrusted metuloid cystidia and distribution.

Cymatoderma caperatum (Berk. & Mont.) D. A. Reid,

Kew Bull. 10:635, 1955. - *Thelephora caperata* Berk. & Mont., Ann. Sci. Nat. Ser 3, 11:241, 1849. - *Stereum goliath* Speg. Ann. Soc Sci. Argent. 17:77, 1884. - *Stereum hylocrater* Speg. Ann. Soc Sci. Argent. 17:77, 1884.

Basidiocarp 4-19 cm high, 3-12 cm wide, thin, pliable, tough, usually infunduliform, with a central stipe, often confluent. Pilei covered with a thick, straw coloured to golden or rusty brown tomentum under which the surface is radially covered in furrows and sharp ridges, hymenial surface creamy-white to flesh coloured, becoming rusty cream or ochraceous with a pinkish tinge. In dried specimens the surface is covered with obtuse, radiating folds these tending to branch toward the margin.

Stipe central, often very short or rudimentary, occasionally well developed, covered with a brownish tomentum and attached to the substrate by a small basal disc.

Hyphal system dimitic, generative hyphae 2-4 µm wide, with clamp connections, skeletal hyphae 3-5 µm wide. Tomentum comprised of generative hyphae with clamps at intervals along the entire length.

Cystidia absent.

Gloeocystidia up to 11 µm wide, undulating, thin-walled, with swollen bases, narrowing toward the obtuse apices, frequently constricted at intervals and appearing irregularly moniliform.

Basidia 30-45 x 4-7 µm, clavate, with 4 sterigmata.

Basidiospores 7.5-12 x 2.5-4 (-4.5) µm, hyaline, subcylindrical to narrowly elliptic.

Substrata: on dead hard wood.

Distribution: American species known from Argentina to southern United States.

Remarks. The large spores and its distribution characterize the species.

Cymatoderma dendriticum (Pers.) D, A, Reid,

Kew Bull. 13, 523, 1958. - *Thelephora dendritica* Pers. in Gaudichaud, Voyage sur l'Uranie Botany 176, 1826. - *Actinostroma crassum* Klotzsch, Nova Acta Acad. Leop. Carol. 19, (Suppl. 1), 237, 1843. - *Cladoderris candolleana* Lev. Ann. Sci. nat., Series III, 5, 153, 1846. - *Becariella trailii* Cooke Grevillea 20, 33, 1891. - *Cladoderris imbricata* Pat., Bull. Soc. mycol. Fr. 38, 86-7, 1922. - *Stereum fenixii* Lloyd, Lloyd Mycol. Writ. 7: 1115, 1922.

Basidiocarps up to 10.5 cm from stalk to margin, and 20.5 cm wide, thin, pliable, coriaceous-membranous, dimidiate or flabellate, often deeply imbricately lobed (in some specimens almost down to the short lateral stipe). Pilei usually completely covered with a very well developed felt-like tomentum, this beige or pale fawn to dark ochraceous-brown, up to 8 mm thick near the base of the basidiocarp and obscuring the short and not very prominent, sharply edged ridges on the surface. Hymenial surface cream to purplish or reddish-brown in older specimens, surface with a complex system of densely crowded, rather sharply edged, branched, radiating ribs.

Stipe lateral, usually short and stout or rudimentary, rarely well developed (but may reach 5 cm and 1 - 5 cm wide), covered by a dense reddish-brown tomentum, context thin, greyish white to wood coloured.

Hyphal system trimitic; generative hyphae 3-5 µm wide and smooth, skeletal hyphae 4-5(-8) µm, hyaline to pale brown, and binding hyphae 2-2.5 µm., the tomentum is comprised of thick-walled, smooth hyphae (2.5)3-5 (-7) µm wide.

Gloeocystidia abundant, 40-80 x 4-8 µm, undulating, thin-walled, with swollen bases up to 15 µm in diam., often irregularly constricted and very rarely forked.

Basidia 25-25 x 4-6 µm, clavate, tetrasterigmatic.

Basidiospores (2.5-) 3-4 x (2-) 2.5-3 (-3.5) µm, broadly elliptic to subglobose.

Substrata: On dead hard wood.

Distribution. Pantropical.

Remarks. Characterized by the complex system of ridges on the lower side of the basidiocarp.

Cymatoderma elegans Jungh.,

Tidschr. Nat. Geschells. 7:290, 1840. – *Cladoderris spongiosa* Fr., K. svensk Vetensk. Akad. Handl. 69:140, 1848. – *Beccariella insignis* Ces., Atti Acad. Sci. fis. Mat. Napoli 8:9, 1874. – *Cladoderris australiaca* Berk., in Saccardo Syll. Fung. 6:548, 1888. – *Beccariella kingiana* Massee, Grevillea 20:33, 1891. – *Cladoderris roccati* Mattiolo, Ann. Bot. Roma 7:144, 1908. – *Cladoderris scrupulosus* Lloyd, Synopsis gen. *Cladoderris* p. 8, Mycol. Writing. 1913.

Basidiocarp 4-19 cm high, 3-12 cm wide, thin, pliable, tough, dimidiate, but usually infundibuliform, with a central stipe, pileus with a thick, straw coloured to golden or rusty brown tomentum under which the surface is radially covered in furrows and sharp ridges, hymenial surface creamy-white to flesh coloured, becoming rusty cream or ochraceous with a pinkish tinge, with prominent branched, radiating folds with variable warts and short spines.

Stipe up to 5 cm long and about 1 cm in diameter, often short or rudimentary, occasionally well developed, covered with a brownish tomentum and attached to the substrate by a small basal disc.

Hyphal system dimitic, generative hyphae 2-4 μm wide, with clamp connections, skeletal hyphae 3-5 μm wide.

Cystidia resent thick walled, encrusted in upper part, 15-50 x 7.5-10 μm , clavate to pointed.

Gloeocystidia up to 11 μm wide, undulating, thin-walled, smooth, often of irregular shape.

Basidia 30-45 x 4-7 μm , clavate, tetrasterigmatic.

Basidiospores 6.5-9 x 4-5 μm , elliptic.

Substrata: On dead hard wood.

Distribution: Paleotropical species.

Remarks. The distribution, the pileate brown tomentum and ridged hymenophore are sufficient for an identification of this beautiful species.

Cymatoderma fuscum (Cooke) D. A. Reid,

Kew Bull. 13, 526, 1958. – *Cladoderris fusca* Cooke, Grevillea 10, 123, 1882. – *Cladoderris glaziovii* Henn., Bot. Jb. 15, Beiheft 34:15, 1892.

Basidiocarps 3-6 cm from stipe to margin and 4-10 cm wide, coriaceous, dimidiate or flabellate.

Pilei covered with a thick, brown, felt-like tomentum which obscures the short, radiating, inconspicuous ridges on the surface, except toward the margins, which are very dark brown or black, glabrous and shiny. Hymenial surface pinkish-beige with a purplish tinge, with several radiating folds and covered with very minute granular protuberances, context pale brown. Stipe rudimentary.

Hyphal system trimitic, generative hyphae with clamps, thin – to thick walled 3-7 μm , skeletal hyphae 4-6 μm , distinctly brown in colour, with those in the subhymenium strongly encrusted, binding hyphae, 2-3 μm , with numerous long tapering branches.

Cystidia absent.

Gloeocystidia up to 60 μm long, present, but few, often collapsed and wrinkled.

Basidia not seen.

Basidiospores 3.75 -4 x 2.5 -2.7 μm , broadly elliptic.

Substrata. Dead hard wood.

Distribution. Known only from Rio de Janeiro in Brazil (type locality), Grenada and Louisiana in the United States.

Remarks. Undoubtedly related to *C. dendriticum*, but separated from it by the hymenial surface covered with protuberances, a darker context and encrusted hyphae in the subhymenium. It may be that these characters are a result of environmental factors and that more collections will reveal it to be a form of *C. dendriticum*. Microscopical characters are more or less identical in the two species.

Cymatoderma sclerotioides (Lloyd) D. A. Reid,

Kew Bull. 13, 528, 1958. - *Stereum sclerotioides* Lloyd, Lloyd Mycological Writings 7:11, 1922.

Basidiocarps 7 -7.5 cm high, 2.5 cm wide, arising from a very hard, dark brown, strongly ribbed and wrinkled sclerotium up to 4 cm long and 2.5 cm wide, stipe is well developed and expands into a small coriaceous, infundibuliform pileus, 1.75 cm high and 2.5 cm in diam., with wavy margin, pileus surface only slightly radially ridged, covered by a thick, deep rich ochre-brown tomentum, hymenial surface pale creamy-ochre with numerous radial ridges, stipe up to 6 cm long and 1 cm wide covered at the base by a thick, spongy, deep ochre-brown tomentum.

Hyphal structure dimitic; generative hyphae 2 -4 μm wide and with clamps, skeletal hyphae, narrow, 2.5-3 (-4) μm , hyphae of the surface tomentum thick-walled, with a distinct lumen.

Cystidia absent.

Gloeocystidia 40-75 x 4-8 μm , abundant, undulating, thin-walled with swollen bases, narrowing above and appearing almost moniliform.

Basidia 25-30 x 5-6 μm , clavate, tetrasterigmatic.

Basidiospores (3.5) 4-5.5 x 2-3 μm , narrowly elliptic to subcylindrical.

Substrata. On the ground.

Distribution: Known from Brazil, Panama and Costa Rica.

Remarks. Characterized by the sclerotium and its distribution.

Cymatoderma venezuelae D. A. Reid,

Beiheft Nova Hedwigia 18:132, 1965.

Basidiocarps 0.8-2.0 cm long, 0.3 - 1.5 cm wide, irregularly spatulate to flabellate with a short, flattened, stipe like base, which is attached to the substrate by a thick,

basal pad of ochraceous mycelium, occasionally more than one basidiocarp may arise from a single mycelial pad, pileus densely covered with a thick, matted, felty tomentum, ochraceous- or tawny-brown thinning toward the margin, exposing the underlying surface at the extreme edge, as a narrow, glabrous, shining, translucent, chestnut-brown zone, hymenial surface quite smooth, dark purple-brown to orange brown, with narrow blackish zones, stipe very short, flattened and rudimentary.

Hyphal system dimitic, generative hyphae, 2-5 μm wide, hyaline, branched, and with clamp connections; skeletal hyphae, up to 7.5(-8) μm in diam., thick-walled to almost solid, hyaline and unbranched. In the tomentum, composed of densely compacted, thin-walled, generative hyphae there are widened sections resembling cystidia or pseudocystidia, these rather short, but up to 40 μm long.

Cystidia gloeocystidia, up to 80 μm long and 14 μm wide, abundant, thin-walled, undulating, arising at different depths in the hymenium.

Basidia 24-30 x 4-6 μm , clavate, tetrasterigmatic.

Basidiospores 3.5-4 x 2-3 μm narrowly elliptic to ovate.

Substrata. Unknown, but probably on dead hardwood.

Distribution: Known only from type specimen from Venezuela.

Remarks. Recognised by the smooth hymenium and the cysts or pseudocystidia formed in the hairs on the pileus. More collections are desirable in order to ascertain its morphological variation.

The genus *Inflatostereum*- a synopsis

by

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Introduction

The genus *Inflatostereum* D. A. Reid is a monotypic genus of stipitate steroid species known only from South America. It has previously been excellently treated taxonomically in Reid's (1965) monumental book on stipitate steroid fungi. However, the book is firstly rather difficult to find and secondly, rather expensive. Thus, it was felt that it could be useful to provide a description of the genus and its single species.

Inflatostereum D. A. Reid.

Beiheft Nova Hedwigia 18:143, 1965.

Basidiocarps stipitate, flabellate to spatulate, upper surface glabrous, usually rugulose to slightly radially folded, hymenial surface smooth, hyphal structure dimitic, generative hyphae with clamp connections, thin to slightly thick-walled, skeletal hyphae thick-walled, narrow to wide, cystidia and gloecystidia absent, basidia 4-spored, hyaline, clavate, basidiospores smooth, hyaline, thin-walled, non-amyloid, elliptic. Tropical genus with only one American species.

Type species: *Thelephora glabra* Lev.

Remarks. The genus is characterized by the strongly inflated generative hyphae. Possibly related to *Stereopsis*, but separated from it by the peculiar hyphae and a dimitic hyphal system.

Inflatostereum glabrum (Lev.) D. A. Reid

Beiheft Nova Hedwigia 18:144, 1965. - *Thelephora glabra* Lev., Ann. Sci. Nat. Ser. 3, 5:147, 1846. - *Stereum fissum* Berk., Hooker J. Bot. 8:273: 1856. - *Stereum partitum* Berk. & Broome, J. Linn. Soc. (Bot.) 14:65, 1873. - *Guepinia flabellata* Cooke, Grevillea 13:3, 1884. - *Stereum huberianum* P. Henn., Hedwigia 41:15, 1902. - - *Podoscypa radicata* Pat., Bull. Mus. Hist. Nat. Paris 29:333, 1923? - nomen dubium- no hymenium present.

Basidiocarps up to 7 cm long, and 5.5 cm. wide, discrete, coriaceous, spatulate or flabelliform, pileus often split radially, glabrous, tawny or rarely pale brown, often conspicuously radially wrinkled, but sometimes dark chestnut-brown and translucent, hymenial surface smooth and ochraceous.

Stipe lateral, very short or rudimentary, attached to the substrate by a thin, closely adpressed, creamy-ochre coloured mycelial disc.

Hyphal system dimitic generative hyphae 2-5 μ m wide, with clamp connections, and thin or slightly thickened walls, some with conspicuously inflated segments,

to 28 μm wide and with walls to 3 μm thick, these present throughout the context but most abundant immediately above the hymenium, and occasionally filled with yellowish-brown contents, skeletal hyphae 2-4 μm wide, present in stipe and basal parts of the pileus.

Basidia 35-44 x 4-7 μm , clavate, with 4 sterigmata, often with a single oil globule or a number of smaller drops.

Basidiospores (5-) 6.5-8 x (3-) 4 - 4.5 μm , elliptic, smooth, hyaline, non-amyloid, and with a distinct oil drop.

Substrata. Usually on twigs and small branches, but sometimes on stumps.

Distribution. South America. Known from Brazil, Guiana and Costa Rica.

Remarks. The inflated hyphae are diagnostic. Whether this is sufficient to warrant a specific genus, separated from *Stereopsis*, has to be solved with DNA sequencing.

The genus *Podoscypha* - a synopsis

by

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Introduction

The genus *Podoscypha* Pat. is the largest of all described for stipitate stereoid species. It has previously been excellently treated taxonomically in Reid's (1965) monumental book on stipitate stereoid fungi. However, the book is firstly rather difficult to find, secondly, rather expensive and thirdly, some new species have been described after his book was published. It is also a taxonomical treatise with long discussions concerning taxonomic concepts and vague definitions based on old names. Thus, it has proven to be difficult to use for practical identifications. Thus, it was felt that it could be useful to provide a synopsis of the known species in the genus.

Podoscypha Pat.,

Essai tax. p. 70-71, 1900.

Basidiocarps lignicolous or terrestrial and then often on buried wood, thin, coriaceous, spatulate, flabellate, infundibuliform; adjacent basidiocarps frequently confluent forming complicated rosette-like structures, upper surface glabrous or covered with a distinct tomentum or bearing branched antler-like processes, pale to dark brown or occasionally ochraceous-fawn, pinkish-fawn or pallid fawn to white, in old dried specimens dark chestnut to blackish-brown often concentrically zonate, hymenium smooth, usually pallid or cream coloured, but in some species dark bay, bright ochraceous or orange, stipe usually well developed, often attached to the substrate by a conspicuous mycelial disc and covered by a felt-like tomentum or minutely hispid due to the presence of numerous well defined caulocystidia, context often very thin, hyphal system dimitic or (rarely) rudimentarily trimitic, generative hyphae thin walled, hyaline, with clamp connections in all species, thin to thick-walled, skeletal hyphae thick-walled to almost solid, hyaline metuloid cystidia present in few species, gloecystidia always present, caulocystidia and pileocystidia absent or present, basidia clavate, 2 to 4-spored, of small to medium size, basidiospores smooth, thin-walled, hyaline, non-amyloid, subcylindrical to broadly elliptic to subglobose. All species cause a white rot. Pantropical, with few species in the temperate zone.

Type species *Stereum surinamense* Lév.

Taxonomic synonym *Stereogloeocystidium* Rick, Broteria 979, 1940.

Remarks Distinctions between some species are vague, especially since some of them known only from the type specimen probably do not probably reveal the whole range of

variation. Further collecting is necessary to ascertain the validity of some of the species concepts accepted here.

Main key

1. Thick walled, smooth, metuloid cystidia or chlamydospores present..... **Key A**
1. Thick-walled metuloid cystidia or chlamydospores absent **2**
2. Pilei tomentose to hispid or with antler-like outgrowths **Key B**
2. Pilei glabrous, although pileocystidia may be present **3**
3. Neotropical species Key **C**
3. Paleotropical species Key **D**

Key A.

1. Thick walled smooth cystidia present, chlamydospores absent **2**
1. Thick walled smooth cystidia absent, chlamydospores present **P. bolleana**
2. Pileus glabrous **P. mellisii**
2. Pileus tomentose **3**
3. Basidiocarps flabellate without distinct stipe, widespread in the paleotropical zone **P. involuta**
3. Basidiocarps distinctly stipitate, known only from Philippine Islands ... **P. moselei**

Key B

1. Pilei with antler-like outgrowths **2**
1. Pilei hispid to finely tomentose **3**
2. Paleotropical species **P. ursina**
2. Neotropical species **P. cristata**
3. Basidiocarps effused-reflexed and dorsally attached **P. semiresupinata**
3. Basidiocarps spatulate to flabelliform with tapering stipe **4**
4. Tomentum ochraceous with greenish tints, basidiospores 3-3.7 x 2-2.5 μm **P. viridans**
4. Tomentum whitish to beige, basidiospores 4-4.5 x 3-3.5 μm **P. caespitosa**

Key C Neotropical species

1. Basidiospores 5-8 μm long2
1. Basidiospores in general shorter than 5 μm 5
2. Basidiospores subglobose, pileocystidia present3
2. Basidiospores elliptic, pileocystidia absent4
3. Pilei radially wrinkled, dark chestnut to almost black when dry..... **P. ovalispora**
3. Pilei smooth, cream to greyish when dry **P. aculeata**
4. Basidiospores 6-8 (10) x 4-6 μm , on dead grasses**P. thozetii**
4. Basidiospores 5-7 x 3.5-4 μm , on dead wood **P. brasiliensis**
5. Pileocystidia or undifferentiated hairs present on pileus6
5. Pileocystidia absent 11
6. Basidiocarp with radiating ribs, up to 1.5 mm thick, basidiospores 3-3.5 μm long
..... **P. replicata**
6. Basidiocarps without radiating ribs, basidiospores 3.5-5 μm long7
7. Basidiospores subcylindrical to oblong-elliptic 4-5 x 2-2.5 μm , stipe usually well
developed **P. tomentipes**
7. Basidiospores broadly elliptic, wider than 2.5 μm , stipe mostly present as a
tapering contracted base8
8. Basidiospores 4-5 (6) x 2.2-3 μm , pileocystidia rare **P. macrorrhiza**
8. Basidiospores usually wider, pileocystidia common..... 9
9. Pilei radially wrinkled when dry, hymenium sharply delimited towards the short
stipe **P. glabrescens**
9. Pilei becoming smooth, hymenium not sharply delimited towards the stipe10
10. Basidiocarps whitish when fresh, becoming darker when dry, pilei thin and
papery, growing on wood **P. pusilla**
10. Basidiocarps light brown to pinkish brown when fresh, becoming dark when
dry, growing on the ground **P. petaloides**
11. Basidiocarps more or less spatulate with only a contracted base 12
11. Basidiocarps with a distinct stipe 13

12. Basidiospores 3-4 μm long, pilei azonate, pale brown **P. corbiformis**
 12. Basidiospores 2-3.2 μm long, pilei zonate, blackish brown **P. mølleri**
13. Basidiospores 2-4 x 1.5-2.2 μm , basidiocarp funnelshaped **P. curta**
 13. Basidiospores larger, pilei more or less spatulate to flabelliform **14**
14. Basidiospores (3.8) 4-6 x 3-4 μm , stipe glabrous **P. nitidula**
 14. Basidiospores 4-5 x 2-3 μm , stipe with hairs or thick-walled caulocystidia **15**
15. Caulocystidia absent, stipe covered with undifferentiated hairs mixed with gloecystidia, on the ground **P. ravenelii**
 15. Thick-walled caulocystidia present, stipe with fine hairs, on dead wood
 **P. bubalina**

Key D Paletropical species

1. Growing on dead grass tufts **P. thozetii**
 1. Growing on the ground or dead wood **2**
2. African species **3**
 2. European, Asian-Australian species **4**
3. Pileo- and caulocystidia absent, known only from Gabon **P. nuda**
 3. Pileo- and caulocystidia present, widespread and common
 **P. xanthopus-concinna**
4. European species, gloecystidia present on pileus **P. multizonata**
 4. Asian-Australian species, gloecystidia absent from pileus **5**
5. Gloecystidia absent in hymenium, spores 3-4 x 2.5 μm , know only from China .
 **P. yuannensis**
 5. Gloecystidia present in hymenium, spores smaller **6**
6. Caulocystidia absent, known only from Malaya **P. corneri**
 6. Caulo- and pileocystidia present, known only from Philippine Islands
 **P. philippinensis**

Description of species

Podoscypha aculeata (Berk & M.A. Curtis) Boidin.

Rev. Mycol. 24 210, 1959. - *Thelephora aculeata* Berk. & M. A. Curtis, Grevillea 1149, 1873.

Basidiocarps to 10.0 cm wide and 10.0 cm high, consisting of numerous stipitate, flabelliform pilei, fused at the base of the stipe to form a rosette-like structure, upper surface finely ridged or crested, white to cream when fresh, darkening to dark reddish brown when dry, margin finely incised to dentate, hymenium smooth, white to cream when fresh, darkening to light to dark grey when dry. Stipe in effect absent, and the tapering part of the basidiocarp is concolorous with the pilei and hymenium respectively.

Pileocystidia and **caulocystidia** absent.

Gloeocystidia 30-50 x 2.5-3.5 µm, hyaline, thin-walled.

Hyphal system dimitic, generative hyphae 2.5-6.0 µm wide, hyaline, thin-walled, with clamp connections; skeletal hyphae 2.5-5.0 µm, hyaline, thick-walled.

Basidia not seen.

Basidiospores 5.0-6.0 (7.0) x 4.0-5.0 µm, subglobose to globose.

Substrate. Terrestrial.

Distribution. Brazil and United States.

Remarks. Macroscopically similar to *P. multizonata*, but that species has pileocystidia and is known only from Europe and Asia.

Podoscypha bolleana (Mont.) Boidin.

Bull. Jard. Bot. Bruxelles 30323, 1960. - *Stereum bolleana* Mont., Syll. Crypt. p. 177, 1856.

Basidiocarps to 2.0-5.0 cm high and 0.3-2 cm wide in solitary basidiocarps, but often several fused to form more compound structures, spatulate, often lobed or split, flabellate to pseudo-infundibuliform, more rarely truly infundibuliform, upper surface glabrous, silky, shining and with radiating wrinkles imparting a lineate appearance, ochraceous beige to pale brown when fresh, darkening to chestnut brown or yellowish brown, often concentrically zonate, and with a whitish or pale margin, hymenium smooth, ochraceous to ash grey in dried specimens. Stipe attached to the substratum by a conspicuous disc of ochraceous mycelium up to 6.0 mm wide usually short but may attain 4.0 cm long and 0.5-3.0 mm wide covered with a fine ochraceous to brown coloured tomentum, consisting of stiff caulocystidia and skeletal hyphae.

Hyphal system dimitic, generative hyphae 2.5-5 µm wide, hyaline, thin-walled, branched, with clamp connections; skeletal hyphae, to 3-4.5 µm wide, thick-walled to almost solid, unbranched.

Chlamydospores 8-16 x 6-9 µm, present both in the context and stipe, yellow to pale brown, smooth, globose to oblong, thick walled.

Pileocystidia 25-70 x 10-15 µm, abundant, smooth, cylindrical to clavate, yellow to pale brown, thick-walled except at the apex.

Caulocystidia to 120 μm long and 8-13 μm wide, cylindrical or clavate, arising deep in the tissue of the stipe and growing out at right angles through the longitudinally orientated hyphae forming this tissue, hyphal walls thickened, brown, usually darker than the pileocystidia.

Gloeocystidia to 80 μm long and 15 μm wide, elongate, thin-walled, undulant with a slightly swollen base and gradually narrowing to an obtuse apex.

Basidia 20-30 x 5-6 μm tetrasterigmatic.

Basidiospores 4-6 x (2.2 -) 2.7-3.5 μm , elliptic to broadly elliptic.

Substrate. On dead wood.

Distribution. Tropical Africa, especially in West Africa.

Remarks. Microscopically, the usually abundant chlamydospores make *P. bolleana* easy to recognize. Macroscopically it is similar to the common *P. nitidula*.

Podoscypha brasiliensis D. A. Reid.

Beiheft Nova Hedwigia 18169, 1965.

Basidiocarps to 1.5-3.1 cm high and 0.6-2 cm wide, gregarious, truly infundibuliform, occasionally split almost to the stipe on one side and then appearing flabellate, pileus whitish when fresh, yellowish or ochraceous-brown with slightly darker indistinct zones through reddish- or orange-brown to dark chestnut when dried, hymenium smooth, cream ochre or grey-brown to almost black, usually with an ash-grey pruina, stipe 3.0-8.0 mm long, 0.5-1.0 mm wide, very minutely tomentose, ranging from pale ochre to dark brown and attached to the substrate by a pale ochraceous disc of mycelium up to 5.0 mm wide.

Hyphal system dimitic, generative hyphae 2.5-4.5 μm wide hyaline, thin-walled, branched, with clamp connections and appearing twisted and ribbon-like in microscope preparations; skeletal hyphae, to 5.0 μm wide, hyaline, very thick-walled, unbranched or (rarely) with short lateral branches of limited growth.

Pileocystidia and **caulocystidia** absent.

Gloeocystidia 30-55 x 6-12 μm , long, narrow, thin-walled and with a swollen base.

Basidia up to 40 x 5 μm , clavate, tetrasterigmatic.

Basidiospores 5-7.3 x 3.0-4.2 μm , elliptic to broadly elliptic.

Substrate. On dead wood.

Distribution. Known from the type locality in Brazil and in Venezuela.

Remarks. Might be confused with *P. curta*, but easily distinguished from it by the larger basidiospores.

Podoscypha bubalina D. A. Reid.

Beiheft Nova Hedwigia 18171, 1965.

Basidiocarps to 1.0-2.0 cm high and 0.3-1.2 cm wide, truly infundibuliform, pilei glabrous, pale buff when fresh becoming orange-brown or reddish-chestnut in herbarium material, sometimes ornamented with rather indistinct, darker, concentric zones.

Hymenium smooth, varying from ochraceous to almost black in dried specimens. Stipe

0.5-0.8 cm long and 0.5-0.7 mm wide, rusty-brown, appearing minutely hispid under a lens due to the presence of caulocystidia, attached to the substratum by a conspicuous disc of ochraceous mycelium up to 6.0 mm wide

Hyphal system dimitic, generative hyphae 2.5-4 µm wide hyaline, thin-walled, branched, with clamp connections; skeletal hyphae 3.5-4.5 µm wide, thick-walled to almost solid, unbranched.

Pileocystidia absent.

Caulocystidia present, to 80 µm long, and 8-13 µm wide, cylindrical or clavate, often in tufts, thick walled, first hyaline then pale brown, arising deep in the context of the stipe and grow to out at right angles to the longitudinally orientated hyphae in the stipe.

Gloeocystidia 30-60 x 5-7 µm, elongate, thin-walled, undulant with a slightly swollen base, gradually narrowed toward an obtuse apex.

Basidia, mature basidia not seen.

Basidiospores 3.7-4.7 x 2.5-3.2 µm, elliptic to broadly elliptic.

Substrate. On dead wood.

Distribution. Known only from the type locality in Brazil.

Remarks The caulocystidia and its lignicolous habitat characterize this species. More collections are desirable to verify its macromorphological variation.

Podoscypha caespitosa (Burt) Boidin.

Rev. Mycol., Paris, 24, 212, 1959. - *Stereum caespitosum* Burt, Ann. Mo. Bot. Gdn 7 116-117, 1920.

Basidiocarps coriaceous, thin, caespitose, effused-reflexed or laterally stipitate with a small resupinate part, often forming as a cluster of up to 10 imbricate, reflexed, pileate lobes, to 5.0-10.0 mm wide pilei whitish ochraceous, drying pale brown and minutely adpressed tomentose, but margin remaining glabrous, hymenium whitish to light buff.

Hyphal system dimitic, generative hyphae 2-5 µm wide, hyaline thin-walled with clamp connections; skeletal hyphae to 3.5 µm wide, hyaline thick-walled.

Pileocystidia present but scattered, to 70 µm long and 6-8 µm wide.

Caulocystidia absent.

Gloeocystidia abundant, up to 85 x 7-10 µm, slender, flexuous with a slightly swollen base, gradually tapering toward the obtuse apex.

Basidia not seen.

Basidiospores 4-4.5 x 3-3.5 µm, subglobose.

Substrate. On dead wood.

Distribution. Known from Jamaica and Venezuela.

Remarks. Typically found growing in small clusters, a characteristic which, together with the small subglobose spores, is diagnostic for this species.

Podoscypha corbiformis (Fr.) D. A. Reid.

Beiheft Nova Hedwigia 18277, 1965. - *Thelephora corbiformis* Fr., Act. R. Soc. Sci. Uppsala, Series III, 1, 108, 1851.

Basidiocarps to 10 cm wide, formed of tufted, sessile, pileate lobes arising from a common base, often imperfectly fused to form sessile, cup-shaped structures, from the inner surface of which innumerable small pileate lobes arise by proliferation, pilei pallid grey-brown, possibly golden brown when fresh and with darker concentric zones, hymenium smooth and dingy grey-brown.

Hyphal structure dimitic, generative hyphae 2-4 µm wide, hyaline, thin walled, with clamp connections; skeletal hyphae, 2-5-5 µm wide, thick-walled to almost solid, unbranched.

Pileocystidia and **caulocystidia** absent.

Gloeocystidia present, but mostly collapsed.

Basidia not seen.

Basidiospores 3-4.2 x 2-2.7 µm, broadly ovate to elliptic.

Substrate. Terrestrial.

Distribution. South America Known from Brazil, Argentina, Venezuela and Costa Rica.

Remarks. The lack of cystidia on the surface of the basidiocarp is typical for this species.

Podoscypha corneri D. A. Reid,

Beiheft Nova Hedwigia 18172, 1965.

Basidiocarps to 12 cm wide, formed of tufted, sessile, irregular pileate lobes arising from a common base, often imperfectly fused to form sessile, cup-shaped structures, pilei pale ochraceous, glabrous, azonate drying dark to purplish chest coloured, hymenium smooth and ochraceous to greyish. Stipe short and rudimentary.

Hyphal structure dimitic, generative hyphae 2-4 µm wide, hyaline, thin walled, with clamp connections; skeletal hyphae, 2-5-5 µm wide, thick-walled to almost solid, unbranched.

Pileocystidia present, subcylindrical, thick walled, up to 40 µm long 6-10 µm wide, caulocystidia not observed in the type.

Gloeocystidia present, thin-walled cylindrical, up to 60 µm long and may project above the hymenium.

Basidia clavate.

Basidiospores 2.2-3.2 x 2-2.2 µm subglobose to elliptic.

Substrate. On dead wood.

Distribution. Known only from the type locality in Malaya.

Remarks. The small spores are distinctive for this rare species.

Podoscypha cristata (Berk. & M. A. Curtis) D. A. Reid.

Beiheft Nova Hedwigia 18174, 1965. - *Stereum cristatum* Berk. & M. A. Curtis, Grevillea 1163, 1873. - *Stereum rufo-nitens* Speg., Bol. Acad. Cienc. Cordoba 1181, 1889.

Basidiocarps to 0.6-1.5 cm high, and 0.6-1.2 cm wide, truly infundibuliform or flabelliform, covered on the inner side with a tangled mass of branched, antler-like processes especially toward the base, fulvous or reddish with a silky sheen (but probably

straw-coloured when fresh), with somewhat darker, concentric zones and a slightly paler margin, hymenium smooth, pale creamy-ochre to pinkish ochre.

Stipe short, 1.0-5.0 mm high and 1.0-2.0 mm wide, pale reddish to dark brown.

Hyphal system dimitic, generative hyphae 2-4 μm wide, hyaline, branched, with clamp connections; skeletal hyphae 3-5 μm wide, hyaline, thick-walled to almost solid. The antler-like pileal processes are comprised mainly of skeletal hyphae with only a few generative hyphae intermixed.

Gloeocystidia 30-60 x 4-8 μm , initially globular or obpyriform but soon long, undulant and thin-walled.

Pileocystidia and **caulocystidia** absent.

Basidia not seen.

Basidiospores 4-4.5 x 1.75-2 μm , narrowly elliptic or subcylindrical.

Substrate. On dead wood or vines.

Distribution. Known from North and South America.

Remarks. The tangled mass of hairs on the pileus makes this a characteristic species.

Welden (1960) placed it in *Cymatoderma* because of the dense pileus cover, a characteristic for this genus. Reid (op cit) placed more emphasis on the hyphal structure and preferred *Podoscypha* as the proper genus and his solution is accepted here.

***Podoscypha curta* Ryvarden,**

Synopsis Fung. 4075, 2020.- *Thelephora curta* Fr., Linnea 5523, 1830. - *Podoscypha fulvo-nitens* (Berk.) D. A. Reid., Beiheft Nova Hedwigia 18176, 1965. - *Stereum fulvo-nitens* Berk., Ann. Mag. nat. Hist., Series 11, 9198, 1852.

Basidiocarps to 0.6-5.5 cm high and 0.4-3 cm wide, nearly always truly infundibuliform, although sometimes irregular with uneven sidewalls, and then appearing almost flabellate, upper surface glabrous, very minutely radially wrinkled, with a distinct waxy sheen, golden-orange, to reddish-brown to rich chestnut to deep purplish brown when old, concentrically zonate, with narrow zones, hymenial surface smooth, deep ochraceous-cream or ochre to pale orange brown, darkening grey-brown, purplish-grey to orange-brown when older.

Stipe up to 1.0 cm long, dark brown, glabrous, attached to the substrate by a conspicuous, pale brown basal disc of mycelium.

Hyphal system dimitic, generative hyphae 2.5-4 μm wide, hyaline, thin-walled, branched, with clamp connections; skeletal hyphae 3.5-7 μm wide, thick-walled.

Pileocystidia and **Caulocystidia** absent.

Gloeocystidia present, but often rather scanty, tubular to club-shaped.

Basidia clavate, tetrasterigmatic.

Basidiospores 3-4 x 2-2.5 μm , elliptic to broadly elliptic.

Substrate. On dead wood.

Distribution. Central and South America.

Remarks. Probably the most common representative of the genus, easily recognized by the glabrous basidiocarp in beautiful shiny brown colours.

Podoscypha glabrescens (Berk. & M. A. Curtis) Boidin,
Rev. Mycol. 24 210-211, 1959. - *Stereum glabrescens* Berk. & M. A. Curtis, J. Linn. Soc.
10 330, 1869.

Basidiocarps to 1.7-2.5 cm long and 1.2-3.2 cm wide, spatulate to flabellate, upper surface dark chestnut-brown with darker and paler zones, glabrous and matt although finely pubescent towards the stipe hymenium smooth, pale ochraceous cream, becoming brownish and finally grey towards the stipe, on the lower side of the stipe but sharply delimited from the sterile portion by a distinct ridge.

Stipe very short and flattened to almost rudimentary.

Hyphal system dimitic, generative hyphae 2-4 µm wide, hyaline, thin walled, freely branched, with clamp connections; skeletal hyphae 3-5 µm wide, hyaline, thick-walled to almost solid, unbranched.

Pileocystidia up to 90 µm long and 10 µm wide, cylindrical or clavate, with broadly rounded apices, pale brown walls, and often with brown contents.

Caulocystidia to 120 µm long, similar to the pileocystidia.

Gloeocystidia abundant, thin-walled, undulant, gradually tapering toward an obtuse or pointed apex.

Basidia not seen.

Basidiospores 3.7-4.5 x 2.5-3.5 µm, elliptic to ovate.

Substrate. On dead hard wood.

Distribution. Known only with certainty only from Cuba.

Remarks. The glabrous pileus and the flabellate basidiocarps characterize this species.

Podoscypha involuta (Kl. in Fr.) Imazeki,
Bull. Govt. Forest Exp. Sta. 5798, 1952. - *Stereum involutum* Kl in Fr., Epicrisis Fung. P.
546, 1838. - *Podoscypha gillesii* Boidin & Lanq., Persoonia, 7 145, 1973 (stated to be an incompatible strain, see original reference.).

Basidiocarps 1-6 cm wide and high, spatulate to flabellate, rarely infundibuliform, pileus tomentose, ochraceous to dark brown, concentrically zoned, lower side smooth or slightly radially folded, yellowish when fresh becoming brown by age and drying.

Stipe up to 12 cm long and 1 cm wide, often rudimentary, flattened, tomentose in dark colours from dark brown to almost black, at base expanded to a mycelial disc.

Hyphal system dimitic, generative hyphae 2-4 µm wide, hyaline, thin walled, skeletal hyphae 3-5 µm wide, hyaline, thick-walled to almost solid, unbranched.

Metuloid cystidia present, 15-40 x 6-15 µm, thick walled, oblong obpyriform to cylindrical, hyaline, apically encrusted.

Pileocystidia and **Caulocystidia** absent.

Gloeocystidia less common than the metuloid ones, up to 90 µm long and 10 µm wide.

Basidia 15-25 x 4-7 µm, tetrasterigmatic.

Basidiospores 2-3 x 1.7-2, elliptic.

Substrate. On dead hard wood.

Distribution. Paleotropical, and rather common.

Remarks. The prominent metuloid cystidia and the tiny spores are distinctive characters.

Podoscypha macrorhiza (Lev.) Pat.,

Essai taxonomique, p. 71, 1900. - *Thelephora macrorhiza* Lév., Ann. Sci. nat. Series III, 5146, 1846.

Basidiocarps more or less infundibuliform, compound, consisting of several fused individuals arising from a common base, upper surface dark chestnut (stated to be reddish when fresh), glabrous but with radiating wrinkles, hymenium pale when fresh, grey-black when dry.

Stipe 1.0-2.0 mm long, minutely tomentose due to the presence of numerous caulocystidia.

Hyphal system dimitic, generative hyphae 2-4 µm wide, hyaline, thin-walled, with clamp connections; skeletal hyphae, 3-5 µm wide, hyaline, thick-walled to almost solid, unbranched.

Pileocystidia 30-80 x 5-10 µm, rare, clavate or subcylindrical, with distinctly thickened walls.

Caulocystidia to 45 µm long and 7.5-12 µm wide, short cylindrical or clavate, with distinctly thick, brown walls.

Gloeocystidia 30-60 x 4-7 µm, subcylindrical, thin-walled.

Basidia not seen.

Basidiospores 4-5(-6) x 2.2-3 µm, elliptic.

Substrate. Terrestrial but probably arising from buried wood.

Distribution. Known from South America French Guiana, Guadeloupe and Martinique.

Remarks. The presence of both caulocystidia and pileocystidia and the dark surface make this a distinct species.

Podoscypha mellisii (Sacc.) Pat.,

Mem. Acad. Malagache 611, 1928. - *Stereum mellisii* Sacc., Syll. Fung. 6553, 1888.

Basidiocarps to 1.6 cm high and 0.6-4 cm wide, pliable and flexible when fresh, hard and curled with deflexed and bent margin when dried, usually single, rarely confluent and forming more compound structures, flabellate or spatulate to funnel-shaped, bay to brown with even darker chestnut coloured zones, occasionally with some paler zones, surface smooth and glabrous, hymenium smooth, ochre or grey-brown to almost black.

Stipe to 3 cm long, dark brown to almost black, minutely tomentose (lens) to velutinate, attached to the substrate by a brown to ochraceous disc of mycelium, up to 5.0 mm wide.

Hyphal system dimitic, generative hyphae 2.5-3 µm wide hyaline, thin-walled, branched, with clamp connections; skeletal hyphae, to 5 µm wide, hyaline, thick-walled, usually unbranched but rarely with short lateral branches of limited growth.

Pileocystidia absent.

Caulocystidia to 120 µm long, smooth, brown, thick-walled, straight or bent to sinuous, covering the whole stipe, originating deep in the context, and projecting up to 60 µm.

Metuloid cystidia to 60 µm long, usually abundant, smooth, hyaline, lanceolate and acute or cylindrical with rounded apices. Those deeply buried in the subhymenium and context are usually very thick-walled, whilst those in the hymenium often exhibit a thick-walled base which thins towards the apex.

Gloeocystidia to 90 µm long and to 12 µm wide, narrow, undulant, thin-walled with a swollen base, not as frequent as the metuloid cystidia.

Basidia 12-18 x 4-6 µm tetrasterigmatic.

Basidiospores 3-4 x 2.5-3 µm, elliptic.

Substrate. On decayed hardwoods.

Distribution. Pantropical, but rare in America.

Remarks. Macroscopically the hard basidiocarps with dark shiny colours and a dark, finely tomentose stipe, should make it possible to recognize it in the field.

Podoscypha moselei ((Berk.) D. A. Reid,

Beih. Nova Hedwigia 182023, 1965. - *Stereum moslei*, Berk., J. Linn. Soc. 16.48, 1877.

Basidiocarps to 1.6 cm high and 0.6-2 cm wide, flabellate to infundibuliform and often different basidiocarp become confluent to more complex bodies, pliable and flexible when fresh, hard and curled with deflexed and bent margin when dried, pileus brown to brownish greyish, smooth, very finely tomentose (lens!) concentrically zoned, hymenium smooth, light rusty brown with a paler margin.

Stipe to 1 cm long, brown, minutely tomentose (lens), attached to the substrate by a brown to ochraceous disc of mycelium.

Hyphal system dimitic, generative hyphae 2.5-3 µm wide hyaline, thin-walled, branched, with clamp connections; skeletal hyphae, to 8 µm wide, hyaline, thick-walled to almost solid.

Pileocystidia present as short brown hairs mixed with a few caulocystidia.

Caulocystidia to 60 µm long, smooth, brown, thick-walled, straight or bent to sinuous scattered on the whole stipe.

Metuloid cystidia to 60 µm long, usually abundant, smooth, hyaline, lanceolate and acute or cylindrical with rounded apices, buried in the subhymenium and context are thick-walled, whilst those in the hymenium often with a thinner apex.

Gloeocystidia to 90 µm long and to 15 µm wide at the base.

Basidia not seen.

Basidiospores not seen.

Substrate. On hard wood.

Distribution. Known only from the Philippine islands.

Remarks. *P. moselei* is similar to *P. mellissii* but separated by the minutely tomentose pileus, shape of cystidia and absence of long setoid hairs on the stipe. *P. involuta* is

similar and mostly differentiated by having a distinct tomentose pileus. In the end it may be that *P. moslei* is only a form of *P. involutea*.

Podoscypha møllerii (Bres. & Henn.) D. A. Reid.

Beiheft Nova Hedwigia 18202, 1965. - *Stereum mølleri* Bres. & Henn., Hedwigia 35288, 1896.

Basidiocarps 1.0-2.0 cm wide, flabelliform, upper surface silky, dark blackish brown, with numerous, narrow, concentric zones and a whitish margin. Hymenium smooth and pallid. Stipe 5.0-7.0 mm long and 2.0 mm wide, flattened, dark blackish-brown and similarly zoned like the pilei, and often appearing as little more than a basal prolongation of the cap.

Hyphal system dimitic, generative hyphae 2-3 μ m wide, hyaline, thin-walled, with clamp connections; skeletal hyphae, 3-5 μ m wide, hyaline, thick-walled, unbranched.

Pileocystidia absent.

Caulocystidia projecting up to 90 μ m, 5-8 μ m wide, with thick brown walls, often constricted.

Gloeocystidia present, 5-7 μ m wide, elongate, thin walled, cylindrical.

Basidia not seen.

Basidiospores 2.2-3.2 x 2-2.2 μ m, broadly elliptic.

Substrate On dead wood.

Distribution Known only from Brazil Blumenau, St. Catharina.

Remarks Most easily distinguished by its dark, distinctly zonate pilei.

Podoscypha multizonata (Berk & Broome) Pat.,

Ann. Crypt. Exot. 16, 1928. - *Thelephora multizonata* Berk. & Broome, Ann. Mag. Nat. Hist. Series III, 15321, 1865.

Basidiocarps up to 10 cm wide and 8 cm high, often forming rosettes with several more or less partly independent pilei, pileus glabrous, smooth to radially wrinkled, in parts with knobs or outgrowths, pinkish to pale reddish when fresh, becoming more brownish when dry, often with concentric darker bands or zones.

Hyphal system dimitic, generative hyphae 3-7 μ m wide and with clamp connections; skeletal hyphae, 4-8 μ m wide, hyaline, thick-walled.

Pileocystidia and **Caulocystidia** absent.

Gloeocystidia present, also on the pileus, 5-12 μ m wide, up to 130 μ m long, penetrating the whole hymenium.

Basidia clavate, 18-26 x 4-6 μ m tetra- and biserigmic.

Basidiospores 5-6 x 3.7-4.7 elliptic to subglobose.

Substrate On the ground.

Distribution. West European species, especially common in England, and with a single record from Siberia.

Remarks. The restricted distribution, the multi shaped basidiocarps and presence of gloeocystidia on the pileus, make this a remarkable species.

Podoscypha nitidula (Berk.) Pat. in Duss.,

Enum. champ. Guadeloupe Martinique p. 21, 1903. - *Stereum nitidulum* Berk. in Hooker's Lond. J. Bot. 2, 638, 1843. - *Stereum surinamense* Lév., Ann. Sci. nat. Series III, 2209, 1844.

Basidiocarps to 1.2-4.0 (-8.0) cm high and 0.7-1.5(-5.0) cm wide, usually truly infundibuliform with a folded basidiocarps, although occasionally proliferating from within the cup, but very rarely flabellate specimens are produced, single, but when crowded together some basidiocarps may fuse along their adjacent margins, pilei dirty white, drying dark chestnut-brown, frequently ornamented with concentric zones of a lighter or darker shade, upper surface glabrous and often has a waxy, semi-translucent appearance, hymenium smooth, pale creamy-ochre to grey-brown, but in some basidiocarps marked with dark slate grey or blackish zones especially toward the margin, which is itself often chestnut-brown, stipe rudimentary to well formed and then up to 2.5 cm long and 1-2 mm wide, brown and with a fine cover of undifferentiated hyphae mixed with gloeocystidia, finally becoming glabrous.

Hyphal system dimitic, generative hyphae 2-4 wide thin-walled, hyaline, branched with clamp-connexions at the septa, skeletal hyphae, 3-5 μ m wide, thick-walled often almost solid, hyaline and unbranched.

Pileocystidia and **Caulocystidia** absent.

Gloeocystidia present, arise in the context and, curve into the hymenium, up to 150 μ m long.

Basidia not seen.

Basidiospores 3.75-5.75 x 3-4 (-4.2) μ m, broadly elliptic to subglobose.

Substrate. Usually terrestrial, rarely on dead wood.

Distribution. Known only from South America Bolivia, Brazil, Guyana, Cuba, Dominican Republic, Surinam and Trinidad.

Remarks. The lack of all types of cystidia on the surface of the basidiocarp and the oblong basidiospores characterize the species.

Podoscypha nuda Boidin,

Cahiers Maboke 4103, 1966.

Basidiocarps 2-5 cm high centrally stipitate, infundibuliform, often grown together and forming more complex structures, pileus glabrous, white to cream coloured when fresh drying brownish, hymenial surface slightly radially furrowed, whitish to grey when fresh, becoming brownish when dry.

Stipe central, 0.5-2 mm in diameter, greyish and glabrous.

Hyphal system dimitic, generative hyphae 2,2-4,5 μ m wide, skeletal hyphae 2-4,5 μ m wide.

Cystidia absent.

Gloeocystidia 15 120 x 5,5 11 μ m, abundant in the hymenium.

Basidia 30-36 x 4-(5) μ m, tetrasterigmatic.

Basidiospores 3,5-4,2 x 2,5-3,2 µm, elliptic.

Substrate. On dead hard wood.

Distribution. Known only from Gabon.

Remarks. The lack of pileo – and caulocystidia is a distinct character.

Podoscypha ovalispora D. A. Reid,

Beiheft Nova Hedwigia 18218, 1965.

Basidiocarp to 4.3 cm high, and 4.0 cm wide, flabellate with a very short stipe, margin deeply divided into numerous small lobes, upper surface yellowish, when fresh, uniformly very dark chestnut to almost black when dry, rather strongly radiately wrinkled and partly cracked in mature specimens, surface glabrous to the naked eye, although sparsely scurfy when viewed with a lens, due to the presence of scattered pileocystidia, hymenial surface greyish rusty-brown, ornamented with radiating folds.

Stipe to 8.0 mm. high and 1.5 mm. wide, densely tomentose to pubescent under a lens.

Hyphal system dimitic, generative hyphae 2.5-5 µm wide, hyaline, thin walled with clamp connections; skeletal hyphae, to 5 µm wide, thick-walled to almost solid.

Pileocystidia present, to 130 µm long and 8-17 µm wide, subcylindrical to clavate, very thick walled and almost solid.

Caulocystidia up to 200 µm long, similar to the pileocystidia.

Gloeocystidia present, 30-50 x 4-8 µm, subcylindrical, elongate, thin-walled, with a slightly swollen base.

Basidia not seen.

Basidiospores 5.5-7 x 4-4.7 µm, elliptic.

Substrate. On dead hardwoods

Distribution. Known only from Brazil.

Remarks. Readily distinguished amongst species of *Podoscypha* with pileo- and caulocystidia by the large oval basidiospores.

Podoscypha petalodes (Berk.) Pat. in Duss.,

Enum. champ. Guadeloupe et Martinique, p. 20-21, 1903. *Stereum petalodes* Berk., Ann. Mag. nat. Hist. Series 11, 9198, 1852.

Basidiocarps to 2.0-8.0 cm high and 0.8-4.0 cm wide, spatulate or flabellate, usually clustered but discrete, although may form loose clusters in which adjacent basidiocarps become confluent, upper surface finely velutinate due to numerous pileocystidia or fine hair, especially towards the base, margins remaining glabrous, when fresh light brown to pinkish-brown becoming purplish-chestnut-brown, tawny-brown, golden-brown with a purplish tint or pale golden-brown, with darker concentric zones, hymenium ochraceous or greyish buff or concolorous with the pilei.

Stipe short and rudimentary or well formed and elongate, minutely tomentose due to the presence of caulocystidia.

Hyphal system dimitic, generative hyphae 2.5-4.5 µm wide, hyaline, thin walled, with clamp connections; skeletal hyphae, 3.5-6.0 µm wide, thick-walled to almost solid.

Pileocystidia 40-80 x 6-12 µm, subcylindrical or clavate with thickened walls.

Caulocystidia similar to the pileocystidia, thick-walled, protruding up to 130 µm.

Gloeocystidia abundant, elongate, thin-walled, with highly refractive contents.

Basidia clavate, tetrasterigmatic.

Basidiospores 3.7-5.0 x 2.5-3.7 µm, ovate to elliptic.

Substrate. On dead wood. Usually on logs, but occasionally terrestrial, then probably arising from buried wood.

Distribution. South America.

Remarks. The spatulate basidiocarp becoming purplish chestnut brown and with caulo- and pileocystidia, is characteristic for this species.

Podoscypha philippinensis D. A. Reid,

Beiheft Nova Hedwigia 18240, 1965.

Basidiocarps up to 3 cm tall, 3-5 m wide, flabelliform with a short stipe, pileus blackish to purplish brown and concentrically zoned, smooth to slightly radially wrinkled, almost glabrous but under lens very finely tomentose due to projecting pileocystidia, hymenial surface pale reddish brown to dark purplish.

Stipe short, up to 5 mm long and 4 mm wide, concolorous with the pileus.

Hyphal system dimitic, generative hyphae 2.5-4.5 µm wide, hyaline, thin walled, with clamp connections; skeletal hyphae, 3-50 µm wide, thick-walled to almost solid, unbranched.

Pileocystidia up to 150 µm long, 8-10 µm wide, subcylindrical or clavate with thickened walls.

Caulocystidia similar to the pileocystidia, thick-walled, protruding up to 130 µm and pale brown.

Gloeocystidia abundant, elongate, thin-walled, and undulating, up to 120 µm long.

Basidia not seen.

Basidiospores 2.5-3.3 x 2-2-2 µm, ovate to elliptic.

Substrate. On dead wood.

Distribution. Only the type from the Philippine Islands is known.

Remarks. Macroscopically it is similar to *P. glabrescens* and *P. mölleri* but distinguished by smaller spores and almost solid pileo- and caulocystidia.

Podoscypha pusilla (Berk. Ryvarden,

Synopsis Fung. 33 17, 2015. - *Stereum pusillum*, Berk. Ann. Mag. Nat. Hist.

10381, 1842. - *Podoscypha venustula* (Speg.) D. A. Reid, Beiheft Nova Hedw. 18260,

1965. - *Thelephora venustula* Speg., Ann. Soc. Cient. Argent. 1936, 1885. - *Stereum*

flabellatum Pat., Bull. Soc. mycol. Fr. 16179, 1900. - *Stereogloeocystidium subflabellatum* Rick, Broteria 979, 1940.

Basidiocarps to 6 cm high, and 4.0 cm wide, gregarious, flabelliform, narrowing behind to a short but distinct stipe, often laterally fused to form compound structures, upper surface may be white or whitish, pale yellowish or pale cinnamon fawn when

fresh, becoming pale to rusty-brown, purplish brown or chestnut to ochre-brown with lighter or darker zones when dried, glabrous but may be minutely radiately wrinkled, hymenium ochraceous-buff or ochraceous-fawn with a greyish to slate-grey or greyish-purple pruina. **Stipe** concolorous, finely tomentose, usually rather short, occasionally well developed.

Hyphal system dimitic, generative hyphae 2.5-5 (- 6) μm wide, hyaline, freely branched, with clamp connections; skeletal hyphae 3.5-6(-7) μm wide, hyaline, thick-walled to almost solid, unbranched.

Pileocystidia to 70 μm long and 13 μm wide, subcylindrical or clavate, thick walled.

Caulocystidia similar to the pileocystidia but much longer, projecting up to 130 μm .

Gloeocystidia abundant, elongate, thin-walled with highly refractive contents.

Basidia not seen.

Basidiospores 3.2-4.7 x 2.2-3.5 μm , ovate to broadly elliptic.

Substrate. On fallen branches and dead wood.

Distribution. South America Brazil, Ecuador, Panama, Paraguay, Venezuela and Guadeloupe.

Remarks. The colour change from whitish to darker rusty brown, seems to be a distinct character for this species.

Podoscypha ravenelii (Berk. & M. A. Curtis) Pat.

Essai tax. p. 71, 1900. - *Stereum ravenelii* Berk. & M. A. Curtis, Grevillea 1162, 1873.

Stereum pergamenum Berk. & M. A. Curtis, Grevillea 1161, 1873.

Basidiocarps to 2-10 cm high and 0-8-3.5 cm wide, infundibuliform, spatulate or flabellate, usually discrete but when growing in close proximity may become confluent, upper surface more or less smooth, minutely radiately wrinkled or lineate-striate with a distinct waxy lustre, whitish when young, drying pale orange, through reddish-brown, chestnut to dark purplish-chestnut brown, often with darker concentric zones.

Hymenium smooth, creamy-ochre or grey-brown, with or without chestnut or blackish zones, to uniform dark purplish-slate-grey. Stipe to 1.5 cm long and 0.5-2.0 mm wide and may extend to the mycelial disk by which it is attached when growing on dead wood, minutely velvety, ochraceous to pale brown when dry.

Hyphal system dimitic, generative hyphae 2-5 μm wide, hyaline, thin-walled, branched, with clamp connections; skeletal hyphae 3-5 μm wide, hyaline, thick-walled to almost solid, unbranched.

Pileocystidia and **caulocystidia** absent.

Gloeocystidia 30-50 x 5-6 μm , thin-walled, clavate to slightly sinuous.

Basidia not seen.

Basidiospores 3.7-5.2 x 2.5-3.5 μm , subglobose to elliptic.

Substrate. Usually terrestrial, occasionally on dead wood.

Distribution. Known from Brazil to southern part of United States.

Remarks. This species is similar to *P. nitidula* and some authors have been inclined to treat them as one species. However, D. Reid (1965:247) concludes that the spores of the former are slightly smaller and narrower than those of the latter.

Podoscypha replicata (Lloyd) D. A. Reid,
Beiheft Nova Hedw. 18249, 1965. - *Stereum replicatum* Lloyd, Lloyd Mycological
Writings 725, 1339.

Basidiocarps often in clusters from a common base, to 3.0 cm from the base of the stalk to the margin and to 6.0 cm. wide, individual pilei thick, reaching 1.5 mm near the stipe which expands on the substrate as a small, brown, tomentose disc, upper surface strongly ribbed and often with a number of thin lobes, brown and minutely tomentose especially toward the base. Hymenium grey, strongly radiately ribbed and extending along the underside of the stipe as far as the basal disc.

Hyphal system dimitic, generative hyphae 2-4 μ m wide, hyaline, branched, with clamp connections; skeletal hyphae 4-6 μ m wide, very thick-walled to almost solid.

Pileocystidia and **caulocystidia** absent.

Gloeocystidia abundant, narrow, thin-walled, tapering gradually from a somewhat swollen base toward an obtuse or pointed apex.

Basidia 12-16 x 4-5 μ m tetrasterigmatic.

Basidiospores 3-3.5 x 2-2.5 μ m, elliptic.

Substrate. On dead wood.

Distribution. Known only from Brazil.

Remarks. This species has the thickest basidiocarp of all the species of *Podoscypha*. It is closely related to *P. viridans* (Lloyd) D. A. Reid but differs in habit, especially with regard to the thickness of the basidiocarp, and in the type of tomentum covering the surface of the pilei.

Podoscypha semiresupinata Welden,
Mycotaxon 4878, 1993.

Basidiocarps to 4 cm wide, effused-reflexed, dorsally attached to the wood, semicircular to elongate, adjacent basidiocarp may fuse to more compound structures, pilei adpressed tomentose especially towards the substrate, white to ochraceous, smooth to slightly rugulose. Hymenium smooth, white to ochraceous,

Hyphal system dimitic, generative hyphae 2-4 μ m wide, thin walled and with clamp connections, those of the tomentum on the pilei or lower side of the basidiocarp, up to 7 μ m wide; skeletal hyphae 3-6 μ m wide, hyaline, thick-walled.

Pileocystidia and **caulocystidia** absent.

Gloeocystidia present, to 85 μ m long and 6-12 μ m wide, clavate to cylindrical.

Basidia 30-40 x 3.5-6 μ m, clavate, tetrasterigmatic.

Basidiospores 4.5-7 x 3-4.5 μ m, elliptic.

Substrate. On dead hardwoods.

Distribution. Known only from Rio de Janeiro in Brazil.

Remarks. *The species* seems closely related to *P. caespitosa* and *P. glabrescens* which have shorter spores and traces of a tomentum at the base of a rudimentary stipe.

Podoscypha thozetii (Berk.) Boidin,

Rev. Mycol., Paris 24208, 1959. - *Stereum thozetii* Berk., J. Linn. Soc. 1885, 1881. - *Stereum cyathoides* Henn., Hedwigia 37284, 1898. - *Stereum warneckeana* Henn., Bot. Jahrb. 38120, 1905.

Basidiocarps to 3.0 cm high and 2.0 cm wide, stipitate, infundibuliform to fanshaped, soft and semi-transparent when fresh, denser when dry, upper surface smooth, glabrous, pink to buff, becoming more brownish when dry and with indistinct concentric zones, hymenium smooth, ochraceous to grey or isabelline.

Stipe to 1.0 cm long and 3.0 mm wide, grey to pale brown, glabrous and slightly expanded towards the base.

Hyphal system dimitic, generative hyphae 2 - 4 μ m wide, thin walled with clamp connections; skeletal hyphae 4-5.5 μ m wide, thick-walled to almost solid.

Pileocystidia and **caulocystidia** absent.

Gloeocystidia present, 50-140 μ m long and 8-15 μ m wide, yellowish, thin-walled, tapering towards the apex.

Basidia 30-45 x 4-8 μ m, clavate, tetrasterigmatic. (occasionally 2 sterigmatic).

Basidiospores 6.5-7.5 x 4.5-6 μ m, broadly elliptic, hyaline, thin-walled, often monoguttulate.

Substrate. On culms or tufts of dead grasses.

Distribution. Widespread in the tropical zones, especially common in Africa.

Remarks The substrate on dead grasses, should suffice for a field determination.

Podoscypha tomentipes (Overholts) D. A. Reid.

Beiheft Nova Hedwigia 18255, 1965. - *Stereum tomentipes* Overholts, Monogr. Univ. Puerto Rico, Biol. Sci. Series B. No. 2 308, 1934.

Basidiocarps to 1.0-4.5 cm high and 0.3-2.0 cm wide, flabelliform, upper surface glabrous, pinkish-rusty-brown with indistinct concentric zones when fresh, orange-brown with conspicuous golden-brown zones or rich chestnut with silky sheen when dry, pilei very thin and often diaphanous when held to the light. Hymenium smooth, beige when fresh, becoming ochraceous-buff with a greyish bloom.

Stipe up to 4 cm long, concolorous with the pilei, becoming dark brown with age, finely tomentose and covered with caulocystidia, arising from a basal disc of mycelium.

Hyphal system dimitic, generative hyphae 2-3 μ m wide, thin walled, with clamp connections; skeletal hyphae, 4-5 μ m wide, hyaline and thick walled.

Pileocystidia present, to 100 μ m long and 5-8.5 μ m wide, subcylindrical to clavate, those in older portions of the basidiocarp very thick-walled and often secondarily septate.

Caulocystidia present and abundant, to 120 μ m long, and 9 μ m wide, similar to the pileocystidia, with thick brown walls, in some cases appearing almost solid.

Gloeocystidia subcylindrical, elongate, thin-walled, with refractive hyaline contents, with a slightly swollen base.

Basidia 26-36.4 x 3-5 μ m, tetrasterigmatic.

Basidiospores 4-5 x 2-2.5 μ m, narrowly elliptic to subcylindrical.

Substrate On dead hardwoods.

Distribution Known only from tropical South America Bolivia, Brazil, Costa Rica, Venezuela, and from Cuba.

Remarks Most closely related to *P. pusilla* and *P. parvula* from which it may be distinguished by narrower and more elongate basidiospores.

Podoscypha ursina Boidin & Berthet,
Bull. Jard. Bot. Brux. 30320, 1950.

Basidiocarps to 6 cm high, and 4 cm wide, truly infundibuliform or flabelliform, pileus covered with an entangled mass of brown to almost black hairs, up to 5 mm thick, hymenial surface smooth, pale creamy-ochre to rusty brown.

Stipe short, up to 1 cm long, 4 mm wide, smooth, yellowish to pale brown.

Hyphal system dimitic, generative hyphae 2-4 μ m wide, hyaline; skeletal hyphae 3-5 μ m wide, hyaline, thick-walled to almost solid.

Pileocystidia and **caulocystidia** absent.

Gloeocystidia up to 120 μ m long, narrow and undulating and thin-walled.

Basidia 18-30 x 4-6 μ m, tetrasterigmatic.

Basidiospores 4-5 x -3-3.5 μ m, elliptic.

Substrate. On dead wood.

Distribution. Central Africa and Sri Lanka.

Remarks. The tangled mass of hairs on the pileus makes this a characteristic species and it is closely related to its Neotropical counterpart *P. cristata*, but separated by wider spores and distribution.

Podoscypha viridans (Lloyd) D. A. Reid,

Beiheft Nova Hedwigia 18274, 1965. - *Stereum viridans* Lloyd, Lloyd Mycol. Writings 71339, 1925. - *Stereogloeocystidium lobato-plicatum* Rick, Broteria 979, 1940.

Basidiocarps to 2.5 cm from point of attachment to the margin, and 0.5-2.2 cm wide, flabellate, narrowing behind into a more or less distinct, lateral stipe, sometimes becoming confluent, upper surface with a buff or slightly greenish, matted tomentum, at least toward the base, frequently becoming uniformly glabrous or zonate, glabrous near the margin and then minutely radiately wrinkled with a distinct sheen, chestnut-brown to rich tawny-brown with darker concentric zones. The thickness of the tomentum varies considerably from a dense layer up to 0.3 mm thick, hymenium smooth, pale yellowish-brown to purplish-brown.

Stipe to 1 cm long, and with a dark-brown or buff coloured tomentum.

Hyphal system dimitic, generative hyphae 2-4 µm wide, thin walled with clamp connections; skeletal hyphae, 4-5.5 µm wide, hyaline, thick-walled to almost solid, unbranched,

Pileocystidia present, but difficult to differentiate from surface hairs as they can reach 350 µm long, rarely forked towards the apex.

Caulocystidia to 120 µm long, present in the tomentum of the stipe.

Gloeocystidia to 130 µm long and 10 µm wide, undulant, hyaline, thin-walled, often constricted.

Basidia 12-20 x 4-6 µm, clavate, tetrasterigmatic.

Basidiospores 3-3.75 x 2-2-3 µm, broadly elliptic to ovate.

Substrate. On dead wood.

Distribution. Known only from Brazil.

Remarks The species is well characterized by the ochraceous-buff or green tinted tomentum which, at least in part, covers the cap surface.

Podoscypha xanthopus-concinna (Lloyd) D.A. Reid,

Contrib. Bolus Herb. 7 80, 1975. – *Polystictus xanthopus-concinnus* Lloyd, Lloyd Mycol. Writ. 5618, 1916. - *Podoscypha parvula* (Lloyd) D. A. Reid, Beiheft Nova Hedwigia 18220, 1965. – *Stereum parvulum* Lloyd, Lloyd Mycol. Writings 7, Mycol. Notes, p. 1225, 1923.

Basidiocarp up to 5 cm high, and 4.0 cm wide, flabellate to subinfundibuliform, pileus first whitish, soon reddish orange to orange brown and even purplish in dry specimens, glabrous to the naked eye, but finely velutinate (lens) due to projecting pilocystidia, hymenial surface ochraceous, golden orange to pale brown or slate grey.

Stipe 1-2 cm or only rudimentary developed, up to 1 mm wide, ochraceous to brown with numerous caulocystidia.

Hyphal system dimitic, generative hyphae 2.5-5 µm wide, hyaline, thin walled with clamp connections; skeletal hyphae, to 5 µm wide, thick-walled to almost solid.

Pileocystidia present, to 70 µm long and 8-17 µm wide, subcylindrical to clavate, very thick walled and almost solid.

Caulocystidia to 200 µm long, similar to the pileocystidia.

Gloeocystidia present, up to 120 µm long, base more or less swollen tapering toward the apex.

Basidia up to 40 x 4-6 µm, tetrasterigmatic.

Basidiospores 3-4 x 2,5-3.5 µm, elliptic.

Substrate. On dead hardwoods.

Distribution. Widespread in tropical Africa.

Remarks. The small spores and its African distribution are distinctive.

Podoscypha yunnanensis C.L. Zhao,

Phytotaxa 387214, 2019.

Basidiocarps 2 cm wide, 1 cm thick, gregarious, tough to corky when fresh, becoming harder corky upon drying, spatulate to flabelliform, more or less stipitate, projecting up to, pileus slightly tomentose, zonate, buff to ochraceous when fresh and ochraceous to pale brown when dry, hymenial surface, smooth, cream to buff when fresh, buff to pale brown upon drying.

Hyphal system dimitic; generative hyphae with clamps, 2.5–4.5 μm wide, thin- to thick-walled, skeletal hyphae, thick-walled, 3–4.5 μm in diam.

Caulocystidia present, 30–55 $\times$ 3–5 μm , cylindrical, thin- to thick-walled.

Basidia 25–32 $\times$ 2.5–4 μm narrowly clavate to subcylindrical, tetrasterigmatic.

Basidiospores 3–4 $\times$ 2.5–5 μm elliptic to subglobose.

Substrate. Dead hard wood log.

Distribution. Known only from Yunnan province in China.

Remarks. The lack of gloecystidia makes this a distinct species besides the distribution.

Excluded species

Podoscypha affinis (Berk. & M.A. Curtis) Pat. 1900 = *Cotylidia aurantiaca*.

Podoscypha affinis (Lév.) Pat. 1928, = *Podoscypha venustula*.

Podoscypha albida (Lloyd) S. Ito 1955, = *Cotylidia komabensis*.

Podoscypha alutacea Bres. 1916, = *Pseudocraterellus alutaceus*.

Podoscypha aurantiaca Pat. 1903, = *Cotylidia aurantiaca*.

Podoscypha burtiana (Peck) S. Ito 1955, = *Stereopsis burtiana*.

Podoscypha cyphelloides (Berk. & M.A. Curtis) R. Heim & Malençon 1928 = *Cyphellostereum pusiolum*.

Podoscypha decolorans (Berk. & M.A. Curtis) Pat. 1903, = *Cotylidia decolorans*.

Podoscypha diaphana (Cooke) S. Ito 1955, = *Cotylidia diaphana*.

Podoscypha glabra Pat. 1914, = *Inflatostereum glabrum* (Pat.) D. Reid.

Podoscypha harmandii (Lloyd) S. Ito 1955, = *Cotylidia harmandii*.

Podoscypha hydrophora (Berk.) Boidin 1959, = *Aquascypha hydrophora*.

Podoscypha intermedia Pat. 1928, = *Stereopsis hiscens*.

Podoscypha lutea Pat. 1927, = *Pseudocraterellus luteus*.

Podoscypha minutula Pat. 1924, = *Cotylidia pusiola*.

Podoscypha obliqua (Mont. & Berk.) Pat. 1900, = *Podoscypha pusillum* (Berk.) Ryvarden.

Podoscypha pallida (Pers.) Pilát 1930, = *Cotylidia pannosa*.

Podoscypha pergamenea (Berk. & M.A. Curtis) Pat. 1900, = *Podoscypha ravenelii*.

Podoscypha pertenuis Skovst. 1956, = *Pseudocraterellus pertenuis*.

Podoscypha petalodes (Berk.) Boidin 1959, = *Podoscypha petalodes*.

Podoscypha poilanei Pat. 1928, The type is lost.

Podoscypha quisquiliaris (Berk. & M.A. Curtis) Pat. 1903, = *Cotylidia aurantiaca*.

Podoscypha radicans (Berk.) Pat. 1903, = *Stereopsis radicans*.

Podoscypha radicata Pat. 1923, = *Inflatostereum radiculatum*.

Podoscypha semiresupinata A.L. Welden 1993, = *Cymatoderma semiresupinatum*.
Podoscypha sergentiorum Maire 1917, = The type is lost.
Podoscypha sowerbyi (Berk.) Pat. 1900, = *Cotylidia pannosa*.
Podoscypha subaffinis Boidin 1960, = *Podoscypha parvula*.
Podoscypha surinamensis (Lév.) Pat. 1900, = *Podoscypha nitidula*.
Podoscypha undulata (Fr.) Maire 1909, = *Cotylidia undulata*.

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The genus *Stereopsis* - a synopsis

by

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Introduction

The genus *Stereopsis* D. A. Reid is a small genus of stipitate stereoid species, mostly seen in the tropical zones. It has previously been excellently treated taxonomically in Reids (1965) monumental book on stipitate stereoid fungi. However, the book is firstly rather difficult to find, secondly, rather expensive and thirdly, some new species have been described after his book was published. It is also a taxonomical treatise with long discussions concerning taxonomic concepts and vague definitions based on old names. Thus, it has proven to be difficult to use for practical identifications. Thus, it was felt that it could be useful to provide a synopsis of the known species in the genus.

STEREOPSIS D. A. Reid,

Beiheft Nova Hedw. 18:290, 1965.

Basidiocarps lignicolous or terrestrial (but then usually attached to buried wood), coriaceous, pleuropodal, spatulate, flabellate, pseudo-infundibuliform or (rarely) truly infundibuliform, discrete or confluent, sometimes in small rosettes, upper surface glabrous, in dried specimens often radiately rugulose, hymenium smooth or indistinctly radially rugulose, hyphal system monomitic, generative hyphae with or without clamp connections, cystidia absent, gloeocystidia present in some species, basidiospores smooth, hyaline, non-amyloid, broadly elliptical to subglobose, often with a prominent lateral apiculus.

Type species: *Stereum radicans* (Berk.) D.A. Reid

Remarks. The genus is characterized by a monomitic hyphal system and fairly large basidiocarps lacking coralloid hyphal structures or large cylindrical cystidia.

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Stereopsis albida Ryvarden,

Synopsis Fung. 30:26, 2012.

Basidiocarps 0.5–1 cm high, 0.2–2 cm wide and up to 200 µm thick, soft when fresh, very fragile as dry, solitary, spatulate or reniform, pileus white, becoming pale cream coloured when dry, dull, glabrous, bit in parts with a thin cover of appressed hyphal tufts or fibrils, azonate; hymenial surface whitish, sterile base or rudimentary stipe up to 5 mm long.

Hyphal system monomitic, generative hyphae, 3–5 µm in diam., thin walled and with simple septa.

Cystidia not seen.

Basidia cylindrical or clavate, 20–35 x 3–5 µm, tetrasterigmatic.

Basidiospores 4–5 µm in diameter, subglobose.

Substrata. On soil.

Distribution. Known only from the type locality in Costa Rica.

Remarks. The small white basidiocarps occurring in large numbers and the subglobose spores make it distinct in the genus.

Stereopsis burtianum (Peck) D.A. Reid,

Beiheft Nova Hedw. 18:292, 1965. - *Stereum burtianum* Peck, Rep. N.Y. St. Mus. No. 57:21, 1904.

Basidiocarps up to 3 cm high, and 2.5 cm wide, thin, submembranous, coriaceous, usually truly infundibuliform, rarely spatulate, adjacent basidiocarps frequently confluent.

Pilei somewhat shiny, pale, often with brown shades, becoming pale ochraceous-brown, more or less zonate in shades of grey-brown, surface, often with numerous, but rarely prominent, radiating, fibrillose strands of hyphae when viewed with a lens, these especially seen towards the base of the funnel. Hymenial surface smooth or faintly radiately striate, pale buff to ochraceous-buff, drying pale creamy-ochraceous. Stipe 3–8 mm long and 1–1.5 mm thick, short, tough, solid, minutely tomentose or pruinose-tomentose, becoming concolorous with the pileus in herbarium material.

Hyphal system monomitic, generative hyphae 2.5–3.5 µm wide, simple septate,

Gloeocystidia absent.

Basidia 15–20 x 5 µm, clavate, tetrasterigmatic.

Basidiospores 3.5–5 x 2.5–3.5 µm, broadly elliptic to subglobose.

Substrata: Terrestrial.

Distribution: North and South America. Possibly also from Japan.

Remarks. The simple septate generative hyphae and the lack of gloeocystidia set this species apart from the other species in the genus.

Stereopsis cartilaginea (Massee) D. A. Reid,

Beiheft Nova Hedwigia 18:295, 1965. – *Cladoderris cartilaginea* Massee, Kew Bull. p. 172, 1899.

Basidiocarps up to 10 cm high, and 8 cm wide, thin, spatulate to almost infundibuliform, often with several basidiocarps from a common base, pileus dirty white to yellowish or ochraceous, smooth to finely fibrillose towards the stipe, hymenial surface smooth, pale buff to ochraceous, stipe whitish, up to 5 cm long, mostly shorter, round to flattened, finely tomentose or pruinose-tomentose, becoming concolorous with the pileus in herbarium material.

Hyphal system generative hyphae 2.5-5 μm wide and with clamps.

Gloeocystidia absent.

Basidia 45-65 x 7-9 μm , clavate, tetrasterigmatic.

Basidiospores 5-8 x 5-6.5 μm , broadly elliptic to subglobose.

Substrata: Terrestrial.

Distribution: Tropical Africa and Asia.

Remarks. The combination of large spores and absence of gloeocystidia characterize this species.

Stereopsis hiscens Berk. & Rav.) D.A. Reid,

Beiheft Nova Hedw. 18:298, 1965. - *Thelephora hiscens* Berk. & Rav., Grevillea 1:148, 1873. - *Thelephora ravenelii* Berk., Grevillea 1:148, 1873. - *Thelephora pusilla* Currey, Trans. Linn. Soc. Lond. Series 11, 1:126, 1876. - *Thelephora circinella* Pat. & Gaill., Bull. Soc. mycol. Fr. 4: 38, 1888. - *Thelephora ninh-thaiensis* Pat., J. Bot., Paris 11: 34, 1897. - *Thelephora tentaculata* Pat., Bull. Soc. mycol. Fr. 15, 201, 1899. - *Thelephora pusiola* Pat. in Duss, Enum. Champ. Guadeloupe et Martinique 12, 1903. - *Stereum insolitum* Lloyd, Lloyd Mycol. Writings 5:665, 1917. - *Stereum incisum* Lloyd Lloyd Mycol. Writ. 6:988, 1920. - *Stereum cuneiforme* Lloyd Lloyd Mycol. Writ. 6:988-989, 1920. - *Stereum multifidum* Lloyd Lloyd Mycol. Writ. 7:1311, 1924. - *Stereum divisum* Petch, Ann. R. Bot. Gdns, Peradeniya 9:270, 1925. - *Podoscypha intermedia* Pat. Mem. Acad. Malgache 6:11-12, 1928.

Basidiocarps erect, 1-3 (-6) cm high, either discrete or becoming confluent and then large, complicated, and rosette-like or clavarioid with flattened branches. Upper surface when fresh variable in colour, pale yellowish, pale ochraceous drab, or greyish white, becoming dingy purple or vinaceous in all parts on bruising; dried specimens light brown to greyish-brown with faint zonation, with the surface smooth or minutely adpressed silky-fibrillose.

Hymenium smooth, dark bluish-grey, greyish-purple, or vinaceous-umber, becoming dark purplish-grey or brownish-vinaceous when dried. Stipe to 3.0 cm long, simple or branched, white, pallid yellowish or greyish. Context to 0.35 cm thick near the base of the basidiocarp, coriaceous, firm, pale wood-coloured, or pallid ochraceous, with faint darker zones near the margin. Smell rather strong, polyporoid.

Hyphal system monomitic: generative hyphae 2.5-3.5(- 5) μm wide, hyaline or very pale brown, with clamp connections.

Gloeocystidia absent,

Basidia 12-24 x 5-7 μm , tetrasterigmatic.

Basidiospores 4.5-6.5(- 8) x 3-5-5.5 (-7) μm , elliptic, hyaline, to faintly brown.

Substrata Terrestrial, but probably arising from buried wood or roots.

Distribution Occurs in most tropical or subtropical regions throughout the world.

Remarks The branching and splitting of basidiocarps, combined with the fusion of adjacent ones, make this probably the most variable in macroscopic appearance of all stipitate stereoid fungi.

Stereopsis humphreyi (Burt.) Redhead & D. A. Reid,

Can. J. Bot. 61:3088, 1983. - *Craterellus humphreyi* Burt, Ann. Mo. Bot. Gard. 1:344, 1914.

Basidiocarps stipitate, up to 3.0 cm, high and 3.0 cm wide, solitary, or rarely two to three pilei together, narrowly reniform or flabelliform becoming more or less circular with the two lobes almost overlapping and with undulating margin. Upper surface dull white, initially with a silky appearance, then more or less glabrous to slightly rugulose and somewhat more floccose or scaly towards the stipe. Hymenial surface well defined, often decurrent onto the stipe, cream coloured, smooth, stipe up to 3.0 cm long and 3.0 mm in diameter, tough and dense, initially white, becoming slightly cinnamon, velutinate to pubescent but becoming glabrous from the top, strigose at the point of attachment.

Hyphal system monomitic, generative hyphae, 2-4 μm wide, with clamp connections.

Gloeocystidia absent.

Basidia 30-50 x 3.5-6 μm , clavate, tetrasterigmatic.

Basidiospores 6.5-9 x 3.5-5.5 μm , elliptic to subglobose.

Substrata: Terrestrial in coniferous forest, or on wood of conifers such as *Picea* and *Tsuga*.

Distribution. Known from Canada and the north of the United States.

Remarks. Seemingly restricted to coniferous forests or coniferous wood, thus, easy to separate from the other *Stereopsis* spp. described here.

Stereopsis malaiensis D. A. Reid,

Beiheft Nova Hedwigia 18:310, 1965.

Basidiocarps up to 2 cm high, and 1.5 cm wide, thin, spatulate to flabelliform, often as small tufts, pileus pale to ochraceous brown, darker towards the base, smooth to very finely fibrillose towards the stipe, hymenial surface smooth, pale buff to ochraceous or pale brown, stipe whitish, up to 4 mm, log pale brown.

Hyphal system generative hyphae 2.5-4 μm wide, simple septate.

Gloeocystidia absent.

Basidia 35-50 x 5-7 μm , clavate, tetrasterigmatic.

Basidiospores 4-5 x 3-4 μm , broadly elliptic to subglobose.

Substrata: Terrestrial on sandy soil.

Distribution: Known only from the type locality in Malaya.

Remarks. The combination of lack of all cystidia, simple septate hyphae and small spores characterize this species.

Stereopsis mussoriensis (Henn.) D. A. Reid,
Beiheft Nova Hedwigia 18:311, 1965. – *Cladoderris mussoriensis* Henn., Hedwigia 40:324, 1901.

Basidiocarps up to 3 cm high, and 1-4 cm wide, thin, spatulate to flabelliform, often in groups, pileus isabelline and velutinate, hymenial surface smooth, straw coloured with radiating, smooth branched ridges.

Hyphal system generative hyphae 4-6 μm wide with clamps.

Gloeocystidia cylindrical, up to 130 μm long and 4-8 μm wide.

Basidia 35-40 x 5-7 μm , clavate, tetrasterigmatic.

Basidiospores 5-6.5 x 3-4.5 μm , broadly elliptic to subglobose.

Substrata: Terrestrial.

Distribution: Known only from the type locality from Mussorie in India.

Remarks. The combination of gloeocystidia and ribbed hymenial surface characterize this species.

Stereopsis nigripes D.A. Reid,
Beiheft Nova Hedw. 18:312, 1965.

Basidiocarps to 5.5 cm high and 1-1.5 cm wide, solitary, spatulate, or narrowly flabelliform, usually simple but occasionally with 2-3 pilei. Pilei strongly inclined vertically, minutely pruinose-subvillose and appearing almost powdery when viewed with a lens, initially white, becoming more or less deep brown to dark greyish, retaining a white margin, darker and almost blackish when dry. Hymenial surface sharply delimited from the stipe, smooth, waxy, pale ochraceous-fawn becoming dark grey to brown or almost black. Stipe 2.0-3.0 cm long and 2.0-3.0 mm wide, uneven, erect, dull, black, matt, appearing relatively long compared with the pileus. Context soft, fibrillose-subcoriaceous, brownish with darker zones. The whole basidiocarp becomes exceedingly brittle when dry.

Hyphal system monomitic, generative hyphae 2.5-3 μm wide hyaline to pale brown, with clamp connections.

Gloeocystidia absent.

Basidia 14-22 x 4-8 μm , clavate, tetrasterigmatic.

Basidiospores 5-8 (-9.5) x 3.5-5 μm , elliptic to subglobose.

Substrata: Terrestrial in woodland and forests, but probably arising from dead roots.

Distribution: Known from Peru and Ecuador.

Remarks A very distinctive fungus, with a long, narrow, black stipe bearing a rather small dark pileus, which could easily be mistaken for the conidial state of some *Xylaria* at a casual glance.

Stereopsis pseudocupulata Z. T. Guo,

Bull. Bot. Res. Harbin 7: 94, 1987.

Basidiocarps up to 3 cm high, and 1-4 cm wide, thin, curved and almost cupulate, pileus isabelline to pale brown, glabrous, hymenial surface smooth, straw coloured to pale brown with radiating, smooth branched ridges.

Hyphal system generative hyphae 4-6 µm wide with clamps.

Gloeocystidia cylindrical, up to 130 µm long and 4-10 µm wide.

Basidia not known.

Basidiospores 4-5 x 2.5-3.5 µm, broadly elliptic.

Substrata: Terrestrial.

Distribution: Known only from the type locality in Northern China.

Remarks. The species is similar to *S. mussoriensis*, but separated by slightly smaller spores. The description is taken from the original Latin one.

Stereopsis radicans (Berk.) D.A. Reid,

Beiheft Nova Hedwigia 18:314, 1965. - *Thelephora radicans* Berk., Hooker's Lond.

J. Bot. 3, 190, 1844. - *Thelephora acanthacea* Lev., Ann. Sci. nat. Series III, 5:147,

1846. - *Thelephora xerantha* Berk. & Curt., Proc. Amer. Acad. Arts Sci. 4:123, 1860. -

Cladoderris thwaitesii Berk. & Br. J. Linn. Soc. (Bot.) 14:63, 1873. - *Stereum auriforme*

Lloyd Lloyd Mycol. Writ. 7:1246, 1924. - *Stereum lignosum* Lloyd, Lloyd Mycol. Writ.

7:1336, 1925.

Basidiocarps 1.3-10 cm high, 0.3-4.0(-9.0) cm wide, solitary, gregarious or subcaespitose, considerably variable in shape, from narrowly spatulate or flabellate to pseudo-infundibuliform, the variability often compounded by fusion of adjacent basidiocarps to form large amorphous masses extending for several centimetres, upper surface minutely radially fibrillose, initially white then pale cream, pale tan or ochraceous, with faint darker zones, darker yellowish-tan in old specimens, hymenial surface smooth or thrown into undulating radial folds, waxy, pale tan-ochraceous or pale cinnamon-ochraceous becoming dingy vinaceous-drab from the base, stipe 0.5-4.5 cm long, 2.-10 mm wide, white, submentose or nearly smooth, often with white mycelial fibrils at the base, becoming darker when dried, context subcoriaceous, fibrillose, white or pallid, brittle when fresh, becoming tough when dried. When fresh, all parts of the basidiocarps rapidly become dull purplish or dull vinaceous-brown where bruised or handled. Smell rather strong, fungoid.

Hyphal system monomitic, generative hyphae, 2-3.5 µm wide with clamp connections (which can be difficult to demonstrate). Frequently, some hyphae are found with long, unbranched, aseptate segments which may become thick-walled, and are easily then mistaken for skeletal hyphae unless traced along their length, when they will be seen to be normal thin-walled, clamped hyphae at either end.

Gloeocystidia 40-70 x 4-8 µm, cylindrical, and often very abundant.

Basidia 40-70 x 5-8 µm, narrowly clavate, bisterigmatic with 2 large sterigmata.

Basidiospores (5) 6-8 x 5-7.5 µm, elliptic to subglobose.

Substrata: Terrestrial, but arising from dead wood or roots. Often found close to bamboo.

Distribution: Cosmopolitan in the tropical zone.

Remarks. The rapid colour change to purplish or dark brown when the basidiocarp is handled or bruised, is a very distinct character for this species and not easily forgotten once experienced. The basidiocarps are thicker than for the other species described here, and this and the long unbranched segments of the generative hyphae may mislead the observer to think he has a *Podoscypha* species at hand.

Stereopsis raphiae D. A. Reid,

Beiheft Nova Hedwigia 18:322, 1965. – *Stereopsis gracilistipitata* Z. T. Guo, Bull. Bot. Res. Harbin 7: 90, 1987.

Basidiocarps up to 10 cm high, and 7 cm wide, thin, spatulate to flabelliform, single or up to 3 basidiocarps from common base, pileus greyish brown to slight vinaceous and with narrow ochraceous zones, hymenial surface smooth, waxy, semi translucent with a white latex when cut, grey to vinaceous grey, drying brownish to darker grey in zones, stipe 1-5 cm long 3-6 mm wide, subcylindrical, concolorous with the pileus.

Hyphal system generative hyphae 3-5 μm wide, simple septate.

Gloeocystidia cylindrical, up to 200 μm long and 5-10 μm wide, pale yellow.

Basidia 40-70 x 79 μm , clavate, tetrasterigmatic.

Basidiospores 6-7.5 x 4.5-7 μm , broadly elliptic to subglobose.

Substrata: Terrestrial on palm roots.

Distribution: Singapore and Uganda.

Remarks. The combination of gloeocystidia and the simple septate hyphae are distinct for this rare species. From the Latin description it seems that the Chinese specimen is only a small specimen of *S. raphiae*.

Stereopsis reidii Losi & Gennari,

Rev. Micol. 40:73, 1997.

Basidiocarps stipitate, infundibuliform to spatulate, pileus whitish to pale ochraceous or yellowish, minutely fibrillose, hymenial surface smooth the slightly rugulose, margin undulate, finely fimbriate to incised, stipe whitish, up to 1 cm long and 1-2 mm in diameter.

Hyphal system monomitic, generative hyphae thin-walled and with simple septa, 2-6 μm wide.

Cystidia absent.

Basidia 25-40 x 4-5 μm , narrowly clavate, tetrasterigmatic.

Basidiospores 4.5-6 x 3-4 μm , elliptic to subglobose.

Habitat. The type was found on the ground in a mixed forest.

Distribution. A rare species known only from the type locality in Northern Italy.

Remarks. The species should be easy to recognize by the whitish, thin stipitate basidiocarps.

Stereopsis sparassoides (Henn.) D. A. Reid,

Beiheft Nova Hedwigia 18:325, 1965. – *Thelephora sparassoides* Henn., Hedwigia 40:324, 1901. – *Stereopsis crassipileata* Z. T. Guo, Bull. Bot. Res. Harbin 7: 90, 1987.

Basidiocarps 1-4 cm high, and 2-3 cm wide, thin, spatulate to flabelliform, single or up to several basidiocarps from common base, pileus pale brown, strongly lobed or split with radiating ribs or grooves. hymenial surface slightly ribbed when fresh becoming smooth when dry, violet grey, paler when dry, stipe up to 2 cm long, 1-2 mm wide, dark brown and glabrous.

Hyphal system generative hyphae 2-4 μm wide, simple septate.

Gloeocystidia absent.

Basidia 30-50 $\times$ 4-6 μm , tetra- or bisterigmatic.

Basidiospores 3.5-4.5 $\times$ 2.5-3 μm , broadly elliptic to subglobose.

Substrata: Terrestrial.

Distribution: Known the type locality in India and Northern China.

Remarks. The combination of the simple septate hyphae and the dark colours are distinct for this rare species.

Stereopsis straminea Ryvarden,

Norw. J. Bot. 2233, 1975.

Basidiocarps stipitate, spatulate, up to 3 cm high and 1.5 cm wide, 2-3 mm thick, pliable when fresh, horny hard when dry, pileus dark straw coloured, smooth, glabrous, at margin finely whitish when actively growing, stipe up to 6 mm long, yellowish to pale brown, hymenophore smooth, straw coloured as pileus..

Hyphal system monomitic, generative hyphae thin-walled and with simple septa, 2-5 μm wide.

Cystidia absent.

Basidia 25-50 $\times$ 4-5 μm , narrowly clavate, tetrasterigmatic.

Basidiospores 7.5-8 $\times$ 3-4 μm , cylindrical.

Habitat. On humid soil in rain forest.

Distribution. Known only from the type locality in Kenya.

Remarks. The large cylindrical spores and the straw coloured basidiocarps are distinct.

Stereopsis vitellina (Plowr.) D. A. Reid,

Beih. Nova hedwigia 18:326, 1865. – *Thelephora vitellina* Plowr., Journ. Bot. London 39:385, 1901.

Basidiocarps stipitate, variable, infundibuliform to spatulate, 2-3 cm long pileus whitish to pale ochraceous or yellowish, minutely fibrillose, hymenial surface smooth the slightly

rugulose, cream to lemon coloured, orange yellow when dry, margin undulate, finely fimbriate to incised, stipe darker than pileus, up to 1 cm long and 1–2 mm in diameter. **Hyphal system** monomitic, generative hyphae thin-walled and with simple septa, 2–4 μm wide.

Cystidia absent.

Basidia 25–40 $\times$ 4–5 μm , narrowly clavate, tetrasterigmatic.

Basidiospores 3–4 $\times$ 2.2–2.5 μm , elliptic.

Habitat. On humid soil, often on disturbed places.

Distribution. Northern Europe.

Remarks. The cream to lemon coloured basidiocarps and the small spores characterize this species.

Excluded species

Stereopsis craspedia (Fr.) Z. T. Guo, Bull. Bot. Res. Harbin 7: 88, 1987. – *Thelephora craspedia* Fr. R. Soc. Sci Upsal. III 1:108, 1851. – *Stereum craspedium* (Fr.) Burt, Ann. Miss. Bot. Gard. 7:113, 1920.

Fries name (type in UPS examined) is based on a specimen of *Hydnopolyporus fimbriatus* (Cooke) D. A. Reid from South America. The identity of Guo's specimen on which he based the combination, is unknown.

References

Reid, D. A. 1965: A monograph of the stipitate stereoid fungi, Beiheft Nova Hedwigia 18:1-384 with 48 plates.

Trametes lamelloporus nova species

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Abstract

Trametes lamelloporus is described as new based on a specimen from Thailand. The species is characterized by a concentric lamellate hymenophore.

Introduction

During field work in Thailand (Ryvarden 1979) a peculiar whitish polypores with concentric lamellae was collected. It has been resting on my desk in a hope that it would be possible to find a suitable name for such a distinct polypore. Even if it undoubtedly is related to the more widespread *Trametes villosa* (Fr.) Kreisel, it strikingly different by the lamellate hymenophore. The complex of species around *T. villosa*, *T. pavonia* (Hooker) Ryvarden and *T. versicolor* (L.:Fr.) Lloyd includes species where the differencing characters partly are based on pore size and to lesser degree the pileus cover which varies from coarsely hirsute to adpressed velvety. However, all these species have a distinct poroid hymenophore, strikingly different from that of the new species described here.

Trametes lamelloporus Ryvarden, nov. sp. Index fungorum 555764

Holotype: Thailand, Chinang Doo, Doi Chiang nat. park 22. February 1979 on dead hardwood, leg. L. Ryvarden 17908 in Fungarium O.

Basidiocarps annual, pileate, dimidiate to reflexed, often fused laterally to form compound basidiocarps, flexible, up to 3 cm wide and long, up to 2 mm thick at the base; upper surface hirsute, white to pale ochraceous, slightly zonate with persistent tomentum, margin thin, undulated to lobed, often curled in dry specimens; pore surface white to cream, hymenophore concentrically lamellate with pores absent or irregularly developed close at the base of the lamellae, about 2 lamellae per mm measured radially, in places with minute small cross walls between the lamellae, dissepiments usually dentate to lacerate, lamellae up to 1 mm deep, context white and about 400 μ m thick.

Hyphal system trimitic; generative hyphae with clamps, hyaline, thin-walled, 1-2.5 μ m wide; skeletal hyphae hyaline, thick-walled to solid, 2-5 μ m wide; binding hyphae tortuous, solid, hyaline, common, 1-2.5 μ m wide.

Basidiospores not seen.

Distribution. Only the type is known.

Remarks. The concentric lamellae make this to a distinct species. It is undoubtedly related to *T. villosa* (Fr.) Kreisel especially when seen from above. However, the lamellate hymenophore will immediately exclude this species.