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Nomenclatural novelties proposed in this volume:

New genera:

New Species:

New combinations

Content

The genus *Grammothelopsis* (Basidiomycota, aphyllophoroid fungi)

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Abstract
A synopsis of *Grammothelopsis* Jülich (Basidiomycota, aphyllophoroid fungi) is provided and *G. neotropica* Robledo & Ryvarden is described as new.
Key words: Polypores, Peru.

Introduction
Grammothelopsis was described by Jülich (1982) to accommodate *Grammothele macrospora* Ryvarden, which was based on a collection from Kenya in Africa. *Grammothele* is typified by *G. lineata* Berk. & M. A. Curtis, a species characterized by rather small, hyaline basidiospores, very different from the large thick-walled spores found in *G. macrospora* (see below). Both species have a hymenophore of shallow irregular pores, intermediate between a reticulate corticoid species and an ordinary polypore, and the genus was originally based on this character. Subsequently several additional species were described in *Grammothelopsis.* Following collections of a new species of *Grammothelopsis* from Peru, we decided it would be desirable to review the genus with descriptions of all accepted species.
The type species, *Grammothelopsis macrospora* (Ryvarden) Jülich, has thick-walled, dextrinoid spores and partly dextrinoid skeletal hyphae with a variable degree of branching which remind one strongly of a *Perenniporia* species.

However, the hymenium lining both the tube walls and the bottom of the tubes is a character unknown in that genus, which only includes species with an ordinary poroid hymenophore, distinctly different from the shallow pores seen in *G. macrospora.*

It is interesting to note that all species of *Grammothelopsis* are described from single collections, with the exception of *G. puiggarii* (Speg.) Rajchenb. & J.E. Wright where a second collection was found in 2002 (Ryvarden & de Meijer, 2002) some 90 years after Spegazzini's description in 1919.

Key to species of *Grammothelopsis*

1. Basidiospores non-dextrinoid **2**
1. Basidiospores dextrinoid **3**

2. Generative hyphae simple septate, hyphae of dissepiments encrusted ..... **2. G. incrustata**
2. Generative hyphae with clamps, hyphae of dissepiments smooth ..... **4. G. neotropica**

3. Basidiospores 11-15 µm long ..... **1. G. bambusicola**
3. Basidiospores longer than 15 µm **4**

4. Dendrohyphidia present in the pore mouths, African species ..... **3. G. macrospora**
4. Dendrohyphidia absent in the pore mouths, American species...**5. G. puiggarii**

1. Grammothelopsis bambusicola Ryvarden & de Meijer
Synopsis Fung. 15: 53, 2002.
Basidiocarp resupinate, effused, adnate, up to 40 mm long, 20 mm wide and 1 mm thick, pore surface white to pale cream, margin white, 1 mm wide, pores angular and regular, 4 per mm, tubes up to 0.7 mm deep, context 300 µm thick, white and cottony.
Hyphal system dimitic, generative hyphae hyaline and with clamps, 2-3 µm wide, skeletal hyphae thick-walled to solid, straight to slightly sinuous, mostly unbranched, but in the pore mouths distinctly arboriform and may easily be interpreted as binding hyphae, strongly dextrinoid, especially in the pore mouths.
Dendrohyphidia not seen.
Basidia mostly collapsed, up to 45 µm long and 10-15 µm wide, with four sterigmata.

Basidiospores broadly ellipsoid, thick-walled and strongly dextrinoid, 11-15 x 8-10 µm, slightly swelling in KOH and then with wall-thickness up to 2 µm.
Substrata and distribution. Known only from an unidentified, dead bamboo species in Brazil, Paraná, Colombo, Embrapa Florestas, 900 m.s.m, the type locality.
Remarks. The species reminds one of *G. puiggarii* from Brazil, but this latter species has larger, dentate and irregular pores (about 1 per mm) and larger basidiospores (17-20 x 10-12 µm). *G. incrustata* A. David & Rajchenb., from Guadeloupe, has large cylindrical basidiospores and strongly encrusted hyphae in the pore mouths as well as simple-septate generative hyphae.

2. Grammothelopsis incrustata A. David & Rajchenb.
Mycotaxon 22: 299, 1985.
Basidiocarp resupinate, effused, more or less circular in the type collection, up to 40 mm in diameter, pore surface ochraceous, margin white and slightly cottony, pores circular 3-4 per mm, pore mouth covered with a whitish to yellow pruina, tubes concolorous with pore surface, up to 0.7 mm deep, trama thin and resinous, context very thin and white.
Hyphal system dimitic, generative hyphae hyaline and simple-septate, 2-3 µm wide, skeletal hyphae arboriform, thick-walled to solid and sinuous, 2-4 µm wide, non-dextrinoid. The pruina along the pore mouths consists of generative hyphae covered with numerous small rod-like crystals.
Dendrohyphidia not seen.
Basidia not seen.
Basidiospores cylindrical to ellipsoid, thick-walled and non-dextrinoid, 16-22 x 6-8 µm, some spores slightly truncate and with a distinct germ pore.
Substrata and distribution. Only known from an unknown dead hardwood in the type locality.
Remarks. The species is unique in the genus in having simple-septate and encrusted generative hyphae and large, non-dextrinoid spores

3. Grammothelopsis macrospora (Ryvarden) Jülich
Bibl. Mycologica 85: 400, 1981. - *Grammothele macrospora* Ryvarden, Prelim. Polypore Fl. East Africa p. 43, 1980.
Basidiocarp resupinate, effused, about 60 x 80 mm in the type collection, adnate, up to 400 µm thick, pore surface pale brown, margin white to pale ochraceous, narrow to wide, pores angular to elongated, on average 1-2 per mm, some pores up to 3 mm long, finely dentate, pore mouths and tube walls dotted with white hyphal pegs, partly as conical studs, partly as elongated short ridges, tubes pale brown, context very thin, pale brown.

Hyphal system di-trimitic, generative hyphae hyaline and with clamps, 1-3 µm wide, trama and subhymenium dominated by skeletal hyphae, thick-walled to solid, pale yellowish, straight to slightly sinuous, mostly unbranched, but in the pore mouths distinctly arboriform and may easily be interpreted as binding hyphae. We prefer to call them arboriform skeletal hyphae as they apparently have a long unbranched base; these branched parts in the pore mouths have a strong to weak dextrinoid reaction, otherwise the skeletal hyphae are non-dextrinoid.
Dendrohyphidia richly present both in the hymenium and along the sterile pore mouths, up to 30 µm long.
Basidia both in the bases of the tubes and on the tube walls, up to 50 µm long and 10-18 µm wide, but not seen fully mature with sterigmata.
Basidiospores broadly ellipsoid, thick-walled and strongly dextrinoid, 15-20 x 7.5-11 µm, wall-thickness up to 2 µm, with a distinct germ pore.
Substrata and distribution. Only known from deciduous wood in the type locality in the Coast province of Kenya.
Remarks. The species is highly characteristic with its large, dextrinoid, thick-walled spores and the dendrohyphidia which have not been observed in any other species of the genus.

4. Grammothelopsis neotropica Robledo & Ryvarden **nov. sp.** **Fig. 1**
Ad *G. puiggarii* (Speg.) Rajchenb. & J. E. Wright, sed pori 4 per mm (1-2 per mm in *G. puiggarii*) et basidiosporis angustiores (7-8 µm) et non dextrinoidei (strongly dextrinoid and 10-12 µm wide in *G. puiggarii*).
Holotype: Peru, Junin dep. La Merced, Kimo, 600 m.s.m, 2. March.2007, Ryvarden 47361, O, Isotype in CORD.
Basidiocarp resupinate, effused, adnate, up to 110 mm long, 10 mm wide and 1 mm thick, pore surface ochraceous, margin white, 1 mm wide, pores angular and regular, 4 per mm, tubes up to 0.7 mm deep, context 300 µm thick, white and cottony.
Hyphal system dimitic, generative hyphae hyaline and with clamps, 2-3 µm wide, skeletal hyphae 2-3 µm wide, thick-walled to solid, straight to slightly sinuous, mostly unbranched, but in the pore mouths distinctly arboriform and may easily be interpreted as binding hyphae, without reaction in Melzer's reagent.
Dendrohyphidia not seen.
Basidia mostly collapsed, up to 42 µm long and 10-15 µm wide, with four sterigmata.
Basidiospores broadly ellipsoid, thick-walled and without reaction in Melzer's reagent, 18-20 x 7-8 µm, slightly truncate, wall-thickness up to 2 µm, with a distinct germ pore.

Substrata and distribution. Known only from an unidentified hardwood log at the type locality.

Remarks. The species is recognized by its large, broadly ellipsoid, non-dextrinoid, thick-walled basidiospores, clamped generative hyphae and angular and regular pores (4 per mm). It is similar to *G. puiggarii,* but the latter species has larger pores (1-2 per mm) and wider basidiospores (10-12 µm wide) which are strongly dextrinoid. *G. incrustata* also has non-dextrinoid basidiospores, but has encrusted gernerative hyphae with simple septa. Macroscopically *G. neotropica* is similar to *G. bambusicola,* but the latter species has skeletal hyphae and smaller basidiospores (11-15 x 8-10 µm) which are strongly dextrinoid.

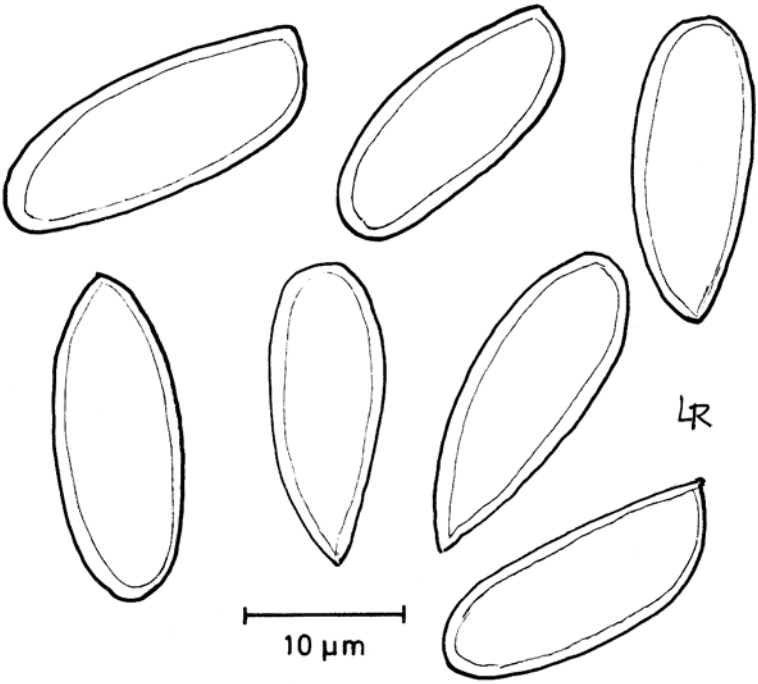

Fig 1. *Granmmothelopsis neotropica*, basidiospores

5. Grammothelopsis puiggarii (Speg.) Rajchenb. & J.E. Wright
Mycologia 79: 253, 1987. – *Hymenogramme puiggarii* Speg., Bol. Acad. Nac. Cien. Córdoba 23: 412, 1919.
Basidiocarp resupinate, effused, adnate, up to 40 mm long, 20 mm wide and 1 mm thick, pore surface ochraceous, margin white, 1 mm wide, pores angular and regular, 1-2 per mm, tubes up to 6 mm deep, context 300 µm thick, white and cottony.
Hyphal system dimitic, generative hyphae hyaline and with clamps, 2-3 µm wide, skeletal hyphae thick-walled to solid, straight to slightly sinuous, mostly unbranched, but in the pore mouths distinctly arboriform and may easily be interpreted as binding hyphae, strongly dextrinoid, especially in the pore mouths.
Dendrohyphidia not seen.
Basidia mostly collapsed, up to 35 µm long and 10-12 µm wide, with four sterigmata.
Basidiospores broadly ellipsoid, thick-walled and strongly dextrinoid, 17-20 x 10-12 µm.
Substrata and distribution. Brazil, São Paulo, which is the type locality and where the second collection was also made (see Ryvarden & de Meijer, 2002).
Remarks. The species is recognized by its large, angular pores (1-2 per mm), its large, dextrinoid, thick-walled basidiospores, and its dextrinoid skeletal hyphae.

References.
Jülich, W. 1982: Higher taxa of Basidiomycetes. Bibl. Mycologica 85: 1-485.
Ryvarden, L. & de Meijer, A. A. R. 2002: Studies in neotropical polypores 14. New species from the state of Paraná, Brazil. Synopsis Fung. 15: 34-69.

Ceriporiopsis herbicola (Polyporaceae, Basidiomycota) Fortey[1] & Ryvarden[2] nov. sp.

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Abstract. *Ceriporiopsis herbicola* Fortey & Ryvarden is described as new, based on an English collection made on *Arctium* sp. (Asteraceae).

Introduction

The polypores of Europe are very well known, and documented by several books such as Ryvarden & Gilbertson (1983-85), Bernicchia 2005 and Donk 1973. Nevertheless, collecting in recent years have revealed that there still are undescribed poroid species on the continent. Recently described examples include *Antrodia sandalae* Bernicchia & Ryvarden, *A. pseduosinuosa* Henrici & Ryvarden, *Antrodia citrina* Bernicchia & Ryvarden, *Phellinus cavicola* Pouzar and *Atrodiella ichnusana* Bernicchia, Renvall & Arras.

However, it came as a surprise when one of us (R. F.) found a beautiful resupinate polypore on the stem of a dead *Arctium* (Asteraceae) and we could find no suitable name for it. It may of course be a widespread species, but previously overlooked, since few mycologists look for basidiomycetes on old and rotten herbs where the mycota normally is dominated by Fungi imperfecti and several types of small ascomycetes.

Thus, we urge collectors to take a close look on dead larger herbs late in the season; it is an unusual habitat which may yet reveal a set of unusual basidiomycetes.

Ceriporiopsis herbicola Fortey & Ryvarden nov. sp. **Plate 1**
Ad *Ceriporiopsis gilvescens* (Bres.) Domanski, sed 1-2 pori per mm (4-6 per mm in *C. gilvescens*).
Holotype: England, Oxfordshire, Henley on Thames, Grey´s Court, 10th December 2006, on dead stems of *Arctium* sp (Asteraceae). Leg. R. A. Fortey, K 132752, Isotype in O.
Name: from occurrence on herbaceous substrate
Basidiocarps annual, resupinate, adnate, soft when fresh, brittle when dry, up to 2 mm thick and 4x 1 cm long and wide, margin narrow and fibrillose, pale cinnamon with a reddish tinge, pore surface concolorous, pores angular to circular, 1-2 per mm; tubes to 2 mm deep, lower parts and bottom whitish, distinctly different from the pore surface and outer parts of tube walls, subiculum thin and dense, pale cinnamon.
Hyphal system monomitic; generative hyphae with clamps, thin to slightly thick-walled, 2-4 µm in diam, in the dissepiments densely covered with small crystals.
Cystidia and other sterile hymenial elements absent.
Basidia clavate, 4-sterigmate, 14-20 x 4-6 µm, with a basal clamp.
Basidiospores ellipsoid, hyaline, thin-walled, smooth, negative in Melzer's reagent, 4-4.5 x 2-2.5 µm
Substrata and Distribution. Known only from the type locality on *Arctium*.
Remarks. The new species is undoubtedly related to *C. gilvescens* sharing a monomitic hyphal system with generative hyphae covered with small crystals. However, the pores are much larger in *C. herbicola*, as indicated in the diagnosis and the colour has a distinct reddish pale brown colour, not seen in *C. gilvescens* which has a paler orange-brown pore surface. The red colour of the hyphae is striking when viewed under transmitted light.The basidiospores of *C. gilvescens* are cylindrical and 3.5-4.5(-5) x 1.5-2 µm, and thus narrower than is the case in *C. herbicola*.

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Donk, M. A. 1974: Checklist of European polypores. Verhand. Konl. Nederl. Akad. Wetensch. Afd. Naturkunde series 2, part 62.
Ryvarden, L. & Gilbertson, R. L. 1993: European polypores, Synopsis Fung. 6-7:1-743, Fugiflora, oslo, Norway.

Studies in Neotropical polypores 22. Additional new and rare species from Guyana

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Abstract: Six new species of polypore are described from material collected in a remote region of rainforest in the Pakaraima Mountains of Guyana. Taxonomic novelties are *Amauroderma flabellatum*, *Coltricia fibrosa*, *Ceriporia subspissa*, *Dichomitus grandisporus*, *Fomitopsis minuta*, and *Wrightoporia micropora*, and keys to Neotropical species in the respective genera are provided. The country checklist for Guyana is updated to include 12 new polypore records including the extremely rare taxa *Antrodiella dentipora*, *A. luteocontexta*, and *Junghuhnia minuta*, bringing the country checklist to 91.

Key words: Ganodermataceae, Guayana Highlands, Hymenochaetaceae, Neotropics, Polyporaceae, Polyporales.

Introduction

Polypores represent a phylogenetically diverse group of basidiomycetes united in possessing a poroid hymenophore and woody basidiomata. In 2003, Aime, Henkel and Ryvarden published a checklist of polypores known from Guyana including three new species and 29 new records, resulting from collections primarily made during a single field season. Additional fieldwork in subsequent years has yielded a further six undescribed species from six different polypore genera and 12 new records for the country, bringing the total number of polypore species known from Guyana to 91. Three of the new records comprise what is only the second known collection in existence for those species. In this paper we: (i) describe and illustrate six new species of polypore, *Amauroderma flabellatum*, *Coltricia fibrosa*, *Ceriporia subspissa*, *Dichomitus grandisporus*, *Fomitopsis minuta*, and *Wrightoporia micropora*; (ii) provide keys to the Neotropical species for the genera *Amauroderma*, *Coltricia*, *Ceriporia*, *Dichomitus*, *Fomitopsis*, and *Wrightoporia*; and (iii) provide updates to the checklist of polypores of Guyana, including illustrations of some rarely collected taxa. For additional details regarding collecting location, history of polypore study in Guyana, and materials and methods for microscopic examination, the reader is referred to Aime, Henkel and Ryvarden (2003).

Materials And Methods

Collecting was done during the primary (June-July) and secondary (December-January) rainy season in the Pakaraima Mountains, Upper Potaro River Basin, 20 km east of Mount Ayanganna, near the confluence of the Potaro River and Alukyadongbaru Creek. Coordinates of collecting sites were obtained with a hand-held GPS device wherever canopy cover permitted (general area N 5° 16', W 59° 54', 700-720 m elev.). Herbaria designations are according to Holmgren et al. (1990). Basidiomata were examined in the field for their fresh characteristics. Colors are described subjectively in general color terms and assigned alpha-numeric designations from Kornerup and Wanscher (1981). Basidiomata were dried in silica gel and packaged in individual zip-lock bags for transport.

Taxonomy

Amauroderma flabellatum Aime & Ryvarden sp.nov. **Fig 1. Plate 2c**

Ad Amauroderma trichodermatum Furtado affine, sed sine stipes, pori 7–9/mm (3–4/mm in A. trichodermatum).

Typus. Guyana. Pakaraima Mountains: Upper Potaro River, 20 km east of Mt. Ayanganna, near confluence of Potaro River and Alukyadongbaru Creek, general area N 5° 16', W 59° 54', ~700 m elev. 6 July 2003, *MC Aime 2332* (holotype BRG, Isotype O).

Basidiomata annual, flabellate and tapering to a short contracted lateral stipe; pileus single, applanate, felty when fresh, veined in dry condition, up to 6 cm wide and long, 3–5 mm thick, slightly concentrically zonate with dark brown (~6F8) tomentose zones alternating with glabrous black zones, in section with a thin dark crust; margin white when fresh, sharp and deflexed when dry, thin, dentate and incised. *Pore surface* white when fresh becoming ochraceous (~4A6) with age, pores round to angular with entire dissepiments, hardly visible to the naked eye, 7–9 per mm; tubes concolorous, up to 1 mm deep. *Stipe* reduced, lateral, concolorous with pileus, 8–15 x 2.5–7 mm. *Context* white, dense and homogenous, drying ochraceous, up to 2 mm thick.
Hyphal system dimitic, generative hyphae with clamps, hyaline, thin-walled, 2–4 µm wide, solid, hyaline, 2–3 µm in diameter; skeletal hyphae dextrinoid, thick-walled, hyaline to pale yellow, arboriform, 2–6 µm wide; pileus tomentum of agglutinated, pale brown thin- to thick-walled generative hyphae, 2–6 µm wide with distinct clamps. *Cystidia* not seen. *Basidia* not seen. *Basidiospores* subglobose, thick-walled with a distinct endosporic projection, hyaline to very pale yellow, inamyloid in Melzer's reagent, 7–8 x 6.5–7.5 µm.

Habit, habitat, and distribution. Known from dead hardwood only from the type locality.
Etymology. Flabella, Latin, referring to the fan-shaped basidiomata.
Remarks. The zonate pileus consisting of dark brown velutinate zones alternating with black glabrous zones, the very short, lateral stipe, and white pore surface are good field characteristics. The pileus surface of *A. flabellatum* is virtually identical to the boreal polypore *Ischnoderma resinosum* in the field. There are only two other known sessile species of *Amauroderma,* viz. *A. andina* Ryvarden, described from Venezuela (Ryvarden 2004) which has a pale brown upper surface, larger, angular pores of 5–6 per mm, and basidiospores measuring 8–10 µm in diameter. The other, *A. africana* Ryvarden, has a veined dark brown pileus, context with numerous black bands and spores measuring 8–10 µm in diameter. This is the second new species of *Amauroderma* from Guyana. The other, *A. coltricioides* T.W. Henkel, Aime & Ryvarden holds a unique place in the genus, being the only known species with smooth spores (Aime, Henkel, & Ryvarden 2003).

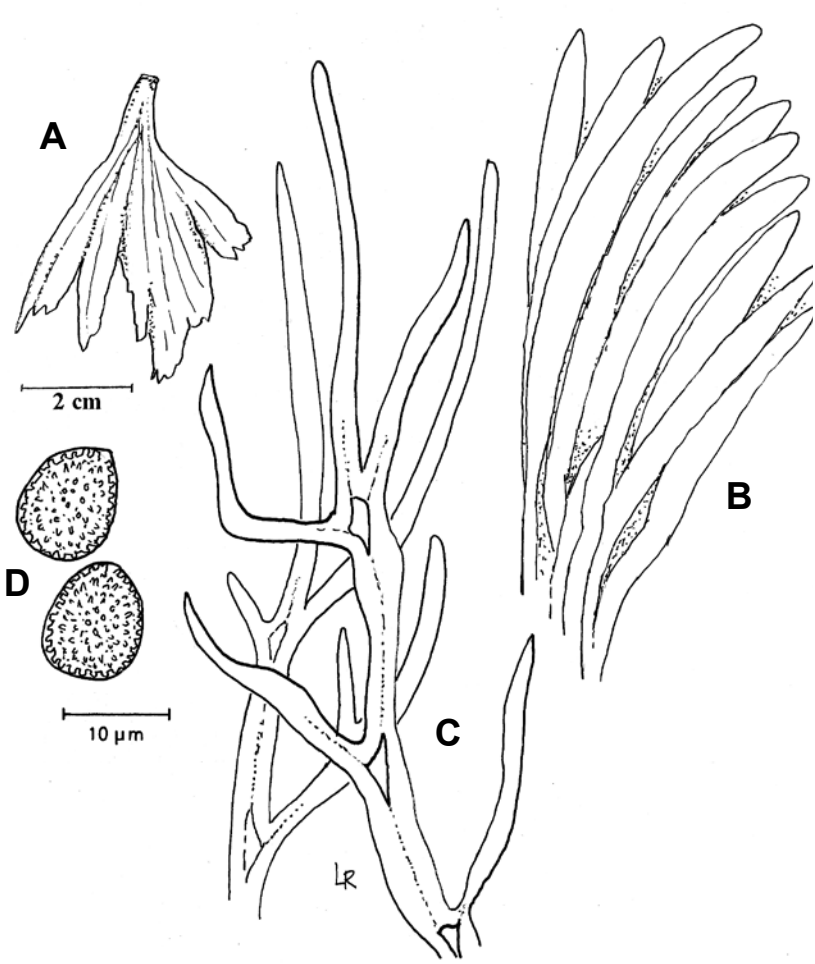

Fig. 1. *Amauroderma flabellatum* A) basidiocarp, B) hyphae from the dissepiments, C) arboriform hyphae from the context, D) basidiospores. From the holotype.

Key to the neotropical species of amauroderma with sessile basidiomata

1. Pileus pale brown, spores 8–10 µm in diameter, 5–6 pores per mm ..***A. andina*** Ryvarden
1. Pileus dark brown, almost black in some zones, spores 7–8 µm in diameter, 7–9 pores per mm ..... ***A. flabellatum*** Aime & Ryvarden

Ceriporia subspissa Aime & Ryvarden sp.nov. **Fig. 2, 7b**
Fructificatio resupinata et purpurea, pori angulati 4–5 per mm, systema hyphale monomiticum, hyphae generatoriae afibulatae, cystidia praesentia, basidiospo-rae ellipsoideae, indextrinoideae, 5.5–6.5 x 3–3.5 um.

Typus. Guyana. Pakaraima Mountains: Upper Potaro River, 20 km east of Mt. Ayanganna, near confluence of Potaro River and Alukyadongbaru Creek, general area N 5° 16', W 59° 54', approximately 650 m elev. Gregarious on hard-wood, 30 May 2001, *Aime 1715A* (Holotype BRG, Isotype O).

Basidiomata annual, resupinate, brittle and difficult to remove from the substratum, 1 mm thick. *Pore surface* deep reddish brown 5D8, pores thin-walled, round to angular, elongated on sloping substrate, 4–5 per mm, tube layer concolorous, up to 1 mm deep, subiculum very thin, deep reddish brown.

Hyphal system monomitic, generative hyphae hyaline, thin- to slightly thick-walled, lacking clamp connections, 3–5 µm in diam., with sparse branch-ing. *Cystidia* present in the hymenium, these ventricose with acuminate apex, smooth and thin walled, up to 50 µm long x 5–10 µm wide. *Basidia* clavate, 4-sterigmate, 12–15 x 5–6 µm, unclamped at the base. *Basidiospores* ellipsoid, 4–4.5 x 2 µm.

Habit, habitat, and distribution. Fruiting gregariously on decaying hard-wood in tropical rainforest; known only from the type locality.

Remarks. The species is undoubtedly related to *C. cystidiata* Ryvarden & Iturr., described from Venezuela. However, in contrast to *C. subspissa*, the latter is ochraceous, has allantoid spores and slightly encrusted cystidia. The basidiomata of *C. subspissa* are very thin and easily overlooked due to its dark cryptic color.

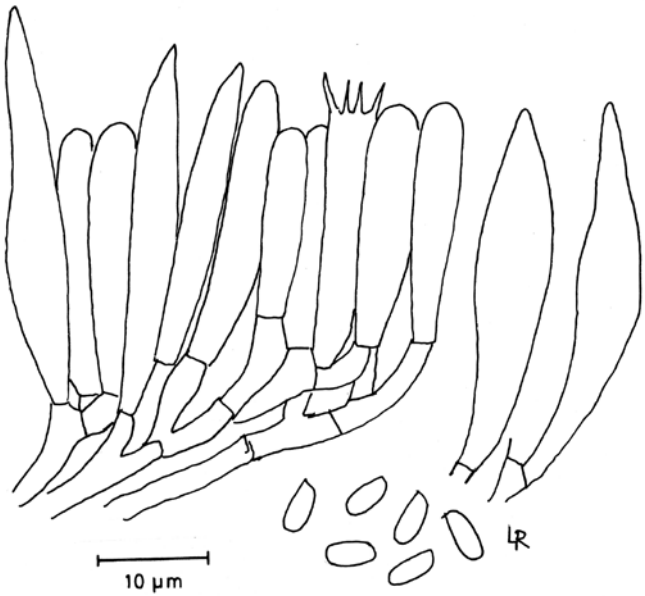

Fig. 2. *Ceriporia subspissa*, part of hymenium, cystidia and basidiospores. From the holotype.

Key to the neotropical species of *Ceriporia*

1. Cystidia present 2
1. Cystidia absent 3

2. Basidiocarp purplish, spores ellipsoid, 5.5–6.5 x 3–3.5 µm, cystidia smooth ***C. subspissa*** Aime & Ryvarden
2. Basidiocarp ochraceous, spores allantoid, cystidia smooth ***C. cystidiata*** Ryvarden & Iturr. (see Ryvarden & Iturriaga 2003:1067).

3. Basidiomata purplish to orange 4
3. Basidiomata whitish to pale brown 5

4. Basidiocarp purplish, pores 3–4 per mm ***C. purpurea*** (Fr.) Donk (see Gilbertson and Ryvarden 1986:181).

4. Basidiocarp deep orange to reddish brown, pores 7–9 per mm ***C. spissa*** (Schw.:Fr.) Rajchenj. (see Gilbertson and Ryvarden 1986:183).

5. Basidiospores allantoid, 7–9 μm long ***C. reticulata*** (Pers.:Fr.) Domański (see Gilbertson and Ryvarden 1986:182).
5. Basidiospores shorter or different 6

6. Basidiospores allantoid to cylindrical 7
6. Basidiospores subcylindrical, ellipsoid to subglobose 8

7. Basidiospores allantoid, 4–6 μm long, pores thin-walled, 3–5 per mm ***C. viridans*** (Berk. & Broome) Donk (see Gilbertson and Ryvarden 1986:185).
7. Basidiospores cylindrical 4–4.5 μm long pores thick-walled, 2–3 per mm ***C. albobrunnea*** Ryvarden & Iturr. (see Ryvarden & Iturriaga 2003:1067).

8. Basidiospores subcylindrical to oblong ellipsoid, pores regular 9
8. Basidiospores subglobose, pores white and often somewhat dentate or lacerated ***C. xylostromatoides*** (Berk.) Ryvarden (see Gilbertson and Ryvarden 1986:186).

9. Pore surface evenly brown when dry, often with whitish margin ***C. ferruginicincta*** (Murrill) Ryvarden (see Gilbertson and Ryvarden 1986:180).
9 Pore surface white to pale tan or buff 10

10. Pores 6–8 per mm, basidiospores 3–3.5 x 1.5–2 μm ***C. microspora*** I. Lindblad & Ryvarden (see Lindblad & Ryvarden 1999:337)
10. Pores 2–5 per mm, basidiospores 4–5 x 2–2.5 μm ***C. alachuana*** (Murrill) Hallenb. (see Gilbertson and Ryvarden 1986:178)

Coltricia fibrosa Aime et Ryvarden sp. nov. **Fig. 3, plate 3**
Fructificatio stipitata, pileus brunneus, pori angulati 2–3/mm, brunnei, systema hyphale monomiticum, hyphae generatoriae afibulatae, basidiosporae ellipsoideae, leves, pallide flavae, 10–11 x 5–7 μm.

Typus. Guyana. Pakaraima Mountains: Upper Potaro River, 20 km east of Mt. Ayanganna, near confluence of Potaro River and Alukyadongbaru Creek, Paluway plot 1, *Dicymbe corymbosa*-dominated forest, general area N 5° 16', W 59° 54', ~710 m elev. Scattered on decorticated wood, 17 June 2002, *MC Aime 2054* (Holotype BRG, Isotype O).

Basidiomata annual, laterally stipitate. *Pileus* flabellate to spathulate,

8–15 mm wide and long, deep reddish brown 8F8 when fresh, drying 7D8, striate with bristle-like bundles of hyphae, erect in the centre, partly extending beyond the margin, margin thin, deflexed when dry. *Pore surface* reddish brown, pores thin-walled, angular, 2–3 per mm. *Stipe* 12–20 x 0.5–1 mm, evenly thick, dark reddish brown and finely velutinate and below the fine tomentum there is a harder and darker core. *Context* reddish brown, fibrous, up to 2 mm thick. *Odor and taste* indistinct.

Hyphal system monomitic; generative hyphae lacking clamp connections, thin-walled to thick-walled, golden to rusty brown throughout, 3–8 µm in diam. *Cystidia* setae or other sterile hymenial elements absent. *Basidia* clavate 20–42 x 6–9 µm with 4 sterigmata. *Basidiospores* ellipsoid, smooth, thick-walled, golden-yellow and inamyloid in Melzer's reagent, 10–11 x 5–7 µm in diameter.

Other specimens examined. Guyana. Pakaraima Mountains: Upper Potaro River, 20 km east of Mt. Ayanganna, near confluence of Potaro River and Alukyadongbaru Creek, *Dicymbe corymbosa*-dominated forest, 27 May 2000, *MC Aime 1040* (BRG, O); Paluway 1 plot, *Dicymbe corymbosa*-dominated forest, 30 June 2003, *MC Aime 2266* (BRG, BPI).

Habit, habitat, and distribution. Scattered to numerous in accumulated humic layer covering tree trunks and stumps in forests dominated by *Dicymbe corymbosa*. Known only from the type locality, but possibly overlooked in other places due to its small size and cryptic coloring.

Etymology. Fibrosa, Latin, referring to stiff fibrous cover of the pileus.

Remarks. This species is characterized by its distinct, laterally stipitate, strongly striate pileus composed of pointed radially oriented bundles of brown hyphae, resembling the back of a hedgehog. The species is undoubtedly related to *C. verrucata* Aime, T.W. Henkel & Ryvarden (2003) which was described from the same area, but differs in possessing strongly pruinate hyphae and smaller spores (7–9 x 5–6 µm). Evidence is accumulating that *Coltricia* spp. in Guyana may form ectomycorrhizae with *Dicymbe* spp., which could explain the habitual fruiting of *C. fibrosa* on root-permeated humus of *Dicymbe* trunks.

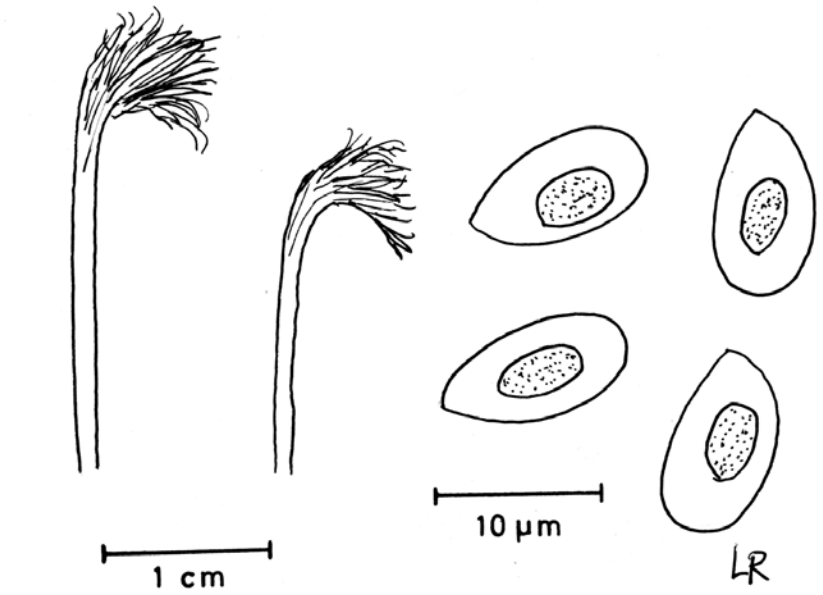

Fig. 3. *Coltricia fibrosa*, basidiocarps and basidiospores. From the holotype.

Key to the neotropical species of *Coltricia*

1. .Setae or setal hyphae present ***C. hamata*** (Romell) Ryvarden (see Ryvarden & Johansen 1980:109)
1. Setae or setal hyphae absent 2

2. Basidiospores longer than 6 µm 3
2. Basidiospores shorter than 6 µm 7

3. Basidiospores cylindrical, basidiomata on burnt wood or fire places ***C. focicola*** (Berk. & M.A. Curtis) Murrill (see Gilbertson & Ryvarden 1986:204)
3. Basidiospores ellipsoid, substrate different 4

4. Basidiospores 9–14 µm long, pores 1–3 mm wide ***C. montagnei*** (Fr.) Murrill (see Gilbertson & Ryvarden 1986:207)
4. Basidiospores 6–10 µm long, 2–5 pores per mm 5

5. Basidiomata usually 3–10 cm in diameter, upper surface shiny and multizonate, hyphae smooth ***C. cinnamomea*** (Pers.) Murrill (see Ryvarden & Johansen 1980:105)
5. Basidiomata less than 2 cm wide, pileus striate to almost hispid 6

6. Hyphae strongly pruinate, basidiospores 7–9 x 5–6 µm ***C. verrucata*** Aime et al. (see Aime et al. 2003:617)
6. Hyphae smooth, spores 10–11 µm in diameter ***C. fibrosa*** Aime & Ryvarden

7. Basidiospores globose, margin ciliate ***C. barbata*** Ryvarden & de Meijer (see Ryvarden & Meijer 2002:46)
7. Basidiospores ellipsoid, no cilia along the margin 8

8. Basidiospores 2.5–3 µm wide, pores 6–8 mm, context duplex ***C. fonsecoensis*** W.B. Cooke & Bonar (see Cooke & Bonar 1961:3)
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*** (Speg.) Rajchenb. & J.E. Wright (see Rajchenberg & Wright 1998:119)
9. Pores 2–4 per mm, on burnt ground in Venezuela ***C. pyrophila*** (Wakef.) Ryvarden (see Ryvarden & Johansen 1980:111)

Dichomitus grandisporus Aime & Ryvarden sp. nov. **Fig. 4, plate 2a**
Ad Dichomitus campestrem (Quel.) Domaniski & Orliz affine, sed sporae 20–27 x 7–10 µm (10–14 µm in D. campestris)

Typus. Guyana. Pakaraima Mountains: Upper Potaro River, 20 km east of Mt. Ayanganna, near confluence of Potaro River and Alukyadongbaru Creek, Paluway plot 2 in *Dicymbe corymbosa*-dominated forest, general area N 5° 16', W 59° 54', ~720 m elev. On canopy branches of tree-fall, 22 May 2001, *MC Aime 1565* (Holotype BRG, Isotype O).

Basidiomata annual, resupinate, effused, adnate, up to 3 mm thick. *Pore surface* mottled yellow 4B7–8 through 4A4–7 when fresh, pale straw-colored when old and dry, margin narrow, white when fresh becoming ochraceous. *Pores* angular, regularly hexagonal, 3–4 per mm, dissepiments thin, tubes rigid, up to 2 mm deep, subiculum thin, ochraceous, to about 1 mm thick. *Odor* fragrant, coconut and honeysuckle.

Hyphal system dimitic, generative hyphae with clamps, hyaline, thin- to thick-walled, richly branched in the subiculum 2–4 um wide; skeleto-binding hyphae present, sparingly branched, solid, hyaline 2–4 um wide, inamyloid in Melzer's reagent. *Cystidia* absent. *Basidia* clavate, 4-sterigmate, 30–45 x 10–14 µm, with

a basal clamp, only a few observed. *Basidiospores* oblong-ellipsoid to subcylindrical, hyaline, thick-walled, smooth, negative in Meltzer's reagent, 20–27 x 7–10 µm.
Habit, habitat, and distribution. Scattered on decaying hardwood branches from tree canopy of tropical rainforest; known only from the type locality.
Etymology. From the Latin, referring to the unusually large basidiospores.
Remarks. The extraordinarily large and thick-walled spores make this a distinct species.
For a key to Neotropical species of *Dichomitus*, see page 42.

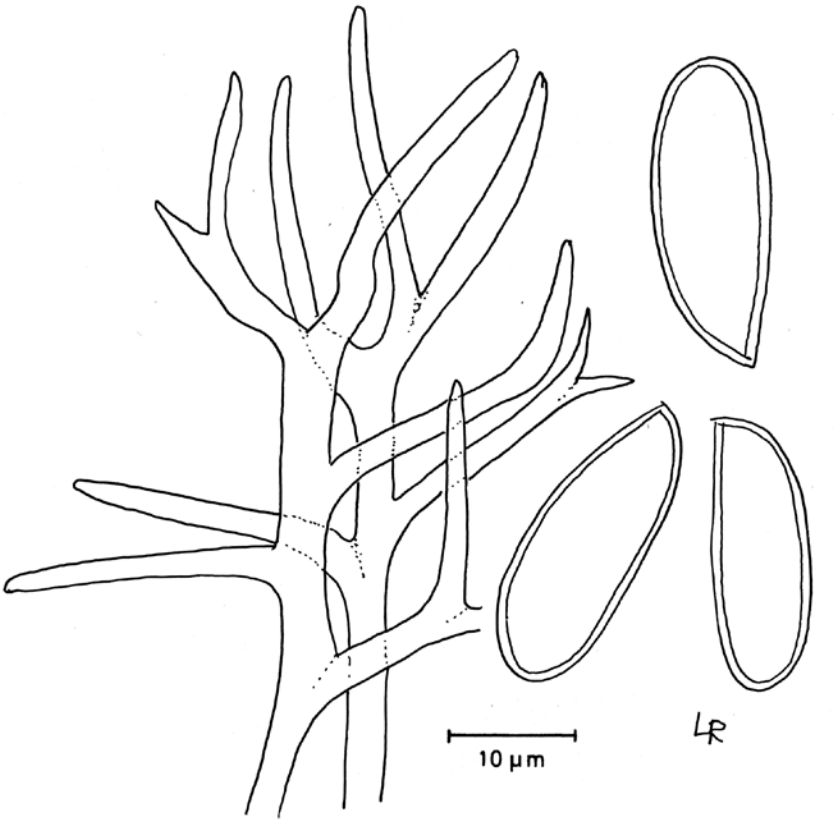

Fig. 4. *Dichomitus guyanensis,* binding hyphae and basidiospores. From the holotype.

Fomitopsis minuta Aime & Ryvarden **Fig. 5**

Fomitopsis cupreorosea (Berk.) Carranza & Gilbn. tangit, sed basidioma minutum et sporae cylindricae 4x1 µm (in F. cupreorosea ellipsoideae 5–7 x 2.5–3 µm).

Typus. Guyana. Pakaraima Mountains: Upper Potaro River, 20 km east of Mt. Ayanganna, near confluence of Potaro River and Alukyadongbaru Creek, Paluway plot 3 in *Dicymbe corymbosa*-dominated forest, general area N 5° 16', W 59° 54', ~ 720 m elev. Gregarious on decorticated hardwood log, 15 June 2002, *Aime 2018* (Holotype BRG, Isotype O).

Basidiomata annual, pendant, more or less circular, up to 10 mm high, 4–8 mm in diameter, pileus glabrous, smooth, azonate or with a few indistinct darker zones, pinkish brown 7E8. *Pore surface* pinkish (~8B3) at first becoming pale brown 7E8, pores round, 2–3 per, tubes concolorous with pore surface up to 5 mm deep. *Context* pale pinkish brown, 2 mm thick at the margin up to 7 mm thick from point of attachment to tubes.

Hyphal system trimitic, generative hyphae mostly thin and hyaline 2.5–4.0 µm wide, some up to 10 µm wide, these thick-walled and with a few scattered large clamps; skeletal hyphae straight to slightly flexuous, thick-walled with a slight reddish-brown wall and a wide lumen, 3.5–7.0 µm wide; binding hyphae present in the context, few and sparingly branched, solid, hyaline 2–4 µm wide. *Cystidia* not observed. *Basidia* clavate, 10–12 x 6–7 µm with four sterigmata. *Basidiospores* cylindrical, hyaline, thin-walled and inamyloid in Melzer's reagent, about 4 x 1 µm.

Habit, habitat, and distribution. In troops on decorticated hardwood logs in tropical rainforest; known only from the type locality.

Etymology. *Minut,* Latin, referring to the tiny basidiomata.

Remarks. The species belongs clearly to the group of *Fomitopsis* species with pinkish colors such as *F. cupreorosea* (Berk.) J. Carranza & Gilb. and *F. lilacinogilva* (Berk.) J.E. Wright & J.R. Deschamps both of which, however, have ellipsoid basidiospores and relatively large basidiomata.

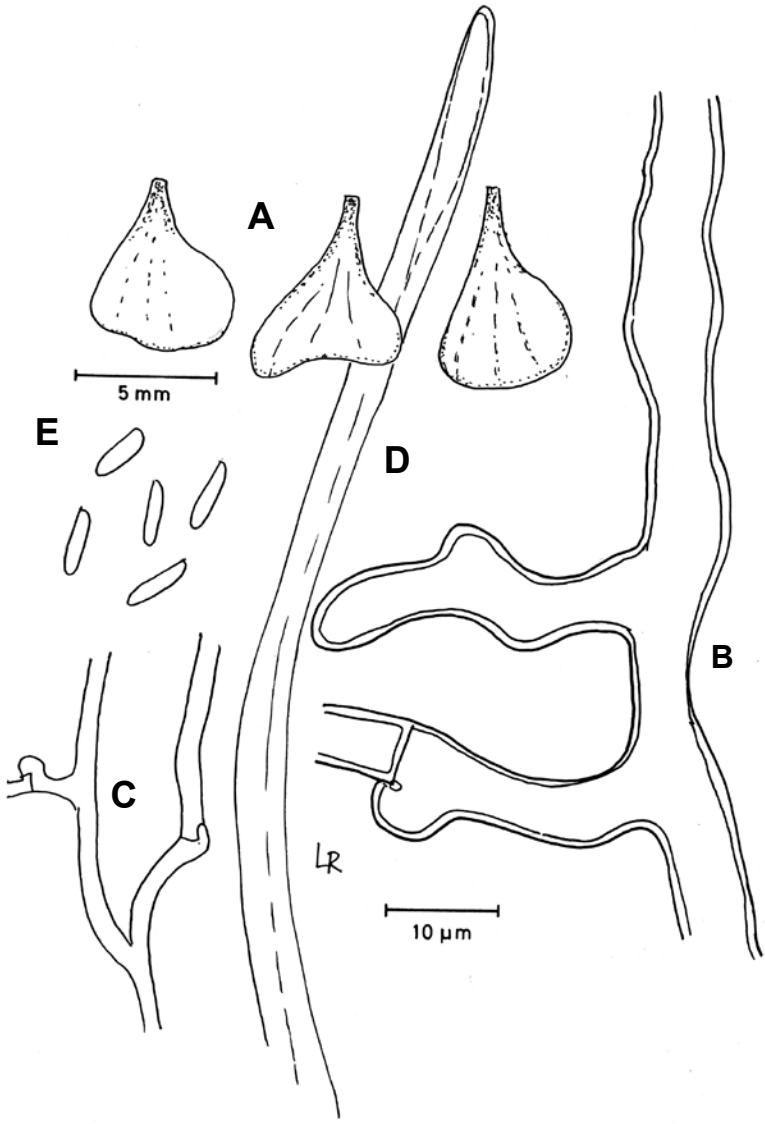

Fig. 5. *Fomitopsis minuta* A) basidiocarps, B) wide generative hyphae from context, C) narrow generative hyphae from the subhymenium, D) skeletal hypha, E) basidiospores. From the holotype.

Key to the neotropical species of *Fomitopsis* with pink or brown context

1. Basidiomata deep brown in all parts ***F. scalaris*** (Berk.) Ryvarden (see Ryvarden 1984:354).
1. Basidiomata with shades of pink, at least in the context 2

2. Basidiomata massive, woody, hard, upper surface pinkish grey to almost black with age and then radially cracked ***F. dochmia*** (Berk. & Broome) Ryvarden (see Ryvarden & Johansen1980:338).
2. Basidiomata thinner and easily broken, upper surface grayish pink to pinkish brown, velutinate or with veins, not radially cracked and without a crust 3

3. Upper surface velutinate soft, pale pink to ochraceous pink, pores 5–7 per mm ***F. feei*** (Fr.) Kreisel (see Gilbertson & Ryvarden 1986:273).
3. Upper surface warted, veined or fibrillose, pinkish brown, pores larger

4. Spores cylindrical, basidiomata minute, up to 10 mm in diameter ***F. minuta*** Aime & Ryvarden
4. Spores ellipsoid, basidiomata usually 2 to 10 cm in longest dimension 5

5. Pores 1–2 mm wide ***F. cupreorosea*** (Berk.) J. Carranza & Gilb. (see Carranza-Morse & Gilbertson 1986:476).
5. Pores 2–4 per mm ***F. lilacinogilva*** (Berk.) J.E. Wright & J.R. Deschamps (see Carranza-Morse & Gilbertson 1986:481).

Wrightoporia micropora Aime & Ryvarden sp. nov. **Plate 2d**
Fructificatio resupinata, pori cinnamomeus, 6–7 per mm, tubi pallide concolori, contextus cinnamomeus, systema hyphale dimiticum, hyphae generatoriae hyalinae, fibulatae, hyphae skeletales hyalinae, dextrinoideae, basidiosporae globosae, amyloideae, verrucosae, 3–4 μ*m diametro.*

Typus. Guyana. Pakaraima Mountains: Upper Potaro River, 20 km east of Mt. Ayanganna, near confluence of Potaro River and Alukyadongbaru Creek, Paluway plot 3 in *Dicymbe corymbosa*-dominated forest, general area N 5° 16', W 59° 54', ~720 m elev. On underside of hardwood log, 18 May 2001, *Aime 1521* (BRG, Isotype O).

Basidiomata annual, resupinate, effused, up to 8 cm wide and 3 mm thick, strongly attached, soft when fresh, becoming contracted and partly curled when dry. *Pore surface* pale brown 4B3 bruising darker brown 5E8 when fresh, pores round, entire, 6–7 per mm, tube layer pale cinnamon brown, dense and

hard, up to 1 mm thick, subiculum dense, pale cinnamon 4D8, up to 2 mm thick.

Hyphal system dimitic, generative hyphae hyaline, thin-walled, with clamps, 3–4 µm wide; skeletal hyphae thick-walled to solid, hyaline, distinctly dextrinoid, 4–5 µm wide. *Cystidia* not observed. *Basidia* doliiformis, 10–12 x 6–8 µm with 4 sterigmata. *Basidiospores* subglobose, hyaline, finely asperate, thin-walled, amyloid, 3–4 x 3µm.

Habit, habitat, and distribution. On dead hardwood log from tree fall in *Dicymbe*-dominated forest. Known only from the type locality.

Etymology. From the Latin, referring to the extremely small pores.

Remarks. The species is characterized by the nearly invisible pores, the pale cinnamon tubes, the subglobose amyloid spores, and dextrinoid skeletal hyphae. *Wrightoporia roseocontexta* Ryvarden & Iturr., known from Venezuela, is a similar species that differs in possessing a pink, soft and cottony context and subiculum, and an olivaceous pore surface.

Key to the neotropical species of *Wrightoporia*

1. Basidiomata perennial, resupinate to effused reflexed, woody hard, pore surface grey to pale brown ***W. tropicalis*** (Cooke) Ryvarden (see Ryvarden & Johansen1980:619).
1. Basidiocarp annual to biennial, resupinate to distinctly pileate, soft to fragile, pore surface pinkish to ochraceous or wood colored 2

2. Basidiomata resupinate 3
2. Basidiomata pileate 8

3. Pore surface pinkish to lilac ***W. bracei*** (Murrill) I. Lindblad & Ryvarden (see Murrill 1921:91).
3. Pore surface whitish, ochraceous, or pale straw colored 4

4. Spores 5–6 µm in diameter ***W. lenta*** (Overh. & J. Lowe) Pouzar (see Gilbertson & Ryvarden 1986:805).
4. Spores 3.5–4.5 µm in longest dimension 5

5. Pores 1–3 per mm, irregular, basidiocarp soft, cottony, easy to separate from the substrate ***W. avellanea*** (Bres.) Pouzar (see Gilbertson & Ryvarden 1986:803).
5. Pores tiny 6–8 per mm, basidiocarp hard to tough, adnate 6

6. Skeletal hyphae dextrinoid ***W. micropora*** Aime & Ryvarden
6. Skeletal hyphae non-dextrinoid 7

7. Generative hyphae with simple septa, subiculum white ***W. efibulata*** I. Lindblad & Ryvarden (see Lindblad & Ryvarden 1999:355)
7. Generative hyphae with clamps, subiculum pink ***W. roseocontexta*** Ryvarden & Iturr. (see Ryvarden & Iturriaga 2003:1076).

8. Upper surface chestnut colored ***W. brunneo-ochracea*** A. David & Rajchenb. (see David & Rajchenberg 1985:319).
8. Upper surface wood colored or ochraceous 9

9. Pores 1–3 per mm, spores subcylindrical to oblong ellipsoid ***W. porilacerata*** Log.-Leite, A.L. Gerber & Ryvarden (see Loguercio-Leite et al. 1998:252).
9. Pores 3–4 per mm, spores subglobose ***W. cremea*** Ryvarden (see Ryvarden 1987:540).

Updates to the checklist of polyporoid taxa from Guyana

Aime, Henkel and Ryvarden (2003) reported 73 polyporoid taxa from Guyana. In addition to the six new species described in this paper, we report an additional 12 new records for the country, bringing the total of known polyporoid species to 91. New records are: ***Antrodiella dentipora*** Ryvarden & Iturr. (on standing decorticated snag, 1 Jan 2004, *MC Aime 2408*, BRG and O; on decorticated log in *Dicymbe* forest, 7 Jan 2004, *MC Aime 2450*, BRG and O)—these collections constitute the second known record of this taxon; ***Antrodiella luteocontexta*** Ryvarden & de Meijer (decorticated log, 10 Jan 2004, *MC Aime 2472*, BRG and O)—this is the second know collection of this taxon; ***Antrodiella versicutis*** (Berk. & M.A. Curtis) Gilb. & Ryvarden (in *Dicymbe*-dominated forest, 15 June 2002, *MC Aime 2012*, BRG and O); ***Ceriporiopsis flavilutea*** (Murrill) Ryvarden (on decorticated log, *Dicymbe*-dominated forest, 15 June 2002, *MC Aime 2011*, BRG and O); ***Coltricia cinnamomea*** (Jacq.) Murril (on hardwood log, 23 May 2001, *MC Aime 1601*, BRG and O); ***Dichomitus anoectoporus*** (Berk. & M.A. Curtis) Ryvarden (on stick in litter of mixed forest, 14 June 2002, *MC Aime 1993*, BRG and O); ***Ganoderma citriporum*** Ryvarden & Iturr. (on decorticated log, 22 May 2001, *MC Aime 1573*, BRG and O); ***Gloeoporus dichrous*** (Fr.) Bres. (on decorticated stick in litter of *Dicymbe*-dominated forest, 15 June 2002, *MC Aime 2016*, BRG and O); ***Junghuhnia minuta*** I. Lindblad & Ryvarden (10 June 2002, *MC Aime 1941*, BRG and O)—this constitutes the second known collection of this taxon, the Guyanese material differing from the type only by the pronounced yellow 4A8 pore surface (Fig. 7e); ***Nigrofomes melanoporus***

(Mont.) Murrill (in mixed rainforest, 1 July 2003, *MC Aime 2286*, BRG and O); ***Oligoporus caesius*** (Fr.) Gilb. & Ryvarden (*Dicymbe* forest, 2 Jan 2004, *MC Aime 2413*, BRG and O); and ***Polyporus tenuiculus*** (P. Beauv.) Fr. (on standing snag, 9 July 2003, *MC Aime 2358*, BRG and O).

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We are grateful to Kurt Hjortstam (Alingsås, Sweden) for kindly reviewing the Latin descriptions and diagnoses. Mimi Chin, Christopher Andrew, Francino Edmond, and Luciano Edmond provided expert field assistance in Guyana. MCA would like to thank WKS and DE Aime for partial support during 2002 and 2004 field seasons. This paper is No. 124 in the Smithsonian Institution's Biological Diversity of the Guianas Program publication series.

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Studies in neotropical polypores 23. New and interesting wood-inhabiting fungi from Belize

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Abstract
192 wood-inhabiting species are reported from Belize. *Atraporiella neotropica* Ryvarden is described as a new genus and a new species. The following seven species are described as new: *Anomoporia neotropica* Ryvarden, *Coltricia cylindrospora* Ryvarden, *Dichomitus cylindrosporus* Ryvarden, *Dichomitus perennis* Ryvarden, *Junghuhnia chlamydospora* Ryvarden, *Oxyporus lacerus* Ryvarden and *Rubroporus aurantiaca* Ryvarden. *Dichomitus mexicana* (Ryvarden) Ryvarden and *Coriolopsis hostmannii* (Berk.) Ryvarden are proposed as a new combinations. Keys to neotropical *Dichomitus* species and *Rubroporus* are provided.
Key words: Belize, polypores.

Introduction

Belize (formerly British Honduras) has not previously been properly investigated with regard to wood-inhabiting fungi. Murrill himself never collected in the country, but reported (1908, 1910) some few species of polypores based on collections made in passing by different collectors. The localities for these species are in most cases given as Belize only. The Mexican part of Yucatan peninsula, situated north of Belize has however, been explored mycologically by Guzman (1983) and Chio and Guzman (1982) although their main emphasis was on agarics. The few polypores reported in these publications, are all common and widespread species.

This situation changed when Dr. D. Jean Lodge AND Dr. Timothy Baroni were successful in obtaining grants from the National Science Foundation (see Acknowledgements for details) to explore the country mycologically. While their project was primarily aimed at boletes and agarics, money was also allocated for

collecting of polypores, and thus I was kindly invited to help with that group of fungi. The results from two collecting expeditions in 2001 and 2002 are reported in the following, which also acts as a preliminary checklist for polypores in the country. The few species reported by Murrill (op. cit.) are included, indicated by an asterisk if not recorded by me.
Further, during a visit in the Kew Herbarium some few other collections from Belize were found and they are included here with a full citation of the collecting sites and collectors.
All collections made in 2001 and 2002 are deposited in BRH and CFMR besides in the Oslo Herbarium. If not indicated specifically, the hosts are dead logs of standing trunks of unknown hardwoods. To save space and repetitive information, the collection localities are given as numbers with reference to the following list:

Collecting sites in Belize
1. Caves Branch, Ian Anderson's Cave's Branch Adventure Camp, Cayo District, lat. 17 8.52 N, long. 88 41.0 W.
2. Blue Hole National Park, Hummingbird Loop Trail and St. Herman's Cave trail, Cayo District, lat. 17 9.5 N, 88. 41.0 W and lat. 17 8.4 N, 88 42.0 W, respectively.
3. Cockscomb Basin Wildlife Sanctuary, Maya Centre, Stan Creek District, lat. 17 46.8 N, long. 88 27.6 W.
4. Jaguar Creek, Cave's Branch, Cayo District, lat. 17 9.2 N, long. 88 42.4 W.
5. Five Sisters Lodge, Mountain Pine Ridge Forest Reserve, Upper nature trail, Cayo District, 358-387 m asl, 17 2.7 N, 88 59.1 W.
6. Douglas da Silva Forestry Station, Cayo District, 270 m asl, 17 N, 88 50.7 W.
7. La Milpa Field Station, Río Bravo Conservation Area, Orange Walk District, 100 m asl, lat. 17 50.5 N, long. 89 1.2 W.
8. Mecal River, Guacamayo bridge, Mountain Pine Ridge, Cayo District, 594 m asl, lat. 16 53.3.

List of species

Heterobasidiomycetes

Tremellaceae

Protomerulius dimidiatum (David) Ryvarden, 5, 8.
P. subreflexus (Lloyd) Ryvarden, 7.
Tremellostereum dichroum (Lloyd) Ryvarden, 5, 6, 8.

Homobasidiomycetes

Corticiaceae
Aleurodiscus disciformis on *Quercus* sp., 7.
Asterostroma cervicolor (Berk. & M. A. Curtis) Massee ,1, 5.
Crustoderma dryinum (Berk. & M. A. Curtis) Parmasto, 7.
Deflexula nivea (Pat.) Corner, 4.
Grammothele fuligo (Berk. & Broome) Ryvarden, 1, 5, 7.
G. subargentea (Speg.) Rajchenb., 1,5.
Hyphodermella corrugata (Fr.) J. Erikss. & Ryvarden, 4.
Hyphodontia subglobosa Sheng H. Wu 1, 5.
Mycoacia aurea (Fr.) Eriks. & Ryvarden, 8.
Mycorrhaphium adustum (Schw.) Mass-Geest., 5.
Phanerochaete radicata (Hennings) Nakasone, Bergmann & Burdsall, 4.
Phlebia tremellosa (Fr.) Nakasone & Burds., 2.
Porogramme albocincta (Massee) J. Lowe, 5.
Porostereum papyrinum (Mont.) Hjortst. & Ryvarden, 5.
P.vibrans (Berk. & W. A. Curtis) Ryvarden, 5.
Scytinostroma duriusculum (Berk. & Br.) Donk, 4.
Steccherinum reniforme (Berk. & M.A. Curtis) Banker 7, 8.
Trechispora brasiliensis (Corner) K.- H. Larss. 2, 7.
T. nivea (Pers.) K.-H. Larss., 3.
T. regularis (Murrill) Liberta, 6.
T. thelephora (Lév.) Ryvarden, 1, 2, 4, 5, 7.
This species was reported from Belize by Cifuentes et al. (2005) as *Hydnodon thelephorus* (Lév) Banker. However, DNA sequencing of specimens from Costa Rica has shown that it belongs in *Trechispora*, and thus, *Hydnondon* Banker 1913 is treated as a taxonomic synonym of *Trechispora* P. Karsten 1890.

Ganodermataceae
******Amauroderma camerarium* **(**Berk**.)**
Amauroderma dubiopansum (Lloyd) Dennis, 1, 5.
Ganoderma amazonense Weir, 2.
G. australe (Fr.) Pat., 1, 3, 5.
G. coffeatum (Berk.) Furtado., 4, 5.
G. multiplicatum (Mont.) Pat. 8.
* *G. oerstedtii* (Fr.) Ryvarden.
G. resinaceum Boud., 7.
G. stipitatum (Murrill) Murrill, 1, 2.
G. zonatum Murrill, 1, 5.

Gomphaceae
Beenakia informis (Rick) Maas Geesteranus 5.

Hericiaceae
Auriscalpium villipes (Lloyd) Maas Geest., 2.
Gloeodontia discolor (Berk. & M.A. Curtis) Boidin, 3, 8.
Steccherícium seriatum (Lloyd) Maas Geest., 7, 8.
Wrightoporia avellanea (Bres.) Pouzar, 7.
W. bracei (Murrill) Lindblad & Ryvarden, 7.
W. tropicalis (Cooke) Ryvarden, 7, 8.

Hymenochaetaceae
Aurificaria luteoumbrina (Romell) D.A. Reid, 1, 5, 7 and 8.
Coltricia cinnamomea (Pers.) Murrill, 4.
Coltricia cylindrospora Ryvarden nova sp **Fig. 1, plate 3**
Ad *C. cinnamomea* (Pers.) Murrill, sed sporae cylindricae, 5-7 x 2.8-3 µm (elipsoideae, 6.5-8 x 5-6 µm in *C. cinnamomea*).
Holotype: Belize, Stan Creek District, Cockscomb Basin Wildlife Sanctuary, 29 th. October 2002, D.J. Lodge & Leif Ryvarden, Ryvarden 45283, on the ground below *Cocoloba belizensis*, O, isotype in BRH.
Basidiocarps annual, centrally stipitate, pileus circular, flat to slightly infundibuliform, up to 10 cm in diameter and 5 mm thick in centre, soft when fresh, fragile when dry, margin entire, deflexed when dry; pileus surface with scattered forked hairs, up to 5 mm long, slightly erect when fresh given the surface a soft feeling, flattened and adpressed when dry giving the pileus a radially lined surface, evenly brown with darker lines, stipe up to 6 cm long and 5 mm in diameter, cylindrical, smooth with adpressed dark bundles of hairs, homogenous, pore surface whitish when fresh due to expanding young and thin-walled hyphae, becoming darker when touched, pores angular 1-2 per mm, tubes to 2 mm deep, pale brown and fragile, context homogenous, dark cinnamon, fibrous and up to 1 mm thick.
Hyphal system monomitic; generative hyphae with simple septa, at first thin-walled and hyaline (best seen in the subhymenium and the pore mouths), later more thick-walled and golden to light rusty brown with frequent septation, branching at right or wide angles, in the hymenium 3-6 µm in diam, in the context of pileus and stipe up to 12 µm in diam
Basidia with an elongated narrow stipe like stalk, up to 40 µm long, apical part swollen to 10 µm in diameter and with 4 sterigmata, 25-45 x 7-10 µm, simple-septate at the base.
Setae or other sterile hymenial elements absent.

Basidiospores cylindrical, smooth, thin-walled, hyaline, 5-7 x 2.8-3.2 μm.
Substrata. On the ground along a path below a *Cocoloba belizensis*.
Distribution. Known only from the holotype.
Remarks. The species is rather characteristic by having peculiar stalked basidia of a type not previously not seen in the genus and by its cylindrical, hyaline basidiospores.
Coccoloba belizensis belongs in the Polygonaceae and is ectomycorrhizal (D. Jean Lodge, pers. comm). The host is a tree with ectomycorrhizas, and since there are species of the genus that have this life strategy (Gilbertson & Ryvarden 1985-86), it may be that the new species also share this characteristic.
The deviating basidia made desirable to verify its generic status and thus it was sequenced and shown to be a typical *Coltricia* species. See also plate 3.

Coltricia focicola (Berk. & M. A. Curtis) Murrill, Augustine, 27. October, 1976, M. Ivory (K).
Coltricia montagnei (Fr.) Murrill 5.
Coltriciella dependens (Berk. & M. A. Curtis) Murrill, Silver Creek, M. Ivory, 25. Oct. 1976 (K).
Coltriciella oblectabilis (Lloyd) Ryvarden, 8.
Hymenochaete resupinata (Sw.:Fr.) Ryvarden. 1, 5.
Inonotus pseudoglomeratus Ryvarden, 4.
I. pusillus Murrill, 1.
Phellinus chryseus (Lév.) Ryvarden, 6.
P. contiguus (Fr.) Pat., 6.
P. dentonsus (Fr.) Ryvarden, 5.
P. fastuosus (Lév.) Ryvarden, 3, 4, 5, 7, 8.
P. gilvus (Schw.) Pat., 7.
P. maxonii (Murrill) D.A. Reid, 1.
P. merrillii (Murr.) Ryvarden, 2, 7.
P. rimosus (Berk.) Ryvarden, 4.
P. undulatus (Murrill) Ryvarden, 2.
Phylloporia chrysita (Berk.) Ryvarden, 1, 2, 3, 5.
P. pectinata (Klotzsch) Ryvarden, 1 & 7.
P. spathulata (Hooker) Ryvarden, 7.
Stiptochaete damaecornis (Link) Ryvarden 1,3,5.

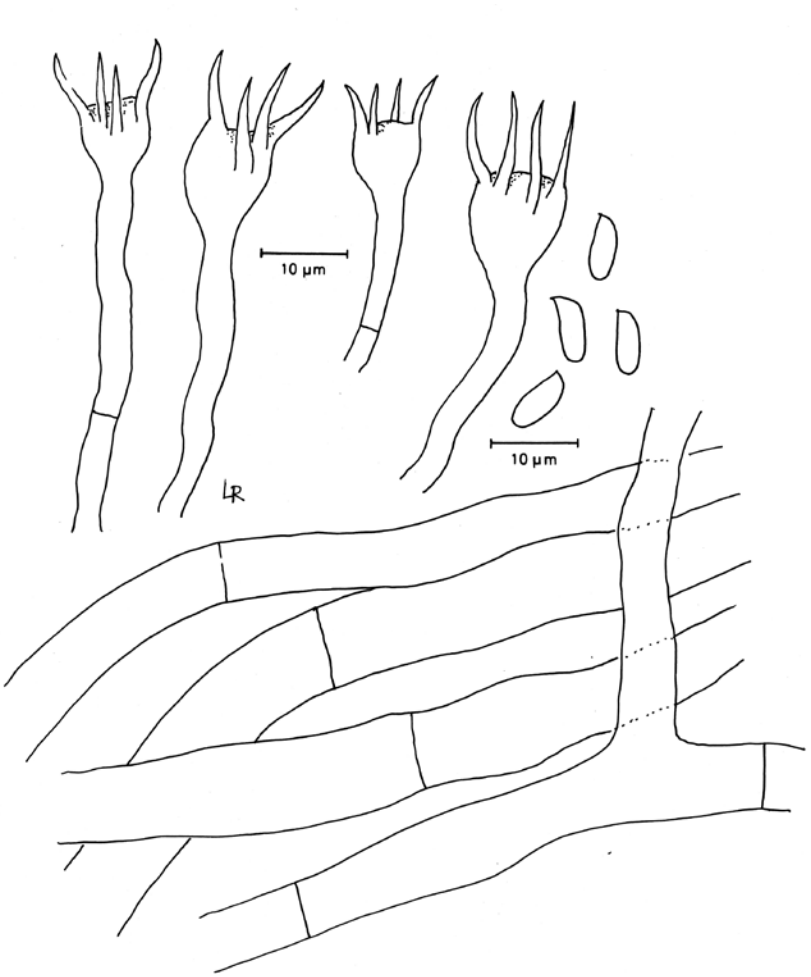

Fig. 1, *Coltricia cylindrospora*, basidia, basidiospores and hyphae from the context. From the holotype.

Polyporaceae

Anomoporia neotropica Ryvarden nova sp.

Ad *A. myceliosa* sed pori minuta, 5-8 per mm et sporae sublobosae (2-4 pori per mm in *A. myceliosa* et sporae ellipsoideae).

Holotype: Belize: Orange Walk District, La Milpa Station, 24. October 2002, on dead deciduous fallen tree, Ryvarden 45135 (O), isotype in BRH.

Basidiocarps resupinate, annual, small to widely effused, up to 1 mm thick, easily separable, soft and brittle, margin usually wide and cottony, first white seemingly being pale brown with age, no rhizomorphs; pore surface white, pores angular, 5-8 per mm, with thin dissepiments; subiculum pale brown; tube layer white, up to 1 mm thick.

Hyphal system monomitic; generative hyphae with clamps, in the subiculum and margin smooth, thin -walled, 2.5-5 µm wide, sparingly branched.

Cystidia and other sterile hymenial elements absent.

Basidia clavate, 4-sterigmate, 17-22 x 5.5-7 µm, with a basal clamp.

Basidiospores broadly ellipsoid to subglobose, thin-walled, smooth, hyaline and amyloid in Melzer's reagent, 3.5-4.5 x 3-3.5 µm.

Substrata. On a rotten log of hard wood tree.

Distribution. Known only from the type locality.

Remarks. *A. neotropica* is undoubtedly related to *A. myceliosa* but easily separated by its very small pores, almost invisible to the naked eye. The type has a rather wide margin and partly elongated pores on sloping parts of the basidiocarp. In parts the margin is smooth and brown and with an extremely thin agglutinated cuticle.

Antrodiella duracina (Pat.) I. Lindblad & Ryvarden, 5.
**A. hydrophila* (Berk.) Ryvarden, 2.
**A. liebmannii* (Fr.) Ryvarden.
A. reflexa Nunez & Ryvarden, 3, 5.
A. semisupina (Berk. & W. A. Curtis) Ryvarden, 7.
Abortiporus fractipes (Berk. & M.A. Curtis) Gilb. & Ryvarden, 4.

Atraporiella neotropica Ryvarden nova genus et nova species.

Ad *Nigroporus* Murrill, sed systema hypharum monomiticum (dimiticum in *Nigroporus*) et basidiocarpus resupinatus (sessilis in *Nigroporus*).

Holotype: Belize: Cayo district, Douglas Silva Farm Station, 20. November 2001, on dicotoledonous wood log, Ryvarden 44447 (O), isotype in BRH..

Basidiocarps resupinate, annual, small, up to 2 x 3 cm in largest specimen, up to 10 mm thick, easily separable, soft and slightly waxy when fresh, brittle and contracting when drying and then disc like with raised loosened margin, resin-

ous brittle when dry, pore surface whitish when fresh and actively growing, very rapidly stained dark brown to black when touched, pale ochraceous when dry except for stained parts, pores angular, 5-6 per mm, with thin dissepiments; tubes dark brown to black with an agglutinated or fused structure, up to 10 mm deep, subiculum thin to almost invisible, pale brown and cottony.
Hyphal system monomitic; generative hyphae with clamps, pale brown, thin -walled, 3-6 µm wide, richly branched.
Cystidia and other sterile hymenial elements absent.
Basidia clavate, 4-sterigmate, 12-18 x 5.-6 µm, with a basal clamp.
Basidiospores ellipsoid, thin-walled, smooth, hyaline and without reaction in Melzer's reagent, 3-3.5 x 1.2-1.4 µm.
Substrata. On a rotten log of dicotoledonous tree.
Distribution. Known only from the type locality.
Remarks. The white pore surface becoming brown to black when touched contrasting the deep brown to black and soft tubes should make this species distinct in the field. *Nigroporus* is characterized by being deep blackish violet (reflected in the epithet of the type species *N. vinosus*) besides having a distinct dimitic hyphal system. So far all species known or described in the genus have sessile to effused reflexed basidiocarps. Thus, the two genera should be easily separated in the field as well.

Bjerkandera adusta (Fr.) P. Karst., 3.
Coriolopsis byrsina (Mont.) Ryvarden, 1, 7.
**C. cirrifer* (Berk. & M.A. Curtis) Murrill, 4.
C. hostmannii (Berk.) Ryvarden, comb. nov., 7.
Basionym: *Polyporus hostmannii* Berk Hooker London J. Botany 1:148, 1842 (K!).
This is an older name for the taxon which usually has been called *Coriolopsis badius* (Berk.)Murrill, based on *Tramtes badia* Berk. J. Bot., Lond. 1: 151, 1842, which however is a taxonomic synonym for *Coriolopsis asper* (Jungh.) Teng., see Ryvarden 1981.
C. polyzona (Pers.) Ryvarden, all localities.
C. rigida (Berk.) Murrill, 2.
Ceriporia micropora Lindbl. & Ryvarden, 4.
C. xylostromatoides (Berk.) Ryvarden, 7.
Ceriporiopsis flavilutea (Murr.) Ryvarden, 1, 2,4, 5 & 7.
Daedalea quercina L.: Fr., 7.
Datronia caperata (Berk.) Ryvarden, All localities.
D. stereoides (Fr.) Ryvarden, 7.
Dichomitus cavernulosus (Berk.) Masuka & Ryvarden, 7.

Dichomitus cylindrosporus Ryvarden nov. sp. Fig. 2.
Ad *Dichomitus anoectoporus* (Berk. & M. A. Curtis) Ryvarden, sed sporae cylindricae, 8-10 x 2.5-3 µm (ellipsoideae et 15-18 x 6-8 µm in *D. anoectoporus*).
Holotype: Belize, Stan Creek District. Corkscomb Basin, Wildlife Sanctuary, 16 Nov. 2001, on hardwood log, Ryvarden 44248 (O) Isotype in BRH.
Basidiocarps annual, resupinate, effused, separable, up to 2 mm thick, margin narrow, pale brown to ochraceous, pore surface white when fresh becoming pale brown when dry, pores angular 3-4 per mm, dissepiments thin, tubes rigid and brittle, up to 1 mm deep, pale ochraceous, contrasting the pore surface, subiculum thin, pale pinkish brown to isabelline, up to 1 mm thick.
Hyphal system dimitic; generative hyphae with clamps, hyaline , thin- to thick-walled, richly branched in the subiculum 2-4 µm wide, arboriform skeletal hyphae present, sparingly branched, solid, hyaline 2-4 µm wide, dextrinoid in Melzer's reagent.
Cystidia absent.
Basidia clavate, 4-sterigmata, 20-25 x 5-7 µm, with a basal clamp.
Basidiospores cylindrical, straight, hyaline, smooth, negative in Melzer's reagent, 8-10 x 2.5-3 µm.
Substrate and distribution. Known only from a dicotoledonous log at the type locality.
Remarks. The narrow cylindrical basidiospores distinguish it from other species in the genus, which in general has much wider and larger spores (for a key see below).

Dichomitus perennis Ryvarden. nov. sp. **Fig 2**
Ad *Dichomitus cavernulosus* (Berk.) Masuka & Ryvarden, sed perennis et ad 1 cm crasse (ad 2 mm crasse in *Dichomitus cavernulosus*).
Holotype: Belize: Orange Walk District, La Milpa Field Station, Río Bravo Conservation Area, 24 October 2002, on dead dicotoledonous log, Ryvarden 45088, O, isotype in BRH.
Basidiocarps resupinate, perennial, adnate, hard, up to 12 mm thick; margin narrow, ochraceous, pore surface pale grey to ochraceous, pores angular to round, 2-3 per mm, up to 12 mm deep, cork coloured and distinctly stratified with up to 4 distinct zones (seasonal growth?), context almost absent, only present as a narrow cork-coloured line in depressions in the substrate.
Hyphal system dimitic; generative hyphae with clamps, thin-walled and 2-4 µm wide; skeletal hyphae common, thick-walled to solid, unbranched and flexuous, or with an occasional apical dichotomous branching, 2-5 µm wide, strongly dextrinoid.
Basidia clavate, 4 sterigmata, 25-30 x 5-8 um, with a basal clamp.

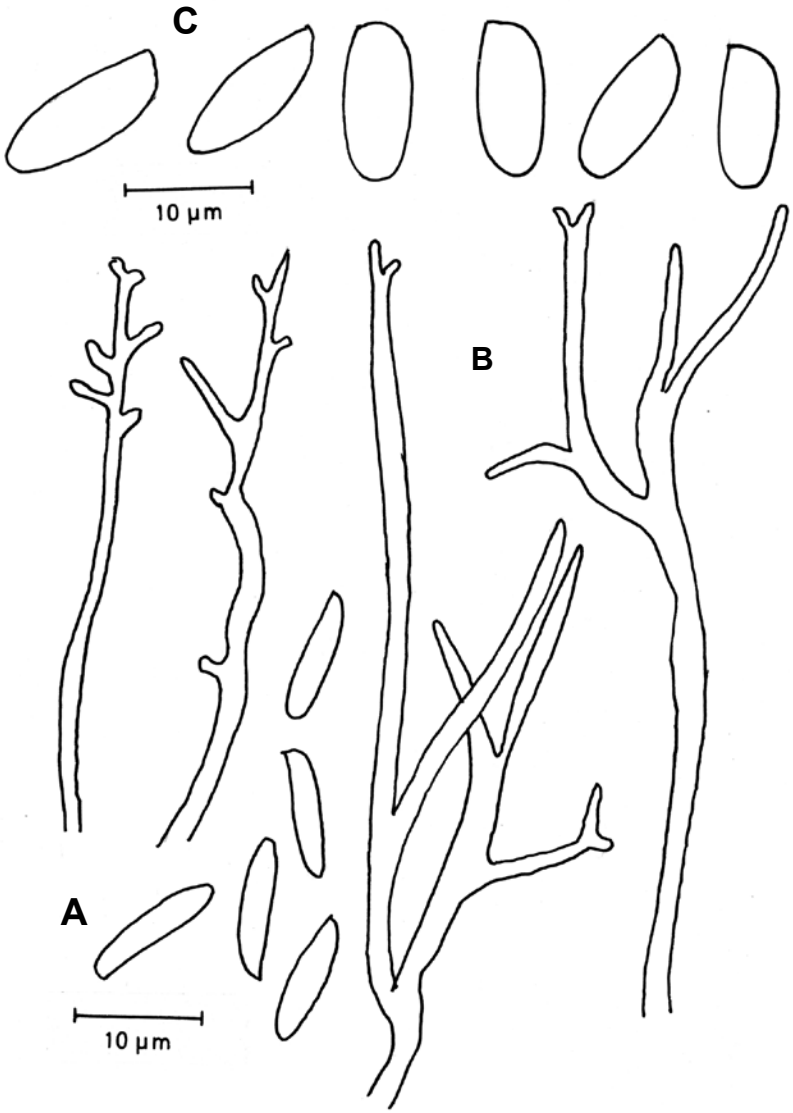

Fig. 2. *Dichomitus cylindrosporus* A) Basidiospores, B) Binding hyphae, *D. perennis* C) Basidiosporus. From the holotypes.

Cystidia and other sterile hymenial elements absent.
Basidiospores cylindrical, (10)12-16 x 5-7 µm.
Substrata and distribution. Known only from the type locality on a large fallen dicotoledonous log.
Remarks. The large massive basidiocarp should make this species easy to recognize in the field. While *D. anoectoporus* has a whiter colour whereas the basidiocarps of this new species are cork coloured to ochraceous with the pore surface becoming greyish to ochraceous when dry and old.

Key to neotropical species of *Dichomitus*

1. Skeletal hyphae non-dextrinoid 2
1. Skeletal hyphae dextrinoid.....3

2. Basidiospores 20-27 µm long **D. grandisporus** ..... (see page 24)
2. Basidiospores 15-18 µm long **D. anoectoporus**

3. Pores 1-3 mm wide with a variable number of hyphal pegs..... 4
3. Pores 2-4 per mm and without hyphal pegs 5

4. Basidiospores 11-17 x 3-4.5 µm, hyphal pegs nuerous ..... **D. setulosus**
4. Basidiospores 20-26 x 6-9 µm, hyphal pegs few .....**D. mexicanus**

5. Basidiospores cylindrical, 8-10 x 2.5-3 µm ..... **D. cylindrosporus**
5. Basidiospores ellipsoid to subcylindrical, longer than 10 µm..... 6

6. Basidiocarp perennial up to 1.3 cm thick, cork coloured ..... **D. perennis**
6. Basidiocarps annual, up to 3 mm thick, white to pale straw coloured .....**D. cavernulosus**

Dichomitus mexicanus (Ryvarden) Ryvarden comb nov.
Basionym: *Megasporoporia mexicana* Ryvarden, Mycotaxon 16:178, 1982.
Diplomitoporus crustulinus (Bres.) Domański, on dead *Pinus* sp. 8.
Earliella scabrosa (Pers.) Gilbn. & Ryvarden, All localities.
Echinochaete brachypora (Mont.) Ryvarden, 1, 5.
Fomitopsis cajanderi (Karst.) Kotl. & Pouzar, on dead *Pinus* sp. 5.
F. cupreorosea (Berk.) J. Carranza & Gilb. 1,2 & 7.
F. dochmia (Berk. & Broome) Ryvarden, 2, 7.
F. feei (Fr.) Kreisel, 7.
F. palustris (Berk. & Curt.) Gilbn. & Ryvarden, 1, 5.

F. nivosa (Berk.) Gilb. & Ryvarden, 6.
Flabellophora parva Corner, 1, 1, 2, 2, 2.
Flavodon flavus (Klotzsch) Ryvarden, 2, 7.
Fomes fasciatus (Fr.) Cooke, 3. 4. 5, 7.
Gloeoporus thelephoroides (Hook.) G. Cunn., 2, 8.
Hapalopilus albocitrinus (Petch) Ryvarden, 7.
Hexagonia glaber (P. Beauv:Fr.) Ryvarden, 7.
H. hydnoides (Fr.) Fidalgo, 7.
H variegata Berk., 7.
Hydnopolyporus fimbriatus (Fr.) D.A. Reid, 3, 4.

Junghuhnia chlamydospora Ryvarden nov. sp. **Fig. 3**
Ad *J. carneola* (Bres.) Rachjenberg, sed dextrinoideae chlamydosporae praesentia (absentia in *J. carneola*).
Holotype: Belize, Stan Creek Distr. Cockscomb Basin Wildlife Sanctuary, 16 November, 2001, on dead standing dicotoledonous tree. Ryvarden 44241, O, isotype in BRH.
Basidiocarp annual, resupinate, decurrent on the substrate, adnate up to 2 mm thick, soft when fresh, resinous hard when dry, pore surface ochraceous to discoloured when fresh, becoming blackish in parts when dry, margin narrow, lighter than the pore surface, up to 2 mm wide, pores angular, and mostly split due to the almost vertical growth, thin- walled and 2-3 per mm, tubes more or less concolorous with the pore surface, up to 3 mm deep, context thin and ochraceous.
Hyphal system dimitic, generative hyphae thin-walled and with clamps, 2.5-4 µm wide, skeletal hyphae dominating in the basidiocarp, thick-walled to solid, apically finely encrusted, most easily seen in the dissepiments.
Basidiospores cylindrical, hyaline, thin-walled and negative in Melzer's reagent, 4-4.5 x 1.5-2 µm.
Chlamydospores abundantly present, ellipsoid to navicular, often with a tapering end, thick-walled, yellowish brown, strongly dextrinoid, 8-12 x 4-6 µm.
Basidia clavate, 12-14 x 3-5 µm.
Substrata. On dicotoledonous wood.
Distribution. Known only from the type locality.
Remarks. The abundant dextrinoid chlamydospores make this a characteristic species. It shares the finely encrusted skeletal hyphae with *J. carneola*, which however has a yellow colour changing to red or pale brown when touched in fresh condition. The blackish pore surface and ochraceous margin should also make the species distinct in the field.

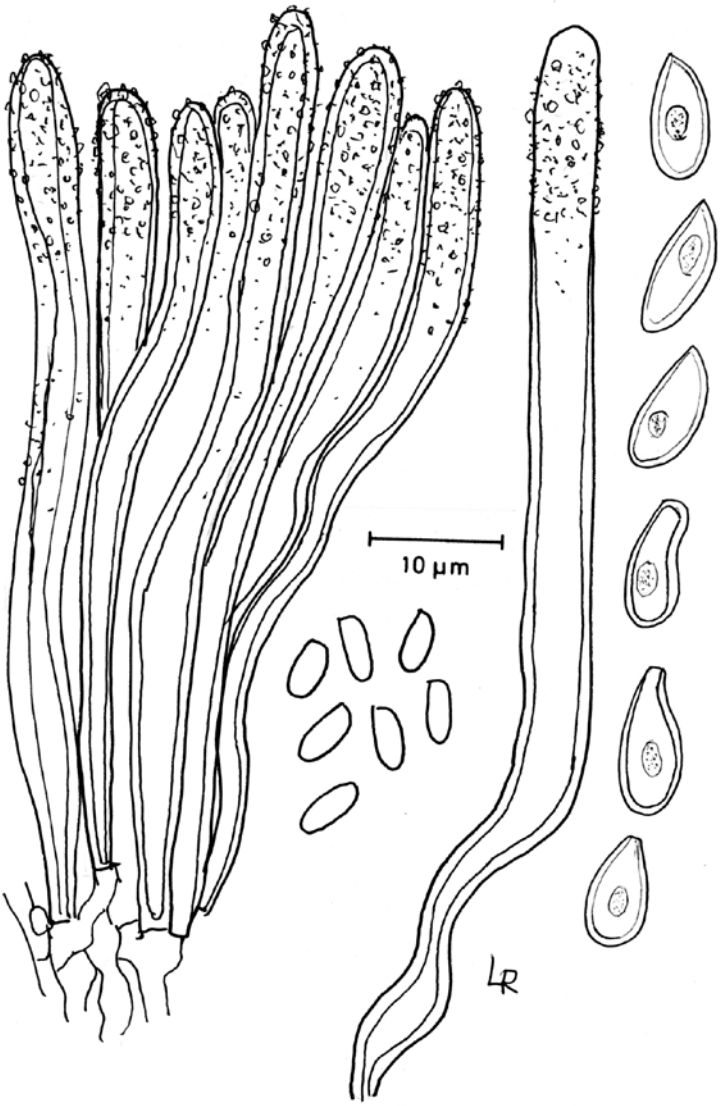

Fig. 3. *Junghuhnia chlamydospora* A) Hyphae from the poremouth, B) Skeletal cystidium, C) Chlamydopores, D) Basidiospores. From the holotype.

Junghuhnia carneola (Bres.) Rajchenb 4
J. neotropica I. Lindblad & Ryvarden, 1, 2, 5
J. *nitida* (Pers.) Ryvarden, 5
J. subundata (Murrill) Ryvarden 3, 4, 5, on *Fomes fasciatus,* and *Ganoderma* sp. comb nov ???
Laetiporus sulphuresus (Fr.) Murrill, 5.
Lindtneria trachyspora (Bourd. & Galz) Pilat, 7.
**Murrilloporus rutilantiformis* (Murr.) Ryvarden,
*Nigrofomes mela*noporus (Mont.) Murrill, 2, 3, 4, 5.
**Nigroporus vinosus* (Berk.) Murrill, 7, 8.
Oligoporus caesius (Fr.) Gilbn & Ryvarden, 8.
O. perdelicatus (Murrill) Gilbn. & Ryvarden, 6.

Oxyporus lacera Ryvarden nova species **Fig. 4**
Ad *Oxyporus pellicula* (Jungh.) Ryvarden, sed sporae 3-4 x 2-2.5 µm (5-8 x 3-4.5 µm in *O. pellicula*).
Holotype: Belize, Cayo District, Blue Hole National Park, St. Herman's Cave trail, 18 November, 2001, on fallen dicotoledonous log, L. Ryvarden 44204 O, isotypes in BRH.
Basidiocarps annual, resupinate, effused up to 8 cm in the holotype, soft when fresh, fragile when dry, pore surface white, pores angular to irregular, strongly split, lacerate and semihydnoid in parts, in regular parts with 1-2 pores per mm, tubes white, up to 3 mm deep, context white and very thin.
Hyphal system monomitic; generative hyphae simple-septate, thin- to thick-walled, with occasional branching, 2-6 µm wide.
Cystidia abundant, clavate, arising in the subhymenium, thick-walled and with an apical crown of coarse crystals, 12-20 x 4-7 µm.
Basidia clavate, 10-15 x 4-5 µm, with four sterigmata.
Basidiospores oblong ellipsoid, hyaline, thin-walled and negative in melzers reagent, 3-4 x 2-2.5 µm.
Substrata. On dead dicotoledonous wood.
Distribution. Known only from the type locality.
Remarks. The lacerate to split hymenophore make this a characteristic species. Superficially it looks like *O. pellicula*, but has far smaller spores than that species.

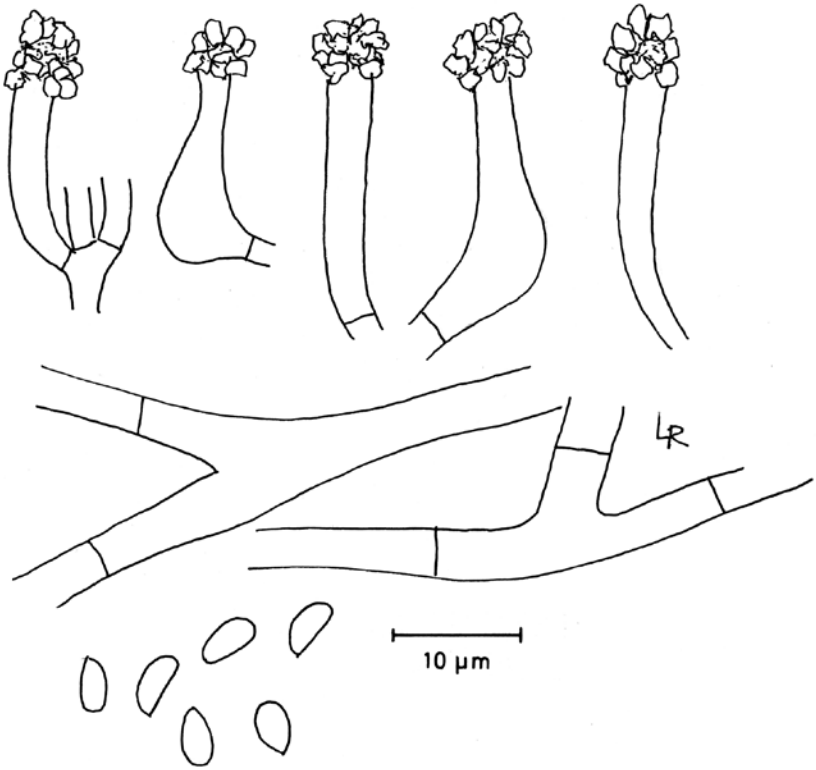

Fig. 4. *Oxyporus laceratus*, cystidia, generative hyphae and basidiospores. From the holotype.

Perenniporia. contraria (B. & Gilbn.) Ryvarden, 5
P. detrita (Berk.) Ryvarden, 1.
P. inflexibilis (Berk.) Ryvarden, 8.
P. martia (Berk.) Ryvarden, 8.
P. medullapanis (Fr) Donk, 2, 4.
P. micropora Ryvarden, 2, 4, 1.
P. tephropora (Mont.) Ryvarden, 5.
Polyporus arcularius Fr., 1.
P. grammocephalus Berk., 2.
P guianensis Mont., 2, 3, 5, 7.
P. leprieurii Mont., 5 & 7.

P. melanopus Fr., 7.
P. tenuiculus (Beauvais) Fr., 5, 7.
P. virgatus Berk & M.A. Curtis, 7.
Pseudofavolus cucullatus Pat., 1.
Rigidoporus aurantiaca Ryvarden & Iturriaga, 1, 2, 7.
R. lineatus (Pers.) Ryvarden, 1, 4, 5, 7.
R. microporus (Fr.) Overeem, 2.
R. undatus (Pers.: Fr) Donk, 4.
R. vinctus (Berk.) Ryvarden, 1, 3, 4, 5.

Rubroporus aurantiaca Ryvarden, nov. sp. Fig. 5
Ad *R. carneoporis* Loguercio-Leite, Groposo & Ryvarden, sed sporae 6-7 x 3.8-4 µm et hyphae skeletales praesentia (sporae 5-6 x 2.6-3.2 µm in *R. carneoporis* et hyphae arboriforme praesentia),
Holotypus: Belize, Toledo, Silver Creek Field Station, M. H. Ivory S/154, June 1976, on soil, (K, isotype in O).
Basidiocarps stipitate, up to 8 cm in diameter, and 3-4 cm thick in centre, upper surface ochraceous, cottony, in the type partly covered with small stones and gravel from its emergence from the soil, presumably from a buried root, pore surface dark orange, pores round to angular, 5-7 per mm, hardly visible to the naked eye, tubes concolorous with pore surface, fragile when dry, up to 1 cm deep at the base, context ochraceous to pale orange dense and homogeneous, unchanged with KOH.
Hyphal system dimitic; generative hyphae with clamps, hyaline, thin-walled, 2-5 µm wide, skeletal hyphae present, 4-6 µm diam, thick-walled, hyaline and without reaction in Melzer's reagent, very rarely dichotomously branched
Cystidia absent.
Basidia clavate, 4-sterigmate, 12-18 x 4-6 µm, with a basal clamp.
Basidiospores ellipsoid, hyaline, smooth, negative in Melzer's reagent, 6-7 x 3.8-4 µm.
Substrata and Distribution. Known only from buried root in the type locality.
Remarks. The new species is the second in the genus and characterized by its larger spores and dominance of skeletal hyphae, only rarely branched. In the type species the vegetative hyphae are arboriform or much more branched. Further it has a fleshy reddish basidiocarp and a dimitic hyphal system with sparingly branched skeleto-ligative hyphae being slightly dextrinoid in Melzer's reagent, a reaction not observed in this new species.

Key to *Rubroporus*

1. Pore surface red, pores 2-3 per mm, spores 5-6 x 2.6-3.2 µm .. **R. carneoporis**
1. Pore surface deep orange, pores 5-7 per mm. Spores 6-7 x 3.8-4 µm ..... **R. aurantiacus**

Schizopora flavipora (Cooke) Ryvarden, all localities.
S. paradoxa (Schrad.) Donk, 7.
Skeletocutis lenis (Karst.) Niemelä, 1, 5, 7.
S. kühneri David, 7.
S. vulgaris (Fr.) Niemelä & Y.C. Dai, 1.
Trametes cubensis (Mont.) Pat., 2
T. elegans (Fr.) Fr., 1, 7.
T. maxima (Mont.) A. David & Rajchenb., 4, 7, 8.
T. membranacea (Fr.) Kreisel, all localties.
T. modesta (Fr.) Ryvarden, 2, 3, 4, 5, 7.
T. pavonia (Hooker) Ryvarden, 3.
T. sclerodepsis Berk., 7.
T. supermodesta Ryvarden & Iturriaga, 4.
T. villosa (Fr.) Kreisel, 2, 7.
Tinctoporellus epimiltinus (Berk. & Broome) Ryvarden 2, 3, 5.
Trichaptum abietinum (Fr.) Ryvarden, on *Pinus caribbea,* 8.
T. perrottetii Lev.) Ryvarden, 1, 7.
T. sector (Ehrenb.) Kreisel, 5 & 7.
Tyromyces pseudolacteus Murrill, 2.

Stereaceae

Caripia montagnei (Berk.) Kuntze, 1, 2, 5, 7.
Cotylidia aurantiaca (Pers.) A.L. Welden, all localities.
Cymatoderma dendritica (Pers.) D.A. Reid, 1, 5, 2, 3, 4, 7.
Lopharia papyrum (Mont.) Boidin, 2.
Podoscypha fulvonitens (Berk.) D.A. Reid, 7.
P. moelleri (Bres. & Henn.) D.A. Reid, 1, 5.
P. petalodes (Berk.) Boidin, 6, 2.
P. ravenelii (Berk. & M.A. Curtis) Pat. 2.
P. venustula (Speg.) D.A. Reid 1, 5.
Stereopsis burtiana (Peck) D.A. Reid, 6.
Stereopsis radicans (Berk.) Reid all localites.
Stereum ostrea (Blume & T. Nees:Fr.) Fr. 5 & 8

Thelephoraceae
Hydnellum aurantiacum (Alb. & Schwein.:Fr.) P. Karsten, 5, under *Pinus caribbea*.
Phellodon putidus (G.F. Atk.) Banker, 1, 5, in *Pinus* forest.

Acknowledgements
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Studies in Neotropical polypores 24 New and interesting species from Costa Rica

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Abstract
Serpula costaricensis M. Mata & Ryvarden sp. nov. and *Polyporoletus neotropicus* M. Mata & Ryvarden sp. nov. are described as new.
Key words: Coniophoraceae, polypores.

Introduction
For many years we have extensively collected polypores in Costa Rica and in addition numerous collections have been made by parataxonomists connected to INBio Among these collections there are many new taxa of poroid species and the present paper is the first in a series of papers in which new taxa will be proposed. For a general survey of the polypores of Costa Rica, the reader is referred to http://atta.inbio.ac.cr/como_usar.htm

Serpula costaricensis M. Mata & Ryvarden sp. nov. Fig. 1
Ad *Serpula lacrymans* (Wulfen) J. Schröt. sed sporae 6-7 x 4-5 µm (9-12 x 4.5-6 µm in *S. lacrymans*).
Holotype: Costa Rica, Guanacaste, Lomas Barbudal, 17. October 2003, leg. I. Lopez 4942 (INB 4077942), isotype in O.

Basidiocarp pileate, sessile, dimidiate with a contracted base, semicircular, up to 7 cm in radius, 1.5 cm thick at the base tapering towards a sharp margin, soft when fresh, lightweight and fragile when dry, upper surface glabrous, probably smooth when fresh, when dry slightly irregularly folded due to shrinking and without any noticeable pattern or zonation, bright yellow with small browns patches where touched , lower side with a reticulate pattern of shallow, irregular brown pores 0.5-2 mm wide and up to 0.5 mm deep becoming more shallow towards a wide almost smooth margin, tubes brown, dense, fragile and 0.3 mm deep, context white, soft when fresh, partly shrunken when dry and dense, but easily indented with a nail, up to 1.5 cm at the base, no reaction in KOH or Melzer's reagent.
Hyphal system monomitic; all hyphae without clamp connections, in the subhymenium and the brown layer 2-4 µm wide and slightly twisted, in the context up to 10 µm wide with thin hyaline walls, straight and sparingly branched and with large clamps.
Cystidia not seen.
Basidia clavate, up to 80 µm long and 10 µm wide with a long thin tapering base, with four sterigmata and with a basal clamp connection.
Basidiospores ellipsoid, yellow, thick-walled, smooth and without reaction in Melzer's reagent, 6-7 (8) x 4-5 µm.
Type of rot. Not observed, but probably brown.
Substrate. On unknown hardwood log.
Distribution. Known only from the type locality.
Remarks. This new species is remarkable in having a dimidiate basidiocarp of a type never seen in any other *Serpula* species. In *S. lacrymans* some basidiocarps have a reflexed pileus over an effused resupinate part, but the basidiocarps are never dimidiate as in this new species. In addition the spores of *S. costaricensis* are much shorter than those of *S. lacrymans* (where they are 9-12 x 4.5-6 µm).

There are few representatives of *Serpula* in the tropics, an exception being *S. similis* (Berk. & Broome) Ginns, a resupinate species so far known only from the palaeotropics. Its spores are shorter than those of *S. costaricensis* (where they are 4-5 x 3-3.5 µm; see Ginns, 1971, for a detailed description).
Specimen examined:
Serpula similis: Cameroon, Campo province, Akok lowland rain forest reserve, 4 December 1991, leg. M. Nunez & L. Ryvarden, 30720, freeze-dried (O).

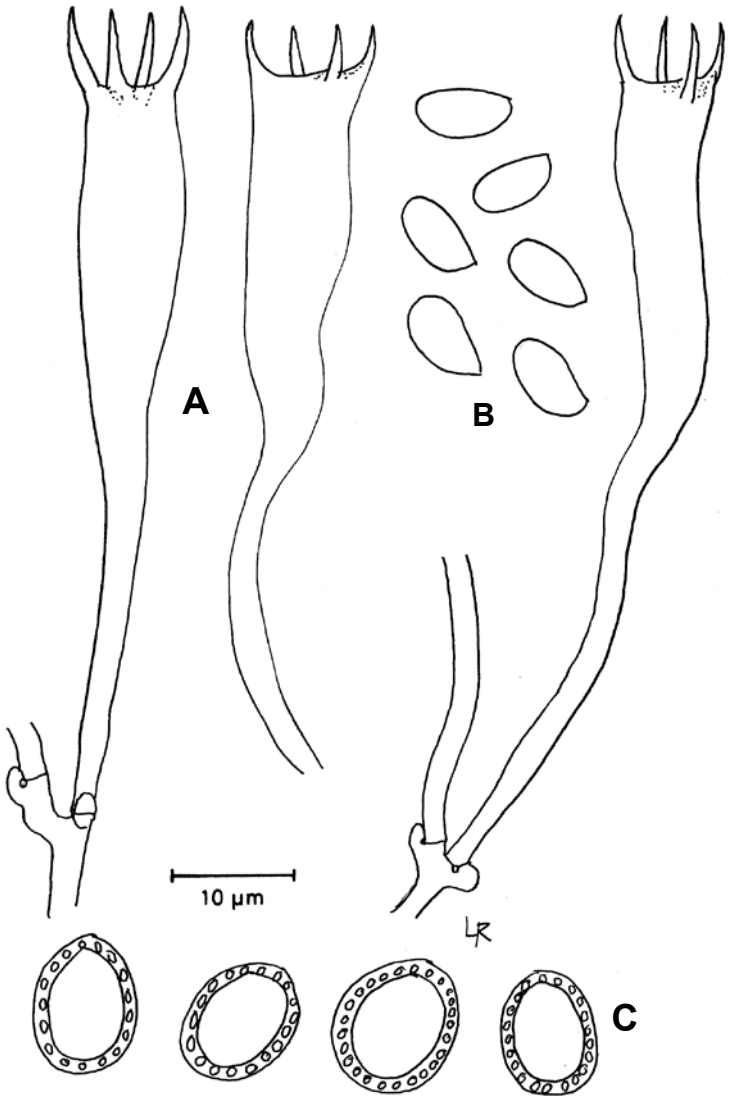

Fig. 1. *Serpula costaricensis*, A) Basidia, B) spores, *Polyporoletus neotropicus* C) Basidiospores. From the holotypes.

Polyporoletus neotropicus M. Mata & Ryvarden sp. nov. **Fig. 1C**
Ad. *Polyporoletus sublividus* Snell sed pileus glaber et sporae 8-10 x 7-8 µm (tomentose and spores 10-12 x 8-10 µm in *P. sublividus*)
Holotype: Costa Rica, San José, Sta. María de Dota, Fundación Nubotropica, 31 August 2006, Leg. M. Mata 1828 (INB 4078040), isotype in O.

Basidiocarps annual, centrally stipitate, terrestrial; pileus solitary, circular, about 10 cm in diameter and 1 cm thick; pileal surface glabrous and sub-shiny, evenly brown with some paler spots, smooth when fresh, wrinkled concentrically after drying, pore surface brown, pores circular to angular, variable in size, mostly 1-2 per mm but some up to 2 x 1 mm and elongated radially, tube walls thin and wavy, tubes concolorous up to 5 mm deep and fragile, context white and strongly contrasting with the tubes, in the centre up to 5 mm thick, probably soft when fresh, hard when dry, but easily indented with a nail,
Stipe cylindrical, pale brown and almost grey-ochraceous towards the pileus, slightly widened towards the base, dull and with a very fine adpressed cover of fine fibres (hand lens), 6 cm high and up to 1 cm in diameter towards the base, context as in the pileus.
Hyphal system monomitic; contextual hyphae mostly hyaline, thin-walled, with clamps and simple septa, with occasional branching, 5-10 µm in diam; also some larger hyphae with unevenly thickened walls, up to 20 µm in diam; tramal hyphae thin-walled, 2.5-5 µm in diam, with clamps; gloeoplerous hyphae also present in trama, 5-15 µm wide, dark in KOH and not reacting in Melzer's reagent.
Cystidia absent.
Basidia clavate, 30-45 x 11-14 µm, with a basal clamp and 4 sterigmata, up to 6 µm long.
Basidiospores subglobose to broadly ellipsoid, 8-10 x 7-8 µm, hyaline, appearing slightly rough, with a double wall with vesicles or small lacunae separated by interwall pillars or partitions, negative in Melzer's reagent, with a large spherical drop.
Type of rot. Terrestrial, probably ectomycorrhizal.
Substrata. On the ground in a tropical forest.
Distribution. Known only from the type locality.
Remarks. *Polyporoletus neotropicus* is undoubtedly close to *P. sublividus* sharing above all the unique spores with the internal vesicles or lacunae in the spore walls. The new species has smaller spores, a glabrous pileus and much larger irregular pores compared with *P. sublividus* as we have seen it (see below).

Dr. Karl-Henrik Larsson of Gothenburg has kindly informed us that *P. sublividus* comes close to *Albatrellus* when their sequences are compared, which

supports the suggestions that the genus is ectomycorrhizal as this is a common life strategy in *Albatrellus*. Even so, the unique spores justify keeping *Polyporoletus* as a separate genus.
Specimens examined: *Polyporoletus sublividus*: USA, Tennessee, Cocks county, Indian Cave Creek, 30 August, 1938, leg. A. H. Smith (O); Tennessee, Great Smoky Mts., Cades Cove, 19 August 1949, leg. J. L. Lowe (NY); Washington, Mt. Rainer Nat. Park, 28 August 1948, leg. H. Stuntz (NY).

Boletopsis grisea (Peck) Bondartsev & Singer
This is an interesting species being one of the few poroid representatives in *Thelephoraceae* and, are as all species in the family, ectomycorrhizal. In Europe and North America it is usually associated with pine, exceptionally under broad-leaved trees as was the case in Costa Rica. The collection is the southernmost record of this species.
For detailed description see Ryvarden & Gilbertson, 1993:173.
Specimen examined: Costa Rica, Cerro de la Muerte, Finca La Neblina, 14 October 2006, leg. E. Navarro 9973, (INB 4043838).
The site is cloud forest with oaks, predominantly *Quercus bumelioides* and *Q. seemannii*; there are also *Chusquea* spp. and *Camarostaphylis* spp. The site is 2600 metres above sea level and is the highest area just before the Paramo.

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Studies in corticioid fungi from Venezuela III (Basidiomycotina, Aphyllophorales).

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Abstract
65 corticioid species based on specimens collected by Leif Ryvarden from Venezuela are reported. One new genus is described viz.: *Ceraceopsis* Hjortstam & Ryvarden to accommodate the new species *Ceraceopsis verruculosa* Hjortstam & Ryvarden. Four additional new species are proposed: *Hyphoderma acutatum* Hjortstam & Ryvarden, *Phlebiella palmicola* Hjortstam & Ryvarden, *Radulodon revolubilis* Hjortstam & Ryvarden, and *Xylodon tenellus* Hjortstam & Ryvarden. The following new combinations are proposed: *Athelopsis bispora* (Boidin & Gilles) Hjortstam & Ryvarden, *Gloeopeniophorella sacrata* (G. Cunn.) Hjortstam & Ryvarden, *Gloeopeniophorella singulare* (Boidin et al.) Hjortstam & Ryvarden, *Tofispora scaberula* (Hjortstam & Ryvarden) Hjortstam & Ryvarden, *Xylodon australis* (Berk.) Hjortstam & Ryvarden, *Xylodon bugellensis* (Ces.) Hjortstam & Ryvarden, and *Xylodon pruni* (Lasch) Hjortstam & Ryvarden. The genus *Xylodon* (Pers.) Gray, with the basionym *Sistotrema* sect. *Xylodon* Pers. and the generic type *Hydnum quercinum* Pers.:Fr., is reintroduced.

Acanthophysellum cerussatum (Bres.) Parmasto, Eesti NSV Tead. Akad. Toim. Biol. 16:378, 1967.
Corticium cerussatum Bres., Fungi Trid. 2: 37, 1892.
Kneiffia cerussata (Bres.) Bres., Annls mycol. (Berlin) 1:104, 1903.
Aleurodiscus cerussatus (Bres.) Höhn. & Litsch., Sitzber. Akad. Wiss. Wien, Math.-nat. Kl. 116:807, 1907.

Acanthophysium cerussatum (Bres.) Boidin, Bull. Soc. Myc. Fr. 101 (3): 340, 1986.
Acanthophysellum cerussatum (Bres.) Sheng H. Wu et al., Mycotaxon 76:160, 2000 (superfluous combination).
Basidiome strictly adnate, effused, normally thin. Hymenophore smooth to farinose, whitish to ochraceous when dry. Hyphal system monomitic; hyphae thinwalled, up to 4 µm wide, forming a fairly dense texture, all hyphae with clamp-connections. Gloeocystidia 40-60(-80) x 8-12 µm, apically more or less moniliform, but variable in form, positive with sulphovanillin. Acanthophyses numerous, with apical protuberances, indextrinoid. Basidia about 40-50 x 7-8 µm, with four sterigmata and a basal clamp-connection. Spores variable, usually 10-12 x 6-7 µm, ellipsoid, smooth, amyloid.
The species was originally described from Italy and is fairly common in Europe and North America. Reported in South America from Brazil (Hjortstam & Bononi, 1987) and Argentina (Greslebin, 2002).
Specimen: Estado Bolivar, Gran Sabana, Parque Nacional Canaima, 11.VI.2003, L. Ryvarden 45509.

Athelopsis bispora (Boidin & Gilles) Hjortstam & Ryvarden **comb. nov.**
Basionym: *Sphaerobasidium bisporum* Boidin & Gilles, Bull. Soc. Mycol. France 105:150, 1989.
Basidiome very thin, loosely adnate, hypochnoid to almost pellicular, greyish white. Hyphal system monomitic; hyphae thin-walled, hyaline, generally smooth or with crystals in the texture, 1.75-2.5 µm wide, with clamp-connections, richly branched at right angles. Cystidia absent. Basidia clavate, some with pleural appearance, otherwise typically pedunculate, 7-9(-11) x 4-6 µm, with two sterigmata, about 6-7 µm long. Spores smooth, thin-walled, cylindric, almost acicular, 14-19 x 2.25-2.5(-3) µm, with the broadest part below the apiculus, very few in examined specimens.
The species was originally described from Reunion and is known only from the holotype (on *Acanthophoenix* sp.). The micromorphology indicates a close resemblance to *Athelopsis*, especially the thin-walled and narrow hyphae, pedunculate basidia, and also spore shape, although the spores are larger than known from other species in the genus.
Specimens: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on palm, 21.II.2000, L. Ryvarden 42309 and 42313.

Athelopsis lembospora (Bourdot) Oberw., Persoonia 7:3, 1972.
Corticium lembosporum Bourdot, Rev. Sci. Bourb. 23:10, 1910.
Luellia lembospora (Bourdot) Jülich, Persoonia 8:292, 1975.

Basidiome very thin, loosely adnate, pellicular, pure white to greyish white. Subiculum subinconspicuous. Hyphal system monomitic; hyphae thin-walled, hyaline, smooth or slightly incrusted, 2-3 µm wide, with clamp-connections, richly branched at right angles. Cystidia absent. Basidia pedunculate, (10-12-)15-18(-20) x 4-5(-6) µm, with four sterigmata and with a basal clamp-connection. Spores suballantoid to allantoid, thin-walled, smooth, often broadest below the apiculus, often glued together in pairs, 6-7 µm long and about 2.5 µm wide, inamyloid and indextrinoid.

Typically on ferns and palm trees. In South America previously known from Argentina (spores longer than normal), Brazil, and Colombia. Also recorded from New Zealand by Cunningham (1963) under the name *Corticium confusum* Bourdot & Galzin. According to his description and illustration, this seems to be in accordance with the concept of *A. lembospora*, though it should be noted that he described projecting "paraphysate hyphae". A similar species, if not the same, was described from Hawaii under the name *Athelia cibotii* Gilb. & Hemmes.

Specimen: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, 21.II.2000, L. Ryvarden 42310.

Key to tropical *Athelopsis* species

1. Hymenophore odontioid or with sterile hyphal pegs **2**
1. Hymenophore smooth **4**

2. Hymenophore odontioid, aculei up to 0.5-1.0 mm long, cystidia about 30-40 µm long, capitulate, spores 3-4 x 1.25-1.5 µm (on wood) Taiwan (*Athelopsis s.l.) lunata* (Romell) Parmasto
2. Hymenophore with hyhal pegs 3

3. Basidiome rather dense, capitulate hyphal ends in the aculei, spores 7-12 x 1.5-2.5 µm (on fern) Reunion ***A. bananispora*** (Boidin & Gilles) Hjortstam
3. Basidiome more or less loose, hyphal ends not capitulate, spores (5-)8-10 x 2.5-3.5 µm (on ferns) ***A. galzinii*** (Bres.) Hjortstam

4. Clamp-connections absent, basidia with four sterigmata, spores 9-12 x 2.75-3.25 µm (on wood). Brazil ***Athelopsis crystallifera*** (Rick) Hjortstam
4. Clamp-connections present **5**

5. Gloeocystidia present **6**
5. Gloeocystidia absent **7**

6. Gloeocysidia with yellowish contents, spores 6-8 x 2-3 µm (on wood). Argentina
A. gloeocystidiata Greslebin & Rajchenb.
6. Gloeocystidia otherwise, spores 5 x 2.75 µm (on ferns). Colombia
A. colombiensis Hjortstam & Ryvarden

7. Hymenophore yellowish greenish in KOH, spores ellipsoid 5-6(-7) x 2.5-3.2 µm (on wood). Argentina ***A. virescens*** Hallenb. & Hjortstam
7. Hymenophore not greenish in KOH **8**

8. Spores ellipsoid, 6-8 x 3.5-4.5 µm (on wood) Argentina ***A. subinconspicua*** (Litsch.) Jülich
8. Spores different **9**

9. Spores cylindrical to acicular, 14-19 x 2.25-2.5(-3) µm. Reunion ***A. bispora***
9. Spores otherwise **10**

10. Spores cylindrical, 9-10 µm long, generally glued together in groups of 2-4 (mainly on wood). Africa and South America. ***A. glaucina*** (Bourdot & Galzin) Oberw. ex Parmasto
10. Spores allantoid, 6-7 µm long, (exclusively?) on ferns. Possibly a cosmopolitan species ..... ***Athelopsis lembospora***.

Brevicellicium mellinum (Bres.) Hjortstam & Ryvarden,
Mycotaxon 10:269, 1980.
Corticium mellinum Bres., Annls mycol. (Berlin) 18:47, 1920.
Basidiome resupinate, effuse, loosely adnate, thin, pellicular, cracking, cream to ochraceous (pale reddish ochraceous in specimen 45712), subiculum fairly thin, almost byssoid with loosely arranged hyphae. Hyphal system monomitic; cords more or less abundant. Subicular hyphae straight and uniform, anastomosing, thin-walled, variable in width, 2.5-3(-5) µm, some hyphae with ampullate swellings, Subhymenial hyphae widened, somewhat isodiametric, 4-6(-8) µm wide, all hyphae with clamp-connections. Cystidia absent. Basidia terminal, clavate to subcylindrical, slightly constricted, with four sterigmata, 15-20 x 4.5-5 µm. Spores smooth, thin or with somewhat thickened walls, not or weakly cyanophilous, usually with a more or less oblique appearance, (2.5-)3-3.5(-4) x 2.5(-3) µm, inamyloid.
It should be noted that in his thesis Larsson (1992) made a temporary combination for this species in *Trechispora* based on the occurrence of cords and ampullate septa. At present we prefer to keep the species in *Brevicellicium*. *Corticium*

crustulinum Burt 1926, described from Puerto Rico is the same, but is a homonym of *Corticium crustulinum* Bres. 1920 (see Larsson, 1992).
Specimens: Estado Miranda, Tacata area, Rio Tacata, 14.VI.2003, L. Ryvarden 45669 and 45712.

Candelabrochaete cfr. **langloisii** (Pat.) Boidin, Cah. Maboké 8:24, 1970.
Hypochnus langloisii Pat., Bull. Soc. Mycol. France 24:3, 1908.
Pellicularia langloisii (Pat.) D.P. Rogers, Farlowia 1:101, 1943.
Botryobasidium langloisii (Pat.) Gilb. & Budingt., J. Arizona Ac. Sci. 6:92, 1970.
Odonticium langloisii (Pat.) Zmitr. & Spirin, Mycena 6:40, 2006.
Basidiome effused, in the Venezuelan specimen as scattered and small patches. Hymenophore smooth, but becoming pilose by protruding cystidia. Hyphal system monomitic; basal hyphae thick-walled, generally 6-10 µm diam, yellowish, smooth or slightly incrusted, other hyphae subhyaline to hyaline, all hyphae without clamp-connections. Cystidia cylindrical, up to 150-200 µm long and 10-20 µm wide, septate, constricted, thin-walled, smooth or slightly incrusted. Basidia broadly clavate to ovate, about 14-18 µm long and 8 µm wide below the four sterigmata. Spores smooth, thin-walled, hyaline, ellipsoid or almost reniform to slightly allantoid, 6-8 (9) x 3-4 µm, inamyloid, indextrinoid, acyanophilous.
This is apparently a rare species and so far only known from the type locality (USA, Louisiana, holotype: Langlois 2968, FH) and from Florida (sub *Phanerochaete insolita* Burds. & Nakasone). The specimens below are probably in a young phase of development, but agree fairly well with the concept of the species.
Specimens: Estado Aragua, Parque Nacional Henri Pittier, 25.IV.1998, L. Ryvarden 40767/B (Hjortstam Priv. Herb.); Estado Bolivar, Gran Sabana, Parque Nacional Canaima, 11.VI.2003, L. Ryvarden 45596.

Candelabrochaete mexicana (Burt) P. Roberts, Kew Bull. 55:808, 2000.
Peniophora mexicana Burt, Ann. Mo. Bot. Gard. 12:243, 1926.
Brief description of the type-specimen (Mexico, Orizaba, Nuevo, W. A. & E. L. Murrill 773, FH): Basidiomes effused, rather thin, more or less hypochnoid, with densely projecting cystidia or hyphal ends. Hyphal system monomitic; hyphae hyaline, lacking clamp-connections, swelling considerably in KOH, 5-6 µm diam, with walls 1-2 µm thick, basal hyphae broader, thick-walled, up to 10-12 µm wide. Cystidia or hyphal ends conspicuous, 100 µm long or more, scattered, projecting, thick-walled, septate, about 10-12 µm wide, incrusted. Basidia not observed (scarce, subcylindrical to short-clavate, 9-11.5 x 6.5-7 µm, according

to Liberta 1968). Spores globoid to ellipsoid 6-7(-7.5) x (4.5-) 5-5.5 µm, smooth, hyaline, with indistinctly thickened walls, cyanophilous reaction weak.
The species seems to be rare, though it was reported from Cameroon by Roberts (2000).
Specimen: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, 24.XI.1994, L. Ryvarden 35500.

Key to tropical *Candelabrochaete* species

1. Basidiome fragile when dried, hymenophore grandinioid to somewhat odontioid with blunt aculei, cystidia septate, thick-walled at least in the upper part and 6-10 µm wide, with thick-walled conidia, spores subglobose 5-5.5 x 4-4.5 µm. Argentina, Brazil, and Colombia ***C. dispar*** Hjortstam & Ryvarden
1. Not with this combination of characters, spores ellipsoid or allantoid.....**2**

2. Spores thick-walled, with a weak cyanophilous reaction, Mexico, Venezuela, and Cameroon .....***C. mexicana***
2. Spores thin-walled **3**

3. Basidiome rather thick, spores allantoid 4.5-5(-6.5) x 1.5-2 µm. Mainly distributed in Northern hemisphere and Brazil and Jamaica.....***C. septocystidia*** (Burt) Burds.

3. Basidiome thin or moderately thick, spores ellipsoid, narrowly ellipsoid or cylindrical, if allantoid then broader than 2 µm.....**4**

4. Basidiomes thin and almost pellicular, closely adnate, not separable from the substratum, cystidia thin-walled, non-septate, hyaline and subulate, smooth, spores about 6.5-7 x 2.8-3.5 µm, on bamboo and deciduous wood. Brazil .....***C. adnata*** Hjortstam
4. Basidiome different, cystidia septate **5**

5. Basidiome rather thick, hymenophore grandinioid to odontioid, cystidia thin-walled, spores ellipsoid 5.5-6 x 3-3.25 µm. Brazil, Kenya and Malawi. ..... ***C. verruculosa*** Hjortstam
5. Hymenophore smooth or almost so, but often strongly pilose with protruding cystidia which are pigmented yellowish brown at least near the base and are thick- to moderately thick-walled, spores suballantoid to allantoid or ellipsoid to cylindrical **6**

6. Spores suballantoid to allantoid (6-)7-8(-9.5) x 3-3.5(-4) µm, USA (Florida and Louisiana). .....***C. langloisii***
6 Spores ellipsoid to ± cylindrical **7**

7. Basidiome robust, cystidia thick-walled, obtuse or sometimes subcapitate, spores almost cylindrical 4.25-6 x 2.25-3 µm. Brazil, Venezuela, Thailand, Taiwan, and Gabon. .....***C. africana*** Boidin
7. Basidiome thin, pellicular, cystidia moderately thick-walled, spores ellipsoid.**8**

8. Spores short-ellipsoid 4.5-5.5 x 3-3.25 µm, cystidia 6-8(-10) µm wide. Colombia and Thailand.....***C. simulans*** Hjortstam (Note *Phanerochaete globosa(um)* Sang H. Lin & Z.C. Chen (Taiwan), which could also be a species of *Candelabrochaete).*
8. Spores 6-10 µm long **9**

9. Spores ellipsoid 6-7(-8) x 3-4 µm; cystidia 9-15 µm wide. Florida. ***C. magnihypha*** (Burt) Burds.
9. Spores ellipsoid to cylindrical 6.5-10 x 3-4.5 µm, cystidia 6-10 µm wide. New Zealand..... ***C. eruciformis*** (G. Cunn.) Stalpers & P.K. Buchanan

Ceraceopsis Hjortstam & Ryvarden **gen. nov.**
Basidioma strictum resupinatum, effusum, arte adnatum, satis tenue. Hymenophorum leve, griseum, demum ochraceum; subiculum distinctum, exalbidum, rhizomorphis rare vel absentia, margine saepe fimbriate. Systema hyphale monomiticum; hyphae distincte, tenuitunicatae vel crassiusculae, praecipue hyalinae vel pallide luteolae. Fibulae nullae. Cystidia absentes. Basidia plus minus clavata, 4 sterigmatibus. Sporae semiglobosae vel ellipsoidae propemodo tenuitunicatae, leviter verrucatae, hyalinae, cyanophilae, neque amyloideae, neque dextrinoideae.
Generic type: *Ceraceopsis verruculosa* Hjortstam & Ryvarden
Generitype specimen: Venezuela, Yutajé, 12-19.VI.1997, L. Ryvarden 40496.
Basidiome resupinate, membranous, moderately thin. Hymenophore smooth, with a distinct whitish to pale yellowish subiculum. Rhizomorphs rare or lacking, but margin often fimbriate. Hyphal system monomitic; hyphae straight and uniform, sparsely branched, in the type species about 3 µm wide, hyaline or in the subiculum pale yellowish brown and then generally broader, thin-walled or with a slight wall thickening, clamp-connections absent. Cystidia lacking. Basidia almost clavate, in the type species up to 40 µm long and 7-8 µm wide below the four sterigmata. Spores finely rugose, thin-walled or becoming slightly thick-walled, in the type species generally 6.5-7.5 x 4.5-5 µm, at first globoid, when

fully matured ellipsoid, cyanophilous, not amyloid or dextrinoid.

The genus is characterised by its type species which has a smooth, pellicular to membranous basidiome, hyphae lacking clamp-connections, and spores which are slightly warted and cyanophilous.

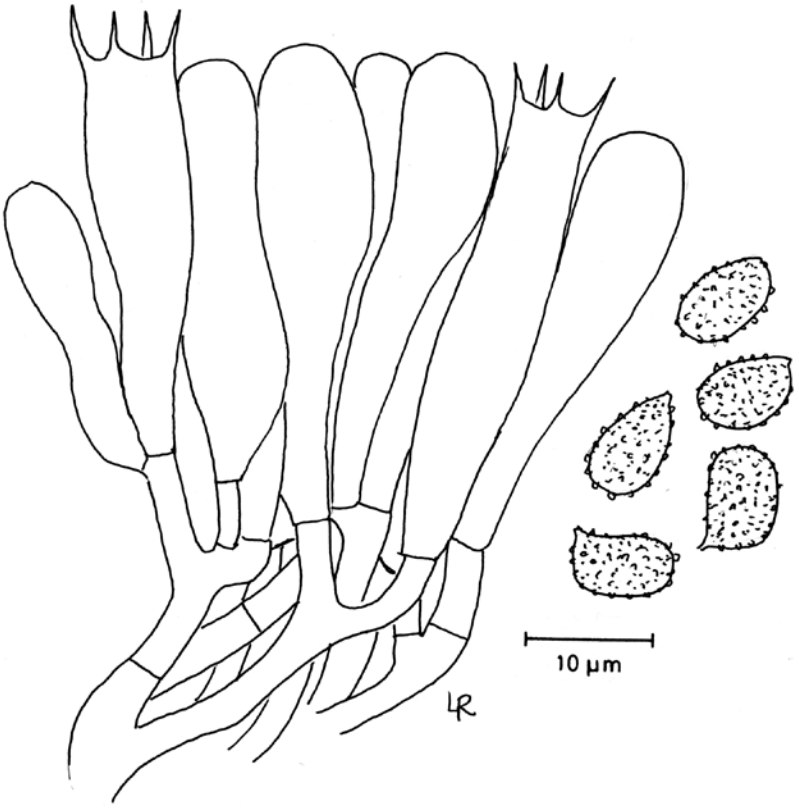

Fig. 1. *Ceraceopsis verruculosa*, Part of hymenium and basidiospores. From the holotype

Ceraceopsis verruculosa Hjortstam & Ryvarden **sp. nov.** **Fig. 1**
Basidioma resupinatum, pelliculare vel membranaceum. Hymenophorum leve, ochraceum, subiculum distinctum, rhizomorphae rarae, margine saepe fimbriate. Systema hyphale monomiticum; hyphae distincte, tenuitunicatae vel crassiusculae, circiter 3 µm latae, hyalinae vel pallide luteolae. Fibulae desunt. Cystidia absentes. Basidia plus minus clavata, 35-40 x (6-)7-8 µm, 4 sterigmatibus. Sporae semiglobosae vel ellipsoidae propemodo tenuitunicatae, leviter verrucatae, (6-)6.5-7.5 x 4.5-5 µm, hyalinae, cyanophilis, neque amyloidei, neque dextrinoidei.
Holotype: Venezuela, Estado Amazonas, Yutajé, 100 m alt., on dead deciduous wood, 12-19.VI.1997, L. Ryvarden 40496 (O). Paratype: ditto, L. Ryvarden 40503 (O).
Basidiome strictly resupinate, effused, pellicular to membranous. Hymenophore ochraceous, smooth with a distinct whitish to pale yellowish subiculum, rhizomorphs apparently absent, but often fimbriate at the margin. Hyphal system monomitic; subicular hyphae thin-walled, sparsely branched, generally pale yellowish, 4-5(-6) µm wide, other hyphae straight and uniform, sparsely ramified, normally branching at a 45^0 angle, about 3 µm wide, sometimes with ampullate septa, hyaline or in the subiculum pale yellow, thin-walled or with a slight wall thickening, clamp-connections absent. Cystidia lacking. Basidia almost clavate, 35-40 x (6-)7-8 µm, somewhat constricted, thin-walled, with four sterigmata. Spores finely rugose, thin-walled or becoming thick-walled (6-)6.5-7.5 x 4.5-5 µm, at first globoid then ellipsoid, cyanophilous, not inamyloid or indextrinoid.

Cericium luteoincrustatum (Hjortstam & Ryvarden) Hjortstam, Mycotaxon 54:184, 1995.
Amethicium luteoincrustatum Hjortstam & Ryvarden, Mycotaxon 25:542, 1986.
Brief description from the type: Basidiome resupinate, closely adnate, about 0.2-0.6 (-1) mm thick, membranaceous, fairly brittle, subiculum whitish. Hymenophore generally smooth, dotted by reddish incrustation from the cystidia, sordid yellow or brownish, margin soft and byssoid. Hyphal system dimitic with a distinct pale ochraceous subiculum, skeletal hyphae 0.5-1 µm wide, arboriform, hyaline, thin-walled, without clamp-connections, generative hyphae wider, with clamp-connections, about 2-2.5 µm wide, hyaline or strongly incrusted with resinous and yellowish matter. Cystidia abundant, usually projecting 10-20 µm above the basidia, flexuose, tapering towards the obtuse tip, basally strongly incrusted with yellowish, resinous matter, 70-100 x 5-8 µm, cystidioles scattered in the hymenium 20-30 x 3.5-4 µm, more or less subulate and broadest above the middle part. Basidia in a dense tissue, 20-40 x 4-4.5 µm, thin-walled, with four sterigmata and a basal clamp-connection. Spores narrowly ellipsoid, smooth,

thin-walled, 4.5-5 x 2.75-3 µm.
Originally described from Argentina (Iguazu) and later reported from Colombia by Hjortstam & Ryvarden (2000). According to Wu (1990) collected from Taiwan.
Specimens: Estado Amazonas, Yutajé, on dead deciduous wood, 12-19.IV.1997, L. Ryvarden 40354, 40478, and 40487.

Dacryobolus cfr**. karstenii** (Bres.) Oberw., in Parmasto, Conspectus syst. corticiacearum: (Tartu) p. 98, 1968.
Stereum karstenii Bres., Atti I.R. Acc. Agiati Sez. 3 vol. 3(1):108, 1897.
Phanerochaete karstenii (Bres.) P. Karst., Med. Soc. Fauna Fl. fenn. 1:162, 1889.
Lloydella karstenii (Bres.) Höhn. & Litsch., Sitzber. Akad. Wiss. Wien, Math.-nat. Kl. 115:1568, 1906.
Peniophora verticillata Burt, Ann. Mo. Bot. Gard. 12:285, 1926.
Tubulicrinis karstenii (Bres.) Donk, Fungus 26 (1-4): 14, 1956.
Tubulicrinis crassa (Burt) Hayashi, Bull. Gov. Forest Exp. Sta. 260:46, 1974.
Basidiome resupinate, usually confluent and effused, closely adnate. Hymenophore smooth or slightly pilose from the protruding cystidia, mainly cracked, whitish to pale yellowish ochraceous. Hyphal system dimitic; subiculum consisting of distinct skeletal hyphae, thick-walled, swelling in KOH, other hyphae thin-walled, with clamp-connections. Cystidia very long, up to 250 µm, penetrating above the basidial layer, apically thin-walled, but distinctly thick-walled towards the base, usually strongly swelling in KOH, normally apically incrusted. Basidia long and narrow, up to 45 µm long or even longer, below the sterigmata distinctly constricted and then widened, with four sterimata and a basal clamp-connection. Spores thin-walled, smooth, cylindrical to somewhat allantoid, 5-6(-6.5) x 1.2-1.75 µm, inamyloid.
Dacryobolus karstenii was originally described from Hungary and is a fairly common species in the Northern Hemisphere, especially on pine. There is a fine illustration in Eriksson and Ryvarden (1975). Otherwise it is known from Reunion on *Cryptomeria* (Boidin & Gilles, 2000) and has also been reported from the Canary Islands (Ryvarden, 1976).
The Venezuelan specimen is scanty and differs mainly by having a reflexed basidiome and by apparently lacking clamp-connections throughout. Otherwise it conforms to the concept of the species. It should be noted that Rattan (1977) reported that clamp-connections were uncommon and not present at all septa.

Specimen: Estado Bolivar, Gran Sabana, 1 km east of Astacion Aponwao, 1200 alt., on deciduous wood, 24.II.2000, L. Ryvarden 42330 and Iturriaga 7226. Additional specimen (*Dacryobolus* s.s. *karstenii*): Mauritius, Black River National Park, 7.VII. 2000, leg. Hausknecht MT 103, det Hjm (dupl. Hjm Priv. Herb.).

Dendrothele griseocana (Bres.) Bourdot & Galzin, Bull. Soc. Mycol. Fr. 28:354, 1913.
Corticium griseocanum Bres., Fungi Trid. 2:58, 1898.
Aleurodiscus griseocanus (Bres.) Höhn. & Litsch., Wiesner-Festschr. p. 76, 1908.
Aleurocorticium griseocanum (Bres.) P.A. Lemke, Can. J. Bot. 42:736, 1964.
Though we have not examined the specimen, we are convinced that the excellent drawing of a Venezuelan collection by Oberwinkler (1972) represents this species. For a recent description and discussion of the species, see Nakasone (2006).
Specimen: Venezuela, 12.XI.1966, B & F. Oberwinkler 13390 (in Oberwinkler Priv. Herb.).

Dendrothele strumosa (Fr.) P. A. Lemke, Persoonia 3: 367, 1965.
Stereum strumosum Fr., Nova Acta Soc. Sci. Upsal. III 1:111, 1851.
Aleurodiscus strumosus (Fr.) Burt, Ann. Mo. Bot. Gard. 5: 190, 1918.
Aleurocorticium strumosum (Fr.) P.A. Lemke, Can. J. Bot. 42:753, 1964.
Dendrothele strumosa (Fr.) P.A. Lemke, Persoonia 3 (3): 367, 1965.
Basidiome orbicular, separated in fairly small pieces, 3-7 mm diam. to somewhat confluent, soft pruinose to farinose. Hymenophore yellowish, more or less smooth. Hyphal system monomitic; hyphae 2-2.5 (-3) µm wide, irregular, thin-walled, with scattered, inconspicuous clamp-connections, covered with crystalline matter, hyaline to yellowish. Dendrophyses 1-1.5 µm wide, incrusted. Gloeocystidia piriform, 20-40 (-55) x 10-20 (-25) µm; hyaline or with yellow granulation, negative with sulphovanillin. Basidia 50-75 x 20-30 µm, with four sterigmata. Spores subgloboid, about 20-25 x 20 µm, apiculate, thin-walled to slightly thickened, smooth, inamyloid.
The type is from Mexico. According to Lemke (1964) the species is known from the USA (Florida), Guadeloupe, Puerto Rico, Cuba, and Trinidad. Previously reported from Venezuela by Dennis (1970).
Specimen: Estado Aragua, Parque Nacional Henri Pittier, on hardwood, 25.IV.1998, L. Ryvarden 40756.

Dextrinocystis capitata (D.P. Rogers & Boquiren) Gilb. & M. Blackw., Mycotaxon 33:378, 1988.
Epithele capitata D.P. Rogers & Boquiren, Mycologia 63 (5): 942, 1971.
Tubulicium capitatum (D.P. Rogers & Boquiren) Burds. & Nakasone, Mycotaxon 17:265, 1983.
Basidiome resupinate, effused. Hymenophore smooth, or slightly pilose from the protruding cystidia. Hyphal system monomitic; hyphae thin-walled, up to 4 µm wide. Basal hyphae with incrusted branches, similar to lyocystidia, 10-20 µm long. Cystidia (lyocystidia), tapering to the apex, often basally branched, rooted, thick-walled with a narrow lumen, upper part somewhat capitate and strongly incrusted, dextrinoid, not dissolving in KOH. Basidia with four sterigmata, about 30 x 6 µm, with a basal clamp-connection. Spores cylindric, weakly allantoid, smooth, hyaline, variable in size, but generally 8-10 x 3-4(-4.5) µm.
Dextrinocystis is a monotypic genus and similar to the concept of *Tubulicium*, *Litschauerella*, and *Tubulicrinis*. The species was originally described from Florida and has also been reported from Colombia by Hjortstam and Ryvarden (2000).
Specimen: Estado Bolivar, Las Nieves, 12.VI.1995, on dead hardwood, L. Ryvarden 37795.

Dichostereum Pilát, Annls mycol. Berlin 24:223, 1926.
Hymenophore resupinate, smooth or grandinioid, usually dark. Hyphal system dimitic; hyphae with clamp-connections, hyaline or brown-yellowish. Dichohyphae generally numerous and dextrinoid, in some species dendrohyphidia also occur. Gloeocystidia in most cases sulphopositive. Basidia constricted, normally with four sterigmata. Spores verruculose, generally subglobose, strongly amyloid.
There are a great number of specimens gathered in Venezuela and from other countries in South America that obviously belong to the concept of *Dichostereum*, but only a few are reported here.

Dichostereum effuscatum (Cooke & Ellis) Boidin & Lanq., Mycotaxon 6:284, 1977.
Corticium effuscatum Cooke & Ellis, Grevillea 9:103, 1881.
Asterostromella effuscata (Cooke & Ellis) Bourdot & Galzin, Hym. de France p. 396, 1928.
Vararia effuscata (Cooke & Ellis) D.P. Rogers & H.S. Jacks., Farlowia 1:290, 1943.
Vararia effuscata (Cooke & Ellis) Boidin, Bull. Soc. Nat. Oyonnax 5:78, 1951. Superfluous combination.

This is an almost world-wide species, though rare. There is an illustration by John Eriksson in Hallenberg (1985).
Specimens: Estado Bolivar, Las Nieves, 12.VI.1995, L. Ryvarden 37791 and 37844/C; Estado Merida, Municipio Sucre, La Trampa, Monter del Burso, 2300 m, L. Ryvarden 43552.
Additional specimens: (as *Dichosterem* cfr. *orientale* Boidin & Lanq.) Estado Amazonas, Yutajé, L. Ryvarden 40505; (as *D.* cfr. *sordulentum* (Cooke & Massee) Boidin & Lanq.) Estado Bolivar, Las Nieves, L. Ryvarden 37632/B and 37848 and Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, Iturriaga 227.

Fibriciellum silvae-ryae J. Erikss. & Ryvarden, Corticiaceae North Eur. 3:375, 1975.
Basidiome resupinate, effused, fairly soft. Hymenophore practically smooth, continuous, pellicular, rarely somewhat tuberculate, fragile, whitish or when well developed with rose tints. Margin thinning out or sometimes fimbriate or with rhizomorphs. Hyphal system dimitic; generative hyphae thinwalled, 2-3 µm wide, with clamp-connections, skeletal hyphae (mainly as fibre-hyphae) in cords with individual hyphae thickwalled, 1.5-2.5(-4) µm wide, cyanophilous. Cystidia absent. Basidia cylindrical, 10-12 x 4-5 µm, with 4 sterigmata and a basal clamp-connection. Spores ellipsoid, smooth, slightly thick-walled, 3-4(-4.5) x (1.5-)2-2.5 µm, with a cyanophilous reaction.
Specimen: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on hardwood, 24.XI.1994, L. Ryvarden 35512. The specimen was previously reported by Hjortstam, Ryvarden & Iturriaga (2005).

Galzinia incrustans Parmasto, Eesti NSV Tead. Akad. Toim. Biol. 14: 225, 1965.
Nom. nov. for *Corticium incrustans* Höhn & Litsch., 1906; non *Corticium incrustans* Pers. 1796.
Basidiome resupinate, effused, thin, smooth, but discontinous when dried, more or less greyish to ochraceous. Hyphal system monomitic; hyphae with thin or somewhat thickened walls, 2.5-3.5 µm wide, richly branched, with clamps at all septa. Cystidia few or absent, thin-walled, slightly projecting above the basidia. Basidia more or less constricted, with intrabasidial repetition, about 15-20 x 4-5 µm, with 4 sterigmata and a basal clamp-connection. Spores allantoid, 4.5-6 x 1.5-2.5 µm, smooth, inamyloid, indextrinoid, acyanophilous.

Parmasto's *nom. nov*. is here accepted for a species originally described from Bosnia, probably on *Populus*. This seems to be the first record outside the temperate area.

Specimen: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on wood, 21.II.2000, L. Ryvarden 42242 and 42276/B (probably from the same locality if not the same trunk).

Gloeocystidiellum peroxydatum (Rick) Stalpers & Hjortstam, Mycotaxon 14:78, 1982.
Gloeocystidium peroxydatum Rick, Brotéria (Lisboa) Sér. trimest. Cienc. nat. 30:46, 1934.
Boidinia peroxydata (Rick) Hjortstam & Ryvarden, Acta Mycol. Sinica 7:79, 1988.
Basidiome resupinate, effused, about 200 µm thick, separable, slightly cracked. Hymenial surface even, cream to light brown or pale reddish. Margin indeterminate. Hyphal system monomitic. Hyphae straight and uniform, with slightly thickened walls, especially the sub-icular ones, 2.5-3(-4) µm wide. All septa without clamp-connections. Gloeocystidia frequent, terminal, somewhat swelling in KOH, turning bluish-black in sulphovanillin, subfusiform, generally 50-70 x 6-8 µm. Basidia subclavate, constricted, 15-25 x 4-5 µm, often with 1 or 2 adventitious septa after sporulation, with 4 sterigmata. Spores subglobose, warted to echinulate, 5 x 3.5-4 µm, with prominent apiculus, strongly amyloid.
Originally described from Brazil and neotypified by Stalpers & Hjortstam (1982). This is a little-known species and presumably not a species of *Gloeocystidiellum* s.s. or *Boidinia* s.s. It was reported from Venezuela by Liberta & Navas (1978) sub *Gloeocystidiellum sibiricum* Parmasto.
Specimen: Estado Amazonas, Yutajé, on deciduous wood, 12-19.VI.1997, L. Ryvarden 40362. The specimen has smaller spores than normal, about 4-4.25 µm long inclusive of warts.

Gloeocystidiellum cfr. **porosum** (Berk. & M.A.Curtis) Donk, Meded. Ned. Mycol. Ver. 18-20:156, 1931.
Corticium porosum Berk. & M.A. Curtis, Ann. Mag. Nat. Hist. 5, 3:211, 1879.
Gloeocystidium porosum (Berk. & M.A. Curtis) Wakef., in Bourdot & Galzin, Hym. France p. 253, 1928.
Brief description of the species s.s.: Basidiome, adnate, effused. Hymenophore smooth, white to creamish or when old pale ochraceous. Hyphal system monomitic; hyphae 2-3 µm diam., with clamp-connections. Gloeocystidia generally abundant, tubular, sinuous, 60-150 µm long and up to 15 µm wide in the middle part, in KOH mainly yellowish, with a strong sulphovanillin reaction. Other cystidial elements absent. Basidia 20-35 x 3-5 µm, with 4 sterigmata and a basal clamp-connection. Spores ellipsoid to subcylindrical, rugose, 4.5-6 x 2.5-3.5 µm, strongly amyloid.

The Venezuelan specimen differs slightly in having shorter gloeocystidia and somewhat more ellipsoid spores. The species was reported from Argentina by Greslebin (2002).
Specimen: Estado Bolivar, Gran Sabana forest, 1 km east of Estacion Aponwao, 1200 m. alt. 24.II.2000, T. Iturriaga & L. Ryvarden 42327.

Gloeodontia discolor (Berk. & M.A. Curtis) Boidin, Cah. Maboké 4 (1): 22, 1966.
Irpex discolor Berk. & M.A. Curtis, Grevillea 1:145, 1873.
Xylodon discolor (Berk. & M.A. Curtis) Kuntze, Rev. gen. plant. 3:541,1898.
Basidiome broadly effused, adnate, yellowish white to greyish orange, hydnoid, with 1-3 mm long aculei. Hyphal system dimitic; skeletal hyphae 2-4 µm diam., thick-walled, yellowish, some incrusted with hyaline crystals, clamp-connections absent; other hyphae 2-4 µm diam., thin-walled, almost hyaline, with clamp-connections at all septa. Gloeocystidia 35-70 x 6-10 µm, cylindrical to subulate, often with apical bead, thin-walled, hyaline, dark blue to black in sulphovanillin. Basidia cylindrical, hyaline, thin-walled, tapering at the base, 12-20 x 3.5-4 µm, with four sterigmata and a basal clamp-connection. Spores 3.5-4.5 (-5.5) x 2.5-3(-3.5) µm, ovoid, adaxially flattened, with a slight wall thickening, distinctly rugose and strongly amyloid.
This is a hydnoid species with amyloid and rugose spores. It has sulphopositive gloeocystidia, a dimitic hyphal system, and distinctive, incrusted hyphal ends. The species seems to be pantropical, but not previously reported from Venezuela. For further information about the distribution in North America, see Ginns & Lefebvre (1993).
Specimen: Estado Miranda, Tacata area, Rio Tacata, on hardwood, 14.VI.2003, L. Ryvarden 45660.

Gloeopeniophorella Rick**,** Brotéria (Lisboa) Sér. trimest. Cienc. nat. 3:47, 1934.
Generic type: *Gloeopeniophorella rubroflava* Rick
Dextrinocystidium Sheng H. Wu, Mycologia 87:888, 1995.
Basidiomes resupinate, effused, adnate. Hymenophore almost smooth to slightly tuberculate, generally ochraceous. Hyphal system monomitic; hyphae hyaline, thin-walled or with a slight wall thickening, without clamp-connections. Metuloids numerous, hyaline, moderately thick-walled, with or without dextrinoid reaction. Gloeocystidia few to numerous, thin-walled, with or without positive sulphovanillin reaction. Basidia narrowly clavate, with four sterigmata, without a basal clamp-connection. Spores more or less ellipsoid, distinctly rugose in Melzer's reagent, but sometimes smooth in KOH, amyloid.
The genus should be fairly easy to recognize with species having an almost

smooth hymenophore, hyphae without clamp-connections, both metuloids and gloeocystidia, and spores that are both rugose and amyloid. We are of the opinion that the dextrinoid reaction of the metuloids in *Dextrinocystidium* is not an important character for generic separation.

Key to *Gloeopeniophorella* species

1. Metuloids with dextrinoid reaction 2
1. Metuloids without dextrinoid reaction.....3

2. Spores 7-9 x 5-7.5 µm.....***G. sacrata***
2. Spores smaller 3.5-4.25 x 3-3.5 µm..... ***G. singularis***

3. Gloeocystidia negative in sulphovanillin, spores 4-5.5(-6) x 3.5-4.5 µm ..... ***G. rubroflava***
3. Gloeocystidia positive in sulphovanillin 4

4. Hymenophore smooth, spores 4-4.75 x 3-3.75 µm.....***G. laxa***
4. Hymenophore somewhat tuberculate, spores 4-5.5 x 2.5-3.5 µm ..... ***G. convolvens***

Gloeopeniophorella convolvens (P. Karst.) Boidin et al., Bull. trimest. Soc. mycol. Fr. 113:45, 1997.
Corticium convolvens P. Karst., Bidr. Känned. Finl. Nat. Folk 37: 148, 1882.
Peniophora convolvens (P. Karst.) P. Karst., Bidr. Känned. Finl. Nat. Folk 48: 424, 1889.
Peniophora convolvens (P. Karst.) Höhn. & Litsch., Sistzber. Akad. Wiss. Wien, Math.-nat. Kl., 115:1551, 1906. Superfluous combination.
Gloeocystidium convolvens (P. Karst.) Bourdot & Galzin, Bull. Soc. Mycol. France 28:356, 1913.
Gloeocystidiellum convolvens (P. Karst.) Donk, Fungus 26: 9, 1956.
Originally described from Finland and occurs mainly on coniferous wood in temperate areas. It was reported from Venezuela by Liberta & Navas (1978) and is also known from Africa.

Gloeopeniophorella laxa (Sheng H. Wu) Boidin et al., Bull. trimest. Soc. mycol. Fr. 113:46, 1997.
Gloeocystidiellum laxum Sheng H. Wu, Mycotaxon 58:37, 1996.
Known only from the type locality (Taiwan) and from Guadeloupe (Boidin, Lanquetin & Gilles, 1997).

Gloeopeniophorella rubroflava Rick, Brotéria (Lisboa) Sér. trimest. Cienc. at. 30:47, 1934.
Gloeocystidiellum rubroflavum (Rick) Hjortstam, Windahlia 23:2, 1998.
Lectotype: Brazil, S. Leopoldo, 1932, Fungi Rickiani 13485 (PACA), designated by Rick in Rambo (1959).
Basidiome resupinate, effused, adnate, somewhat membranaceous. Hymenophore more or less smooth or with protruding cystidia, ochraceous or sometimes with a pale rose tint. Hyphal system seemingly monomitic; hyphae hyaline, thin-walled or more commonly with a slight wall thickening, up to 4(-5) µm wide, without clamp-connections. Metuloids numerous, hyaline, moderately thick-walled, generally up to 30-50 µm long, non-dextrinoid. Gloeocystidia few, sinuose, thin-walled, up to 150 µm long and about 10-12 µm wide in the middle part, apparently without positive sulphovanillin reaction. Basidia narrowly clavate, about 20-35 x 4.5-5 µm, with four sterigmata, without a basal clamp-connection. Spores narrowly ellipsoid, rugose, 4-5.5(-6) x 3.5-4.5 µm, distinctly amyloid.
Specimens: Estado Bolivar, Parque Nacional Canaima, Gran Sabana, Carretera Paraupa, Kavanayan, 17. XI, 1994, L. Ryvarden 35243; Estado Bolivar, Las Nieves, 12.VI.1995, L. Ryvarden 37590; Estado Bolivar, Parque Nacional Canaima, Gran Sabana, 11.VI.2003, L. Ryvarden 45552.

Gloeopeniophorella sacrata (G. Cunn.) Hjortstam & Ryvarden **comb. nov.**
Basionym: *Peniophora sacrata* G. Cunn., Trans. R. Soc. New Zeal. 83:274, 1955.
Phanerochaete sacrata (G. Cunn.) Taylor, New Zeal. J. Agric. Res. 24:373, 1981.
Amylostereum sacratum (G. Cunn.) Burds., Mycolog. Memoir 10:51, 1985.
Gloeocystidiellum sacratum (G. Cunn.) Stalpers & P.K. Buchanan, New Zeal. J. Bot. 29:336, 1991.
Dextrinocystidium sacratum (G. Cunn.) Sheng H. Wu, Mycologia 87:889, 1995.
Description of the Venezuelan specimen: Basidiome resupinate, effused, closely adnate, 0.2-0.5(-1.0) mm thick. Hymenophore smooth, whitish, margin abrupt. Hyphal system monomitic; hyphae hyaline, thin-or moderately thick-walled, without clamp-connections. Gloeocystidia rare, more or less tubular, 20-40 x 4-6 µm, with a weak sulphovanillin reaction. Metuloids abundant, basally with a distinct dextrinoid reaction, up to 40-50 µm long. Basidia subclavate, hyaline, 25-30 x 6-7(-8) µm, basal clamp-connection lacking, with four sterigmata. Spores thin-walled, broadly ellipsoid, rugose, 7-9 x 5-7.5 µm, strongly amyloid.

Originally described from New Zealand and Cunningham (1963) reported it from Australia. The Venezuelan specimens are rather poor, but all have dextrinoid metuloids, amyloid spores, and lack clamp-connections.

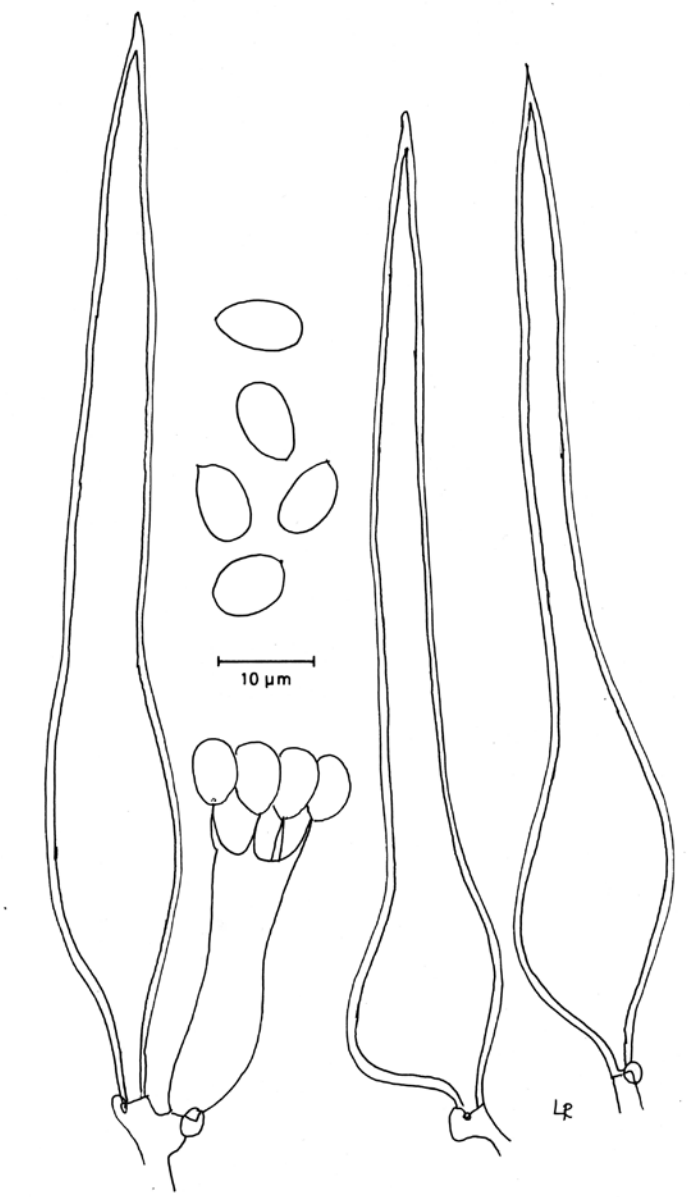

Fig. 2. *Hyphoderma acutatum.* Cystidia and basidiospores. From the holotype.

Specimens: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on wood, 14.IV.1999, L. Ryvarden 41448, 41455 (on a leaf), and 41459 (on wood).

Gloeopeniophorella singulare (Boidin et al.) Hjortstam & Ryvarden **comb. nov.**
Basionym: *Dextrinocystidium singulare* Boidin et al., Bull. trimest. Soc. mycol. Fr. 113:30, 1997.
Known only from the type locality (Ivory Coast) and seems to be extremely similar to *G. rubroflava*, but differs in having slightly smaller spores and gloeocystidia with sulphovanillin reaction.

Hyphoderma acutatum Hjortstam & Ryvarden **sp. nov.**
Species habitus Hyphoderma argillaceum*, sed differt cystidiis crassitunicatis et distincte subulatis. Cystidia 100-170 (-200) µm, basidia 25(-30) x 5(-6) µm, sporis tenuitunicatis, levibus, ellipsoidibus, 7-7.5(-8-9) x 4-4.5(-5) µm*
Holotype: Venezuela, Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on hardwood, 25.IV.1998, L. Ryvarden 40785 (O)
Paratypes (all from Venezuela): Estado Bolivar, Las Nieves, on dead hardwood, 12.VI.1995, L. Ryvarden 37637; ditto, L. Ryvarden 37838; Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on dead deciduous wood, 22.VI.1995, L. Ryvarden 38002; Estado Amazonas, Yutajé, 110 m alt., on dead deciduous wood, 12-19.IV.1997, L. Ryvarden 40348; Estado Aragua, Parque Nacional Henri Pittier, on hardwood, 25.IV.1998, L. Ryvarden 40771, 40785, 40818; Estado Amazonas, San Maria, 20 km east of Puerto Ayacucho, on a polypore, 17.IV.1999, L. Ryvarden 41482 (scant specimen, mixed with a *Botryobasidium* sp.); ditto, L. Ryvarden 41483 (O).
Basidiome resupinate, adnate, effused, fairly thin. Hymenophore smooth, but pilose by projected cystidia, whitish to ochraceous. Hyphal system monomitic; subiculum fairly dense, hyphae thin-walled, mainly 3-4 µm diam., with clamp-connections at all septa. Cystidia subulate, thick-walled, abundant, widened at the base, projecting, smooth or slightly incrusted, generally 100-170 µm long, but sometimes up to 200 µm, about 15-20 µm wide near the base. Basidia somewhat suburniform, constricted, generally 25(-30) x 5(-6) µm, with 4 sterigmata and basal clamp-connection. Spores thin-walled, smooth, ellipsoid, 7-7.5(-8-9) x 4-4.5(-5) µm.
Though similar to *Hyphoderma argillaceum* the new taxon should immediately be distinguishable by its thick-walled, subulate cystidia.

Hyphoderma gemmeum (D.P. Rogers) Donk, Fungus 27:15, 1957.
Peniophora gemmea D.P. Rogers, in Martin, Lloydia 7: 73, 1944.
This has previously been reported from Colombia (Hjortstam & Ryvarden 2000) and there are two specimens from Venezuela which also seem to belong to this species. It is, however, similar to *Hyphoderma argillaceum*, but has much more slender cystidia.
Specimens: Estado Miranda, Tacata area, Rio Tacata, 14.VI.2003, L. Ryvarden 45649 and 45653.

Hyphoderma granuliferum P. Roberts, Kew Bull. 55:814, 2000.
Originally described from Cameroon. In addition to the specimens reported by Hjortstam and Ryvarden (2005) the following have been examined: Estado Amazonas, Yutajé, on a polypore, 12-19.VI.1997, L. Ryvarden 40508; Estado Bolivar, Gran Sabana, Parque Nacional Canaima, on wood, 11.VI.2003, L. Ryvarden 45633 and 45595.

Hyphoderma rude (Bres.) Hjortstam & Ryvarden, Mycotaxon 10:275, 1980.
Odontia rudis Bres., Annls mycol. (Berlin)18:42, 1920.
Basidiome resupinate, effuse, adnate, hymenium mainly odontioid with small, slightly fimbriate conical aculei, usually less than 0.5 mm long, cream, margin similar in colour not or slightly determinate. Hyphal system monomitic; basal hyphae thick-walled, smooth, relatively long-celled. Subhymenial hyphae more thin-walled and with shorter cells. All hyphae with clamps and about 3-4 µm wide. Cystidia of two kinds: 1) tubular, terminal, obtuse, often enclosed in the texture and somewhat difficult to find, about 40-70 x 8-12 µm; 2) stephanocysts numerous to fairly few in some specimens, globose and in the middle with a denticulate collar, with a clamp-connections at the base, about 15 x 10 µm. Basidia terminal, more or less clavate, slightly constricted, 25-30 x 5-6 µm, with four sterigmata and with a basal clamp-connection. Spores thin-walled, smooth, ellipsoid, often with oil droplets in the protoplasm, usually 9-10 x 6 µm, inamyloid, indextrinoid, acyanophilous.
This species is easily recognized due to the ornamented basidiome and a microscopic similarity with *H. praetermissum* (P. Karst.) J. Erikss. & Å. Strid. The typical stephanocysts should also be of diagnostic value, but are few in some specimens. Originally described from Brazil and in its wide concept a pantropical species, previously reported from Venezuela by Hjortstam & Ryvarden (2005).
Additional specimens: Estado Bolivar, Gran Sabana, Parque Nacional Canaima, 11.VI. 2003, L. Ryvarden 45460, 45470, 45573/B; Estado Miranda, Tacata area, Rio Tacata, 14.VI.2003, L. Ryvarden 45701 and 45725

Hyphodermella cfr. **maunakeaensis** Gilb. & Hemmes, Fungal Diversity 6:53, 2001.
Description of the Venezuelan specimen: Basidiome adnate, effused, strictly resupinate; hymenophore slightly odontioid by protruding incrusted ends; hyphal system monomitic; hyphae hyaline, thin-walled, 2-4 µm wide, without clamp-connections; real cystidia absent, but with moderately narrow and smooth hyphal ends between the basidia and more or less crowded and incrusted ends, projecting in bundles. Basidia sometimes distinctly stalked, 20-25 x 5-7 µm, with four sterigmata and without a basal clamp-connection. Spores ellipsoid, hyaline, smooth and thin-walled, 7-8 x 4.5-5 µm, inamyloid, acyanophilous.
The original specimens of this species have not been examined, but according to the description it seems that the species belongs in *Hyphodermella*.
Specimen: Estado Aragua, Parque Nacional Henri Pittier, on hardwood, 25.IV.1998, L. Ryvarden 40774.

Hyphodontia arguta (Fr.) J. Erikss., Symb. bot. ups. 16:104, 1958.
Hydnum argutum Fr., Syst. Mycol. 1:424, 1821.
Odontia arguta (Fr.) Quél., Fl. Mycol. France p. 435, 1888.
Kneiffia arguta (Fr.:Fr.) P. Karst., Finl. Basidsv. p. 149, 1899.
Kneiffiella arguta (Fr.) Jülich & Stalpers, Verh. Kon. Ned. Akad. Wet., Afd. Natuurk., Tweede Reeks 74:129, 1980.
Grandinia arguta (Fr.) Jülich, Int. J. Mycol. Lichenol. 1:35, 1982.
Basidiome resupinate, effuse, adnate, whitish to ochraceous. Hymenophore odontioid with almost conical aculei 0.5-2 mm long. Subiculum usually thin, subhymenium usually well developed. Hyphal system monomitic; hyphae 2-3 µm wide, thin-walled or somewhat thickening, all hyphae with clamp-connections, often cyanophilous and sometimes with a slight dextrinoid reaction. Cystidia of two kinds: 1) capitate, projecting, 40-75 µm long and about 5-7 µm wide, incrusted; 2) lagenocystidia, about 8-10(-20) µm long, but variable, apically incrusted. Basidia more or less clavate, suburniform, 15-18 x 3.5-5 µm with four sterigmata and a basal clamp-connection. Spores ellipsoid, thin-walled, smooth, 4.5-6 x 3.5-4 µm, inamyloid.
This is obviously a rare species in the north of South America. Typical specimens have been recorded twice, viz.: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, 14.IV.1999, L. Ryvarden 41380; same location, 21.II.2000, L. Ryvarden 42258.

Hyphodontia pallidula (Bres.) J. Erikss., Symb. bot. ups. 16:104, 1958.
Gonatobotrys pallidula Bres., Annls mycol. (Berlin) 1:127, 1903.
Gloeocystidium pallidulum (Bres.) Höhn. & Litsch., Österr. Bot. Zeitschr.

58:471, 1908.
Gloeocystidium pallidulum (Bres.) Höhn. & Litsch., Sitzber. Akad. Wiss. Wien, Math.-nat. Kl. 117:1096, 1908.
Peniophora pallidula (Bres.) Bres., in Bourdot & Galzin, Bull. trimest. Soc. Mycol. France 28: 390, 1912.
Kneiffiella pallidula (Bres.) Jülich & J.A. Stalpers, Verh. Kon. Ned. Akad. Wet., Afd. Natuurk., Tweede Reeks 74:131, 1980.
Grandinia pallidula (Bres.) Jülich, Int. J. Mycol. Lichenol. 1:36, 1982.
Gloeocystidium oleosum Höhn. & Litsch., Sitzber. Akad. Wiss. Wien, Math.-nat. Kl. 116:827, 1907.
Basidiome resupinate, adnate, fairly thin, generally smooth to finely pilose by projecting cystidia, whitish to pale ochraceous. Hyphae thin-walled, 2-3 µm wide, with clamp-connections. Cystidia numerous, with one or several clamp-connections, apically subcapitate, 80-120 long and up to 6 µm wide and usually with resinous incrustation. Basidia with suburniform constriction, often slightly thickened in the basal part, 10-18 x 3-4.5 µm, with 4 sterigmata and with basal clamp-connection. Spores ellipsoid, ovoid or subglobose, thinwalled, smooth, 3.5-4.5 (-5.5) x 2-2.5(-3) µm.
This species has not previously been reported from South America, but is known from the USA (Florida) (Nakasone, 1990). It is similar to the almost cosmopolitan species *H. alutaria*, but separated by smaller spores and few to no lagenocystidia.
Specimen: Estado Bolivar, Gran Sabana, Parque Nacional Canaima, 11.VI.2003, L. Ryvarden 45571.

Hypochnicium erikssonii Hallenb. & Hjortstam, Windahlia 18:44, 1990.
Brief description of Venezuelan specimen: Basidiome resupinate, closely adnate, fairly thin. Hymenophore almost smooth and whitish. Hyphae thin-walled or with slight wall thickening, in a relatively open tissue, hyaline, 4-5(-7) µm wide, with clamp-connections. Cystidia about 100-150 µm long and 6-12 µm wide, cylindrical, obtuse, hyaline, rarely with adventitious septa. Spores almost globose, smooth, becoming thick-walled, 6-7 µm diam.
This was described as a new species to replace *H. sphaerosporum* (Höhn. & Litsch.) J. Erikss. which is a synonym of *H. punctulatum* (Cooke) J. Erikss. It has previously been reported with some doubt from Argentina by Greslebin (2002). The specimen below is the first from the northern part of South America.
Specimen: Estado Bolivar, Gran Sabana, Parque Nacional Canaima, on hardwood, 11.VI.2003, L. Ryvarden 45619.

Kneiffiella cfr. **abieticola** (Bourdot & Galzin) Jülich & J.A. Stalpers, Verh. Kon. Ned. Akad. Wet., Afd. Natuurk., Tweede Reeks 74:130, 1980.
Odontia barba-jovis ssp. *abieticola* Bourdot & Galzin, Hym. France p. 426, 1928.
Odontia abieticola (Bourdot & Galzin) S. Lundell, Fungi exs. suec. no. 738, 1939.
Hyphodontia abieticola (Bourdot & Galzin) J. Erikss., Symb. bot. ups. 16:104, 1958.
Grandinia abieticola (Bourdot & Galzin) Jülich, Int. J. Mycol. Lichenol. 1:35, 1982.
Description mainly from Eriksson & Ryvarden (1976): Basidiome resupinate, effuse, adnate. Hymenophore at first pale, then ochraceous, hydnoid, with fairly small aculei. Hyphal system monomitic; subicular hyphae distinct, 2.5-3 µm diam., thin-walled or with a slight wall thickening, subhymenial hyphae thin-walled, all hyphae with clamp-connections. Cystidia in general numerous, 100-200 µm long and 4-6 µm wide, especially in the apical part of the aculei, tubular, often sinuous, with an obtuse tip, thick-walled. Basidia clavate, somewhat constricted, with four sterigmata and a basal clamp-connection. Spores thin-walled, smooth, ellipsoid, 5-6 x 3-3.5 µm, inamyloid, indextrinoid, and acyanophilous. The specimens below seem to match this species. The spores coincide with *K. abieticola*, but in other characteristics it is reminiscent of *K. barba-jovis* (Bull.: Fr.) P. Karst. Both species are rarely seen from tropical areas, but it should be noted that *Kneiffiella crassa* (Rick) Hjortstam & Ryvarden is similar, but clamp-connections are wanting or only occasional on the basal hyphae and on the projecting hyphae in the aculei.
Specimens: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, 14.IV.1999, L. Ryvarden 41424, 41425/B, and 41430.

Litschauerella cfr. **clematitis** (Bourdot & Galzin) J. Erikss. & Ryvarden, Corticiaceae North Eur. 4: 839, 1976.
Peniophora clematitis Bourdot & Galzin, Bull. trimest. Soc. mycol. Fr. 28:383, 1913.
Xenasma clematitis (Bourdot & Galzin) Liberta, Mycologia 52:897, 1962.
Tubulicium clematitis (Bourdot & Galzin) Oberw., Sydowia, Ann. Mycol. Ser. II, 19:56, 1965.
A somewhat doubtful, tiny and also a mixed specimen, but part of it represents a species with typical cystidia for *Litschauerella*. The spores are mainly globoid, evidently smooth and up to 4-4.5 x 3.75-4 µm. The species has been reported from Colombia by Hjortstam & Ryvarden (1997) and *Litschauerella* sp.aff. *abietis* was mentioned from Argentina by Gomez (1972).

Specimen: Estado Aragua, Parque Nacional Henri Pittier, on hardwood, 25.IV.1998, L. Ryvarden 40823.

Lopharia cinerascens (Schwein.) G.H. Cunn., Trans. Roy. Soc. N. Z. 83:622, 1956.
Thelephora cinerascens Schwein., Trans. Am. Philos. Soc. N.S. 4:167, 1822.
Stereum cinerascens (Schwein.) Massee, Journ. Linn. Soc., Bot. 27:179, 1890.
Lloydella cinerascens (Schwein.) Bres., Mycol. Writ. 1:51, 1901.
Basidiome resupinate to somewhat reflexed, up to 1 mm thick, fairly tough when fresh. Hymenophore smooth, generally pale coloured to light brown. Hyphal system dimitic; skeletal hyphae 3-6 µm wide, thick-walled, hyaline, unbranched, straight to sinuous, without clamp-connections; other hyphae hyaline, smooth or sparsely incrusted, 2-4 µm wide, clamp-connections scattered and often difficult to find. Cystidia large, thick-walled, acute, strongly incrusted, embedded or commonly projecting above the basidia, 50-160 (200) x 12-25(-30) µm, hyaline to pale yellowish brown with age, arising from subhymenial hyphae or from skeletal hyphae, young cystidia sharply pointed and often smooth. Basidia clavate with a tapering base and with four sterigmata, 40-55 x 8-10 µm, with a basal clamp-connection. Spores cylindrical, smooth, thin-walled, variable in size, 10-16 x 6-7.5 µm.
A well known species in both North and South America and probably from all continents. Not previously reported from Venezuela. For further details see Hjortstam & Ryvarden (1990).
Specimens: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, 14.IV.1999, L. Ryvarden 41314 (a tiny specimen); ditto, 21.I.2000, L. Ryvarden 42272.

Megalocystidium chelidonium (Pat.) Boidin et al., Bull. trimest. Soc. mycol. Fr. 113:62, 1997.
Corticium chelidonium Pat., Bull. Soc. Mycol. France 16:180, 1900.
Stereum chelidonium (Pat.) Höhn. & Litsch., Sitzber. Akad. Wiss. Wien, Math.-nat. Kl. 116:741, 1907.
Vesiculomyces chelidonium (Pat.) Boidin & Lanq., Mycotaxon 16:493, 1983.
Basidiome resupinate, closely adnate, generally 200-300 µm thick. Hymenophore smooth or slightly tuberculate, ochraceous to sordid brown or in some specimens yellowish. Margin abrupt or more commonly fimbriate. Subiculum pale yellow to whitish. Hyphal system monomitic; all hyphae with clamp connections, thin-walled or with a slight wall thickening, 3-4 µm wide, interwoven and arranged in a dense layer. Gloeocystidia usually numerous, in the texture often vesicular and up to 20 µm wide, but more commonly projecting above

the basidia, thin-walled or with a slight wall thickening, with yellowish content (KOH) and a strong (bluish) sulphovanillin reaction, 80-100 x 8-12 µm. Basidia clavate, 25-35 x 5-7(-9) µm, with four sterigmata and a basal clamp connection. Spores ellipsoid or narrowly ellipsoid, hyaline, thin-walled, smooth, 8-11(-13) x 4.5-5(-6) µm, distinctly amyloid.
This species was reported from Venezuela (Estado Miranda) by Hjortstam, Ryvarden & Iturriaga (2005).
Additional Specimens: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, 21.II.2000, L. Ryvarden 42245; Estado Bolivar, Gran Sabana, 1 km east of Estacion Aponwao, 1200 alt., 24.II.2000, T. Iturriaga & L. Ryvarden, L. Ryvarden 42364/d; Estado Miranda, Tacata area, Rio Tacata, on hardwood, 14.VI.2003, L. Ryvarden 45705.

Mycoacia cfr. **austro-occidentalis** Canf., in Gilbertson and Burdsall, Mycotaxon 3:513, 1976.
Brief description of the species: Basidiome resupinate, adnate, soft and somewhat brittle. Hymenophore hydnoid, ochraceous, with smooth and conical aculei, variable in size, 2-4 per mm and about 1-1.5(-2) mm long. Subiculum distinct, fairly thin, white. Hyphal system monomitic; hyphae thin-walled or with a slight wall thickening, hyaline, 3-4 µm wide, strongly incrusted especially in the inner part of the aculei, all hyphae with clamp-connections. Cystidia absent. Basidia 20-30 µm long, with four sterigmata and a basal clamp-connection. Spores ellipsoid to almost globoid, thin-walled, hyaline, 4-4.5 x 2.75-3.5(-3.75) µm.
The species is previously known only from the type (USA, Arizona) and seems not to belong to the narrow concept of *Mycoacia* which is typified with *Hydnum fuscoatrum* Fr.:Fr. The somewhat soft basidiome points somewhat to the generic concept of *Ceraceomyces*. In the Venezuelan specimen the spores are somewhat smaller and perhaps it constitutes a closely related species.
Specimens: USA, Arizona, Pima Co., on *Prosopis juliflora*, R.L. Gilbertson 10501, holotype (CFMR) and isotype (O); Venezuela, Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on bark, 21.II.2000, L. Ryvarden 42269.

Nodotia gomezii (Lopez & J.E. Wright) Hjortstam & Ryvarden, Synopsis Fungorum 18:18, 2004.
Hypochnicium gomezii Lopez & J.E. Wright, Mycotaxon 23:439, 1985.
This species has been reported with some doubt from Venezuela and other countries by Hjortstam and Ryvarden (2004). The species is closely related to *Nodotia lyndoniae* (D.A. Reid) Hjortstam & Ryvarden described from Australia and also known from Burundi, Kenya, Tanzania, and New Zealand. *Nodotia*

gomezii is only recorded from South America and has somewhat smaller spores (6-9 x 5.5-6.5 µm compared with 7-10 x 5.5-6.5 µm in *N. lyndoniae*). There are additional specimens from South America, Africa, and Australia which do not agree with either of these species, particularly in spore size.
Specimen: Estado Bolivar, Gran Sabana, Parque Nacional Canaima, on hardwood, 11.VI.2003, L. Ryvarden 45573/C. This is a fairly scant specimen, but seems to conform well to the concept.

Odontiopsis ambigua (Berk. & Broome) Hjortstam, Mycotaxon 28:35, 1987.
Hydnum ambiguum Berk. & Broome, J. Linn. Soc. Bot. 14: 60, 1875.
Odontiopsis hyphodontina Hjortstam & Ryvarden, Mycotaxon 12:180, 1980.
Pteridomyces sphaericosporus Boidin et al., Mycotaxon 16:490, 1983.
Basidiome resupinate, effuse, adnate, somewhat loosening from the substrate, irregularly odontioid, soft, light ochraceous, aculei fimbriate, crowded; margin indeterminate. Hyphal system monomitic; basal hyphae hyaline, in KOH up to 5 µm wide, in cotton-blue generally 3.5-4 µm, with clamp-connections. Subhymenial hyphae short-celled, slightly thickened or swelling in KOH, c. 4.5(-5) µm wide. Cystidia absent, but with projecting and incrusted hyphae, apically in the aculei. Basidia short-clavate, mostly 12-15 x 5 µm, with 4 sterigmata. Spores smooth, thin-walled or when mature with a slight wall thickening, weakly cyanophilous, globose to rarely subglobose, in general 4-4.5 µm or 5 x 4.5 µm, inamyloid, indextrinoid.
Originally described from Sri Lanka, also known from Tanzania as *Odontiopsis hyphodontina* Hjortstam & Ryvarden, and reported from Cameroon by Roberts (2000). A specimen from Brazil seems doubtful. It is otherwise known from Argentina (Hjortstam & Ryvarden, 1986). *Pteridomyces sphaericosporus* Boidin et al. seems to be the same (Hjortstam, 1991).
Specimens: Estado Amazonas, Yutajé, on dead deciduous wood, 12-19.IV.1997, L. Ryvarden 40594; Estado Aragua, Parque Nacional Henri Pittier, on hardwood, 25.IV.1998, L. Ryvarden 40764 and 40828.

Parvobasidium cretatum (Bourdot & Galzin) Jülich, Persoonia 8:302, 1975.
Gloeocystidium cretatum Bourdot & Galzin, Bull. Soc. Mycol. Fr. 28: 371, 1913.
Description from Venezuelan specimens: Basidiome pellicular, thin, detachable, discontinous. Hymenophore greyish, smooth, cracking. Subiculum thin or almost absent, consisting of narrow, fairly straight hyphae, strongly incrusted with small crystals at least when dried or with age. Hyphal system monomitic; hyphae thin-walled, (1.5-)2-2.5(-3) µm wide, some strongly incrusted, all hyphae with clamp-connections. Gloeocystidia abundant, of subhymenial origin, thin-walled, hyaline, up to 60 µm long and 6-8 µm wide near the base, with refract-

ing contents. Basidia short, about 15 x 4 µm, with four sterigmata and a basal clamp-connection. Spores narrowly ellipsoid to cylindrical, smooth, thin-walled, 4-4.5(-4.75) x 2-2.5(-2.75), with a small but prominent apiculus, inamyloid, indextrinoid and acyanophilous.
All specimens below are determined with some doubt as *P. cretatum*. They have almost the same micromorphology, but those from Venezuela are from wood, whereas different kinds of ferns are the normal substrata. There are, however, two other species which should be considered: *P. lianacola* (G. Cunn.) J.A. Stalpers and possibly also *Corticium pteridophilum* G. Cunn., both described from New Zealand. The first one grows on *Metrosideros* and the latter on *Cyathea*. Both species are apparently known only from type collections.
Specimens: Estado Bolivar, Las Nieves, on dead hardwood, 12.VI.1995, L. Ryvarden 37871 and 37941.
Additional specimens from South America: Brazil, São Paulo, Paraiba, Campos do Jordão, Pqe Estados de Campos do Jordão, on *Dicksonia* sp., 27-28 Jan. 1987, D.N. Pegler, K. Hjortstam & L. Ryvarden, Hjortstam 16625 and 16626, filed as *Parvobasidium athelioides* Hjortstam in herb. (K).

Peniophora pruinata (Berk. & M.A.Curtis) Burt, Ann. Mo. Bot. Gard. 12:340, 1926. *Stereum pruinatum* Berk. & M.A. Curtis, Journ. Linn. Soc. Bot. 10:332, 1868.
Description from the holotype (Cuba, on logs in woods and fields, January, C. Wright 193, K): Basidiome resupinate, closely adnate, smooth, subiculum distinct, 1-1.5 mm thick, greyish-brown, stratified. Hymenophore dark grey to somewhat bluish black or brownish black. Hyphal system monomitic; basal hyphae brownish, 4-5 µm wide, somewhat swelling in KOH, other hyphae more or less hyaline. All hyphae without clamp-connections. Gloeocystidia not seen. Metuloids (30-)35-40 µm long, 10-15 µm in the middle part, basally brownish. Basidia narrowly clavate, 30-40 x 4.5-6 µm, without a basal clamp-connection, with four sterigmata. Spores subglobose to ellipsoid, thin-walled, smooth, hyaline, (4.5-)5-6 x 3.5-4 µm.
Originally described from Cuba, and reported by Burt (1926) from Florida, Mexico, Puerto Rico and Jamaica. From Venezuela there are at least three specimens which we regard as fairly closely related or the same.
Specimens: Estado Bolivar, Las Nieves, on dead hardwood, 12.VI.1995, L. Ryvarden 37684; Estado Bolivar, Gran Sabana, 1 km east of Estacion Aponwao, 1200 m. alt., 24.II.2000, T. Iturriaga & L. Ryvarden 42401; Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on dead deciduous wood, 22.VI.1995, L. Ryvarden 37988/B and 38001;

Peniophora cfr. **tephra** (Berk. & M.A. Curtis) Cooke, Grevillea 8: 20, 1879.
Corticium tephrum Berk. & M.A. Curtis, J. Linn. Soc. Bot. 10: 336, 1868.
Lectotype: Cuba, Wright 539 (FH), designated by Burt (1926). Isolectotype: (K).
This species was originally described from two different fungi, Wright 539 and Wright 546. The latter is a species of *Dendrophora*, evidently the same as *Dendrophora albobadia* (Schwein.:Fr.) Chamuris. The isolectotype in Kew, clearly shows a *Peniophora* with pale brown metuloids and hyphae without clamp-connections. However, basidia and spores were not observed in the type though Burt (1926) described the latter as considerably shorter (5 x 2.5-3 µm) than in the specimen from Venezuela. He also described the cystidia as "not colored", but most of the cystidia (metuloids) in the lectotype are at least pale brown.
The specimen described below is undoubtedly a species of *Peniophora* s.s. and at present we prefer to place it near *P. tephra*. The distribution of *P. tephra* is unknown, but Burt (1926) gave Mexico, Cuba, Puerto Rico, and Bermuda.
Description of specimen from Venezuela: Basidiome resupinate, closely attached to the substratum, 0.1-0.2 mm thick. Hymenophore smooth, pale chocolate-brown, margin undifferentiated. Hyphal system monomitic; subicular hyphae densely packed, thin to fairly thick-walled, (2.5-)3-5 µm wide, pigmented pale brown. Subhymenial hyphae difficult to discern, apparently hyaline, thin-walled, 2-3 µm wide. All hyphae without clamp-connections. Metuloids numerous, when immature semihyaline, thick-walled, then pale brown to dark brown in KOH, normally about 40-50 µm long and 6-7 µm wide below the incrusted part. Gloeocystidia apparently occur, thin-walled and 40-50 µm long, with no sulphovanillin reaction. Basidia subclavate, thin-walled, about 25 x 5 µm, with four sterigmata, clamp-connections not observed. Spores in the specimen few, ellipsoid, smooth, thin-walled, hyaline, (9-13(-14) x 4-4.5 µm, inamyloid.
Specimen: Estado Bolivar, Gran Sabana, forest, 1 km east of Estacion Aponwao, 1200 m.alt., on wood (bamboo?), 24.II.2000, L. Ryvarden & T. Iturriaga 42371.

Phlebiella palmicola Hjortstam & Ryvarden **sp. nov.**
Species Phlebiella insperata *affinis et valde similis sed differt basidiis 6-8(-10) µm longis et sporis (4-)4.5-4.75(-5) x 2.25-2.75 µm.*
Holotype: Venezuela, Estado Miranda, Tacata area, Rio Tacata, on palm, L. Ryvarden 45719 (O). Paratype: ditto, L. Ryvarden 45722, Hjm Priv. Herb.
Basidiome resupinate, thin, closely adnate, crustaceous. Hymenophore smooth, almost white. Hyphal system monomitic; hyphae thin-walled, forming a very thin tissue, with clamp-connections, straight or in the subhymenium short-celled and somewhat inflated, about 1.5-2 µm wide. Basidia short, indistinctly pleural, 6-8(-10) x 4-4.5 µm, with four sterigmata and provided with a basal clamp-connection. Spores subcylindrical, adaxial side slightly concave, possibly warted

throughout, or with fewer warts on the ventral side, (4-)4.5-4.75(-5) x 2.25-2.75 µm long inclusive of warts, inamyloid, indextrinoid, acyanophilous.
Remarks. This new taxon is closest to *Phlebiella insperata* (H.S. Jacks.) Oberw., but is distinguished by having shorter basidia and slightly smaller spores. In the latter species the spores are normally up to 6 µm long and 3 µm wide. *Phlebiella californica* (Liberta) K.H. Larss. & Hjortstam also seems to be closely related, but has spores with an indistinctly suprahilar depression and which are generally 5.5-7 µm long.

Phlebiella tulasnelloidea (Höhn. & Litsch.) Ginns & Lefebvre, Mycol. Mem 19:126, 1993.
Corticium tulasnelloideum Höhn. & Litsch., Sitzber. Akad. Wiss. Wien, Math.-nat. Kl. 117:1118, 1908.
Hypochnus tulasnelloideus (Höhn. & Litsch.) Rea, Trans. Br. Mycol. Soc. 12: 222, 1927.
Tomentella tulasnelloidea (Höhn. & Litsch.) Skovst., Compt. Rend. Travaux. Lab. Carlsberg, Ser. Physiol. 25:14, 1950.
Xenasma tulasnelloidea (Höhn. & Litsch.) Donk, Fungus 27:26, 1957.
Xenasmatella tulasnelloidea (Höhn. & Litsch.) Oberw., Sydowia, Ann. Mycol. Ser. II, 19:34, 1965 (not validly published, reference not cited).
Phlebiella tulasnelloidea (Höhn. & Litsch.) Oberw., Bibl. Mycol. 61:343, 1977 (invalid, page number lacking).
Xenasmatella tulasnelloidea (Höhn. & Litsch.) Oberw. ex Jülich, Persoonia 10:335, 1979.
Phlebiella tulasnelloidea (Höhn.& Litsch.) Ginns & Lefebvre, Mycol. Mem 19:126. 1993.
Basidiome resupinate, effuse, closely adnate, thin to moderately thick, approximately 40-50 µm, smooth, thick specimens often cracking, usually greyish blue, but also greyish white or even pale ochraceous. Hyphal system monomitic, hyphae thin-walled, 2-2.5 µm wide, rather straight, other hyphae intermingled, conglutinated and strongly gelatinized, often irregularly inflated, all hyphae with clamp-connections. Basidia pleural, generally 10-18 x 6-8 µm, with 4 sterigmata and a basal clamp-connection. Spores subglobose to ellipsoid, warted throughout, adaxial side concave with a distinct suprahilar depression, 6-6.5(-7) x 4.5(-5) µm.
A somewhat variable species and in its broad concept with a pantropical distribution. First reported from Venezuela by Liberta & Navas (1978)
Additional specimens from Venezuela: Estado Bolivar, Gran Sabana, 1 km east of Estacion Aponwao, 1200 alt. 24.II.2000, L. Ryvarden & T. Iturriaga, L. Ryvarden 42367; Estado Bolivar, Gran Sabana, Parque Nacional Canaima, 11.VI.2003, L. Ryvarden 45618.

Key to tropical species of *Phlebiella*

1. Basidia with more than 4, mainly 6 sterigmata, spores about 4.5 x 2.5 µm. Reunion. Possibly near *Phlebiella* .....***Xenosperma pravum*** Boidin & Gilles
1. Basidia normally with 4 sterigmata 2

2. Basidiomes brittle and mainly with anastomosing threads, negative or positive with KOH and then turning bluish, blackish or reddish **3**
2. Basidiomes otherwise, usually crustaceous, no colour reaction with KOH **5**

3. Basidiome negative with KOH, spores 6-7 x 4-4.5 µm. Argentina (aff.) .....***P. christiansenii*** (Parmasto) K.H. Larss. & Hjortstam.
3. Basidiomes positive with KOH **4**

4. Basidiome normally consisting of threads and violaceous with KOH, spores variable, 4.5-7 x 4-4.5 µm. In its wide sense a cosmopolitan species .....***P. vaga*** (Fr.) P.Karst.
4. Basidiome bluish-black to cinnamon, spores 4.5-5 x 2.5-3.5 µm. Originally described from USA (Florida) and possibly from Brazil .....***P. cinnamomea*** (Burds.& Nakasone) Hjortstam.

5. Spores with a marked suprahilar depression near the apiculus. Spores somewhat globoid 6-7 x 4.5-5 µm, a variable species .....***P. tulasnelloidea*** (Note *P. athelioidea* N. Maek. described from Japan with small spores (4.5-)5-5.5(-6) x 4-4.5 µm) and *P. nasti* Boidin & Gilles from Reunion, spores 4.5-5.2 x 4-4.5 µm.
5. Spores without or with an indistinct depression **6**

6. Spores almost globose.....**7**
6. Spores ellipsoid-subcylindrical **8**

7. Spores almost globose, thick-walled, 5-6.5 µm diam. Malawi, Ethiopia ***P. ardosiaca*** (Bourdot & Galzin) K.H. Larss. & Hjortstam.
7. Spores smaller, 4-4.5(-5) µm, Venezuela ..***P. globigera*** Hjortstam & Ryvarden

8. Spores 5.5-7 x 2.8-3.2 µm, warted throughout. Known from California and possibly from Colombia ***P. californica*** (Liberta) K.H. Larss. & Hjortstam
8. Spores smaller, 4.5-4.75 x 2.25-2.75 µm, possibly warted throughout ***P. palmicola*** (Note *P. romellii* (Hjortstam) K.H. Larss. & Hjortstam described from Sweden which has longer spores (6-5-7.5 µm) and lacks warts on ventral side).

Phlyctibasidium polyporoideum (Berk. & M.A.Curtis) Jülich, Proc. K. Ned. Akad. Wet. (C) 77 (2):154, 1974.
Corticium polyporoideum Berk. & M.A.Curtis, Grevillea 1 (12):177, 1873.
Coniophora polyporoidea (Berk. & M.A.Curtis) Burt, Ann. Mo. Bot. Gard. 4:247, 1917.
Hypochnus polyporoideus (Berk. & M.A. Curtis) Overh., Mycologia 30 (3):275, 1938.
Cristella polyporoidea (Berk. & M.A. Curtis) Donk, Fungus 27:20, 1957.
Trechispora polyporoidea (Berk. & M.A.Curtis) Liberta, Taxon 15:319, 1966.
Ramaricium polyporoideum (Berk. & M.A. Curtis) Ginns, Bot. Notis. 132:98, 1979.
Corticium muscigenum Berk. & Broome, J. Linn. Soc. Bot. 14:71, 1873.
Basidiome effused, up to 0.5 mm thick, membranous. Hymenophore pale greyish or with a lightly yellowish tint, often cracking. Subiculum whitish. Margin often distinct, 1-5 mm wide, whitish, fimbriate, cordons often present, whitish to pale yellow-brown. Hyphal system monomitic; subicular hyphae normally 2.5-5 µm, thin-to thick-walled, hyaline, subhymenial hyphae thin-walled, narrower, all hyphae with clamp-connections, more or less covered with small warts, possibly with a light cyanophilous reaction. Cystidia absent, but with hyphal ends between the basidia. Basidia pedunculate to hooked, 25-50 x 7-10 µm, basally often somewhat warty, with four sterigmata and a basal clamp-connection. Spores variable, mainly broadly ellipsoid, thin to moderately thick-walled, in KOH pale yellow, distinctly warted or with short spines, 7-9 x 5-6 µm, at least the warts cyanophilous.
This is a pantropical species and has also been reported from USA (Burdsall, 1971) and Canada (Ginns, 1979). It should be easily recognized by the fairly large, greyish-yellow basidiome, basidia with hooked base, and warted to echinulate, pale yellowish (in KOH) spores.
Specimens: USA, Alabama, Peters 4559, holotype of *Corticium polyporoideum* (K); Sri Lanka, Habgalla, Feb. 1868, Thwaites 549, Herb. Berk. 3963, holotype of *Corticium muscigenum* (K); Brazil, São Paulo, Campinas, Moji-Guaçu, Fazenda Campininha, on wood, 29-30.I.1987, D.N. Pegler, K. Hjortstam & L. Ryvarden, L. Ryvarden 24521; Estado Bolivar, Gran Sabana, 1 km east of Estacion Aponwao, 1200 m. alt., 24.II.2000, L. Ryvarden 42333.

Radulodon Ryvarden, Can. J. Bot. 50:2073, 1972.
Generic type: *Radulodon americanus* Ryvarden
Basidiomes resupinate, usually pale, effused, adnate, hydnoid, aculei usually 1-3 mm long, but in some species up to 15 µm long or more, cylindrical or flattened. Subiculum pale, mainly thin. Hyphal system monomitic; hyphae thin-walled or

with a slight wall thickening, all hyphae with clamp-connections. Cystidia lacking or present, thin-walled, more or less tubular. Basidia with four sterigmata and a basal clamp-connection. Spores globose to subglobose, smooth, moderately thick-walled, rarely thin-walled, inamyloid, indextrinoid, acyanophilous.

The generic circumscription is interpreted in various ways. Originally the genus was described as monomitic and this was followed by Stalpers (1998), but Nakasone (2001) described the hyphal system as dimitic since it included microbinding hyphae. *R. casearius* (Morgan) Ryvarden (not known from South America) was found by Nakasone (2001) to have clamp-connections in contradiction to Ryvarden (1972) and Gilbertson (1964).

The South American distribution of *Radulodon* is somewhat unclear and only three species are known viz.: *R. americanus* Ryvarden (possibly from Brazil), *R. venustus* Hjortstam & Ryvarden (Brazil and Colombia) and the new species below.

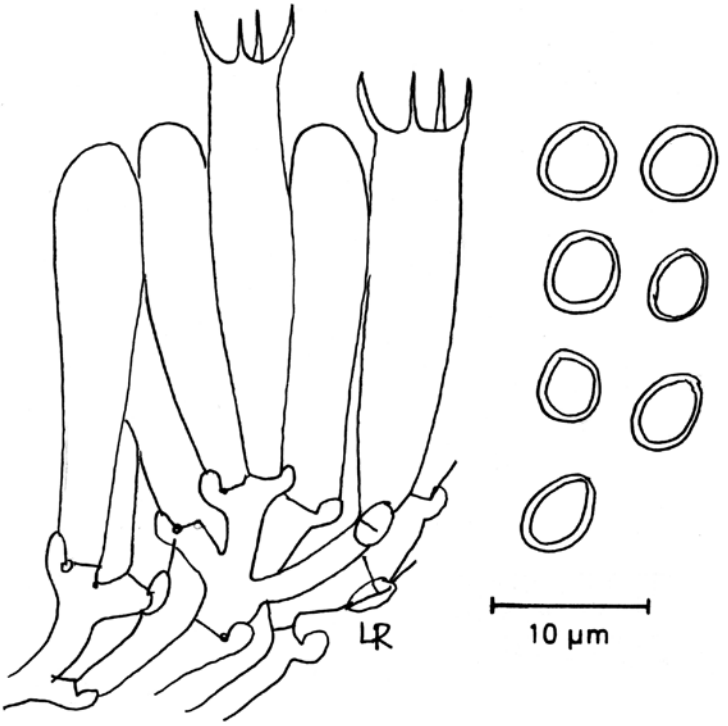

Fig. 3. *Radulodon revolubilis*. Part of hymenium and basidiospores. From the holotype.

Radulodon revolubilis Hjortstam & Ryvarden **sp. nov.** **Fig. 3**
Basidioma resupinatum, distincte aculeatum vel irpicoideum; aculei circiter 1-3 mm longi, simplicis vel aggregate, complanatis. Margine plus minus revoluti, 1-3 mm lati. Color plus minus stramineum. Systema hyphale monomiticum; hyphae tenuitunicatae vel leviter crassiusculae, 3-5 µm latae, fibulatae. Cystidia ut videtur nulla. Basidia subclavata, generaliter 18-25 x 5-6 µm, 4 sterigmatibus. Sporae subglobosae vel globosae, crassitunicatae, leves, 4.5-5 µm vel 4.5-5 x 4-4.5 µm.
Holotype: Venezuela, EstadoAragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on deciduous wood, 14.IV.1999, L. Ryvarden 41417 (O). Paratype: ditto, 25.IV.1998, L. Ryvarden 40797 (O).
Basidiome resupinate, rolled back at the margin to almost pileate. Hymenophore strongly hydnoid to irpicoid, with smooth, pale yellow, conical or more commonly flattened aculei 1-3 mm long. Margin abrupt or sometimes distinctly rolled up to as much as 1-3 mm. Hyphal system monomitic; all hyphae with clamp-connections, thin-walled or with a slight wall thickening, 3-5 µm wide. Aculeal hyphae somewhat irregularly interwoven, or almost parallel. Cystidia apparently absent, but with some hyphal ends between the basidia, obtuse, c. 15-25 x 3-4 µm. Basidia in a fairly dense layer, more or less clavate, 18-25 x 5-6 µm, with four sterigmata and with a basal clamp-connection. Spores subglobose to globose, hyaline, smooth, with a slight wall thickening or thick-walled, 4.5-5 µm across or 4.5-5 x 4-4.5 µm, inamyloid, indextrinoid, acyanophilous.
This new species appears closely related to *R. americanus* but can be separated by its irpicoid hymenophore with revolute margin, its lack of cystidia, and its slightly smaller spores. Spores in *R. americanus* are (4.5-)5-6 (-6.5) x 4-5 (5.8) µm.

Radulomyces cfr. **rickii** (Bres.) M.P. Christ., Dansk Bot. Ark. 19:128, 1960.
Corticium rickii Bres. in Rick, Österr. Bot. Zeitschr. 48:136, 1898.
Radulomyces rickii (Bres.) M.P. Christ., Dansk Bot. Ark. 19:128, 1960.
Cerocorticium rickii (Bres.) Boidin et al., Cryptog., Mycol. 9:45, 1988.
The species was reported from Colombia by Hjortstam and Ryvarden (1997). It is also known from Argentina and Brazil. In general the spores are 7.5-8.5 µm and slightly rugose. The two specimens below differ in having larger spores, which are up to 9-10 µm wide and supposedly have a slightly rugose wall. They differ from the well-known *R. confluens* in having smooth and nearly globose spores. The latter probably has a world-wide distribution, but is hitherto not known from Venezuela.
Specimens: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on deciduous wood, 21.I.2000, L. Ryvarden 42296 and 42298.

Repetobasidiellum fusisporum J. Erikss. & Hjortstam, Corticiaceae North Eur. 6: 1247, 1981.
Basidiome resupinate, closely adnate, thin to moderately thick, at first pruinose and discontinuous, then continuous and ceraceous, whitish to more commonly grey and especially when old more or less glossy. Hyphal system monomitic; hyphae with clamp connections, 1.5-2.5(-3) µm wide, often strongly agglutinated and forming a very dense tissue. In some specimens clamp connections are difficult to discern without making a thin, vertical section of the fungus. Cystidia absent, but with dendrohyphidia which in most cases are easily observed, distinctly ramified and protrude as much as 10 µm above the basidia, thin-walled, widened in the basal part and often strongly incrusted. Basidia at first subglobose, then subcylindrical to slightly urniform, mostly constricted in the middle part, 20-30 x (6-)7-8 µm, with four sterigmata and a basal clamp connection, the repetition (mentioned in the original description) as well as clamp connections are difficult to observe except when fresh material is used for microscopic investigation or if thin, vertical sections are examined in either Melzer´s reagent or Cotton blue. Spores mostly sublunate to subfusiform, (6.5-)8-12 x 2.5-3.5 µm (in the original description 6.5-8 x 2.5-3 µm), thin-walled, smooth, inamyloid, indextrinoid and acyanophilous.
This species is previously known from Northern Europe, Brazil and Ethiopia and is an obligate associate of different kinds of ferns (from Brazil collected on *Cyathea* sp. and *Dicksonia* sp.). An excellent drawing was made by John Eriksson (Eriksson, Hjortstam & Ryvarden, 1981), and it should also be noted that the species was neotypified by Hjortstam (1987). The Venezuelan specimen is somewhat dried, but some basidia and typical spores can easily be detected.
Specimen: Estado Miranda, Tacata area, Rio Tacata, on fern, 14.VI.2003, L. Ryvarden 45737.

Sistotrema diademiferum (Bourdot & Galzin) Donk, Fungus 26:4, 1956.
Corticium diademiferum Bourdot & Galzin, Bull. Soc. Mycol. France 27: 244, 1911.
Trechispora diademifera (Bourdot & Galzin) D.P. Rogers, Univ. Iowa Stud. Nat. Hist. 17:85, 1935.
Basidiome resupinate, thin, closely adnate, whitish or greyish, more or less continuous; margin undifferentiated, without hyphal strands. Hyphal system monomitic, subhymenial hyphae short-celled, 2-3 µm wide, basal hyphae straight, sparsely branched, 3-4 (-5) µm wide, all hyphae thin-walled and with clamp-connections. Cystidia lacking. Basidia urniform, generally up to 20 µm long and 5-7 µm wide, mainly with six sterigmata, rarely eight, with a basal clamp-connection. Spores globoid, smooth, thin-walled, 3.5-5(-6) x 2.5-3(-3.5) µm.

The species has been reported from several countries in South America including Venezuela (Dennis, 1970; Liberta and Navas, 1978). It is a characteristic species due to the thin fruitbody, basidia with six (or sometimes up to eight) sterigmata, and above all by its almost globose and thin-walled spores.
Specimen: Estado Aragua, Parque Nacional Henri Pittier, on hardwood, 25.IV.1998, L. Ryvarden 40793.

Skvortzovia furfurella (Bres.) Bononi & Hjortstam, Mycotaxon 28:12, 1987.
Odontia furfurella Bres., Mycologia 17:71, 1925.
Resinicium furfurellum (Bres.) Nakasone, Mycol. Mem. 15:284, 1990.
Jacksonomyces furfurellus (Bres.) Sheng H. Wu & Z. C. Chen, Bull. Nat. Mus. Nat. Sci. 3: 262, 1992.
Basidiome resupinate, effuse, adnate, not easily separable from the substratum. Hymenophore distinctly odontioid, whitish or creamish at first, then darkening and finally pale ochraceous, with fairly brittle, more or less cylindrical or sometimes slightly conical aculei, about 0.5-1 mm long, apically smooth and in some specimens distinctly crowded, hymenium between the aculei smooth, fairly thin, concolorous with the aculei, no parts changing colour in KOH. Hyphal system monomitic: hyphae distinct, conglutinated in the centre of the aculei and more or less parallely arranged, moderately thick-walled, about 2-2.5(-3) µm wide, with frequent clamp-connections. Cystidia scattered or in some specimens fairly frequent, projecting as much as 15-20 µm above the basidia, thin-walled, lageniform-subcapitate, about 30-40 µm long and 3 µm wide near the base. Basidia subclavate, 12-15 x 3.5-4(-4.5) µm, with four sterigmata and a basal clamp-connection. Spores curved, thin-walled, 4-5 x 1 µm, inamyloid, indextrinoid and acyanophilous.
Easily recognized species due to the odontioid basidiome and the narrow and curved spores.
Originally described from the USA (Virginia) and Gilbertson (1963) gave several localities from the eastern USA. It is also known from Brazil, Tanzania, and Wu & Chen (1992) reported it from Taiwan. Normally it grows on wood, but it has also been recorded on bamboo in Brazil. It was also, according to Wu & Chen (1992), described from Japan as *Odontia verruca* H. Furuk.
Specimens: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, 21.II.2000, L. Ryvarden 42284; Estado Bolivar, Gran Sabana, Parque Nacional Canaima, on hardwood, 11.VI.2003, L. Ryvarden 45623

Steccherinum cfr. **albofibrillosum** (Hjortstam & Ryvarden) Hallenb. & Hjortstam, Mycotaxon 31:443, 1988.
Phlebia albofibrillosa Hjortstam & Ryvarden, Mycotaxon 20:139, 1984.
A scant specimen with somewhat smaller spores than normal.

Specimen: Estado Aragua, Parque Nacional Henri Pittier, on hardwood, 25.IV.1998, L. Ryvarden 40759 (O).

Steccherinum ciliolatum (Berk. & M.A. Curtis) Gilb. & Budington, J. Ariz. Acad. Sci. 6:97, 1970.
Hydnum ciliolatum Berk. & M.A. Curtis, Hooker's J. Bot. 1:235, 1849.
Odontia ciliolata (Berk. & M.A. Curtis) L.W. Mill., Mycologia 26:18, 1934.
Irpex ciliolatus (Berk. & M.A. Curtis) Kotir. & Saarenoksa, Pol. Bot. Journ. 47:104, 2002.
Description of the Venezuelan specimen: Basidiome resupinate, ochraceous. Basidiome hydnoid, aculei almost cylindrical, tapering towards the tip, 0.4-0.8 mm long, with apical part somewhat fimbriate. Hyphal system dimitic; subicular hyphae closely interwoven, thin-walled, often branched, with clamp-connections, 3-3.5 µm wide, some thick-walled, smooth or slightly incrusted, 3-4 µm wide, ending as incrusted cystidia; cystidia strongly incrusted, thick-walled, incrusted part 50-70 µm long, in the middle part 6-10(12) µm wide. Basidia clavate, about 15 x 4 µm, with four sterigmata and a basal clamp-connection. Spores hyaline, smooth, narrowly ellipsoid to almost cylindrical, 4-4.5 x 2.25-2.5 µm.
Originally described from U.S:A. (South Carolina) and according to Ginns and Lefebvre (1993) a fairly sommon species in North America. In subtropical and tropical areas a rare species and has been noted with some doubt from Colombia and Thailand (Hjortstam and Ryvarden, 1997 and 1982/b respectively). Rattan (1977) reported several specimens from India.
Specimen: Estado Miranda, Univ. Simon Bolivar, Sartenejas, on dead twigs of hardwood, 10.VI.1995, L. Ryvarden 37504.

Steccherinum fimbriatum (Pers.:Fr.) J. Erikss., Symb. bot. ups. 16:134, 1958.
Hydnum fimbriatum Pers.:Fr., Syst. Mycol. 1:421, 1821.
Xylodon fimbriatus (Pers.:Fr.) Chevall., Fl. gén. Envir. Paris 1:273, 1826.
Odontia fimbriata (Pers.: Fr.) Fr., Epicr. 529, 1838.
Irpex fimbriatus (Pers.:Fr.) Kotir. & Saarenoksa, Pol. Bot. Journ. 47:105, 2002.
Basidiome resupinate, adnate. Hymenophore odontioid, fairly tough, usually with a violaceous tint or especially when dried sometimes greyish, aculei somewhat conical, penicillate, about 0.2-0.3 mm long and 4-5 per mm, subiculum concolorous or slightly paler, 0.1-0.2 mm thick, margin more or less filamentous with several cm long threads. Hyphal system dimitic: generative hyphae thin-walled, 3.5-4 µm wide, with clamp-connections and sparse ramifications, in the aculeal trama intermingled with skeletals, skeletal hyphae thick-walled, (2.5-)3 µm wide, without clamp-connections, subhymenial hyphae short-celled, always with clamp-connections. Cystidia numerous, thin to moderately thick-walled,

sometimes sinuous, usually strongly incrusted towards the obtuse apex, normally with the incrusted part 40-50 x 8-10 µm. Basidia subclavate, slightly sinuous, 18-20 x 4-4.5 µm, with four sterigmata and a basal clamp-connection. Spores ellipsoid, smooth, thin-walled, 3.25-4 x (2-)2.25-2.5 µm.
This species is previously known from Argentina (Rajchenberg, 2002) and reported from Venezuela by Hjortstam, Ryvarden & Iturriaga (2005). It is worth noticing that Rick (1933) described *Odontia rosea* from Brazil, which could be the same as *S. fimbriatum* (see Hjortstam & Ryvarden, 1982).
Specimen: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, 21.II.2000, L. Ryvarden 42280.

Steccherinum subochraceum Bononi & Hjortstam, Mycotaxon 25:467, 1986.
Basidiome effuse, adnate or reflexed with the margin and subiculum paler then the fertile hydnoid part, margin smooth to byssoid or fimbriate. Hymenophore distinctly hydnoid, pale salmon, aculei conical, almost smooth, subulate, simple to rarely crowded, about 4-5 per mm and 1-2(-3) mm long. Hyphal system dimitic; hyphae thin-walled, 2-2.5 µm wide , with clamp-connections, in the middle of the aculei interwoven and mixed with skeletal hyphae which are 4-5 µm wide and without clamp-connections, thick-walled, with walls somewhot swelling in KOH. Cystidia of two kinds: skeletal cystidia numerous in the aculei, rare or absent in the subiculum, strongly incrusted as much as 10-20 µm in the apical part, blunt to more rarely conical, hymenial cystidia (metuloids) in varying numbers, but common in the middle part of the aculei, 30-40 µm long, subconical and apically incrusted, with a basal clamp-connection. Basidia subclavate, slightly sinuous, (-15-)20-35 x 4.5-5 µm, with four sterigmata and a basal clamp-connection. Spores globose to more rarely subglobose, thin-walled, smooth, normally (3-)3.5(-4) µm wide or when subglobose about 3-3.5 x 3.5-4 µm.
This species is extremely similar to *S. ochraceum*, but the aculei are as a rule more slender and spores almost globose. Originally a Brazilian species and additionally recorded from Colombia and Ecuador.
Specimens: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on hardwood, 24.XI.1994, L. Ryvarden 35509; Estado Miranda, Univ. Simon Bolivar, Sartenejas, on dead hardwood, 10.VI. 1995, L. Ryvarden 37556.

Subulicystidium longisporum (Pat.) Parmasto Conspectus syst. corticiacearum: (Tartu) p. 121, 1968.
Hypochnus longisporus Pat., Journ. Bot. (Morot) 8:22, 1894.
Kneiffia longispora (Pat.) Bres., Annls mycol. (Berlin) 1:105, 1903.
Peniophora longispora (Pat.) Höhn., Annls mycol. (Berlin) 3:325, 1905.

This is a strongly variable species and s.l. very common world-wide. Sometimes it has extremely long spores, up to 20-25 µm. One of the most collected corticioid species in Venezuela.

Tofispora G. Langer, Bibl. Myc. 158:32, 1994.
Basidiomes resupinate, loosely adnate, hypochnoid. Hymenophore smooth, whitish to ochraceous or, especially when dried or old, yellowish brown to brownish. Hyphal system monomitic; basal hyphae almost hyaline to pale brown, thick-walled, subhymenial hyphae hyaline to subhyaline, slightly narrower and generally thin-walled. All hyphae without clamp connections. Cystidia absent. Basidia stout, with four or occasionally (one), two or five sterigmata. Spores globoid or distinctly biapiculate, thick-walled, with small verrucae, hyaline or brownish, with a distinct apiculus. All species in the genus except *T. hebelomatospora* producing secondary spores.
Generic type: *Tofispora repetospores* G. Langer

Key to *Tofispora* species

1. Spores never producing secondary spores, spores yellowish brown, 9-13 x 5-7 µm. Gabon, Puerto Rico, Brazil, Venezuela, Argentina. ..... ***T. hebelomatospora*** (Boidin & Gilles) G. Langer
1. Spores producing secondary spores, even if sometimes few.....2

2a. Spores biapiculate, hyaline or pale ochraceous, 8-11.5 x 6.5-7 µm (Langer, 1994). Brazil, Venezuela, Malawi, Tanzania..... ***T. biapiculata*** (D.P. Rogers) G. Langer
2b. Spores almost globose, hyaline or pale ochraceous, 6.5-8 x 6-8 (Langer, 1994), 5-6 x 4-6 µm (Roberts, 1999). Only known from Ethiopia
..... ***T. repetospora*** G. Langer & Ryvarden
2c. Spores 7.5 x 7 µm or 7-7.5(-8) µm diam. Known from Colombia and Venezuela..... ***T. scaberula*** (Hjortstam & Ryvarden) Hjortstam & Ryvarden

Tofispora scaberula (Hjortstam & Ryvarden) Hjortstam & Ryvarden **comb. nov.**
Basionym: *Botryohypochnus scaberula* Hjortstam & Ryvarden, Mycotaxon 64:230, 1997.
Basidiome resupinate, loosely adnate, hypochnoid. Hymenophore smooth, pale ochraceous to pale umber. Hyphal system monomitic; basal hyphae pale brown, thick-walled, ramified at right angles, 9-10 µm wide, with walls cyano-philous; subhymenial hyphae subhyaline to hyaline, slightly narrower and thin-walled,

8-10 µm wide. All hyphae without clamp-connections. Cystidia absent. Basidia stout, 15(-18) x 9-10 µm, with four or occasionally two sterigmata. Spores globoid, thick-walled, with small verrucae, at first hyaline then pale yellowish and with a distinct apiculus, 7-7.5 µm diam., cyanophilous, repetition variable.
This species was based on a single specimen from Colombia (Cundinamarca, 6.VI.1978, Ryvarden 15500). It seems to be extremely similar to *Tofispora repetospora* G. Langer, described from Ethiopia. Recently we re-examined two specimens from Venezuela, Ryv. 37942 and 37944, but unfortunately these were erroneously published under the name *Tofispora biapiculata* by Hjortstam, Ryvarden & Iturriaga (2005). There are very small differences between all these specimens, including the type of *T. repetospora*, but at present we keep the South American specimens under the name *T. scaberula* until additional specimens of the African species *T. repetospora* are recorded.
Specimens: Estado Bolivar, Las Nieves, on dead polypore, 12.VI.1995, L. Ryvarden 37942 and 37944; Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on hardwood, 14.IV.1999, L. Ryvarden 41464.

Tomentella gigaspora Hjortstam & Ryvarden, Mycotaxon 56:181, 1995.
Basidiome resupinate, adnate, mainly colliculose to odontoid, black, dull, widely effused, up to 10 cm in longest dimension, up to 2 mm thick, rather fragile when dry. Hyphal system monomitic; all hyphae with clamp-connections, 3-4 µm wide, often branched in wide to right angles, pale olivaceous in water, most hyphae, especially in the subhymenium, becoming green in 3% KOH. Cystidia absent, but some paraphysoid hyphae mixed with the basidia. Basidia with 4 sterigmata and basal clamp-connection, 50-70 x 15-22 µm, individual sterigmata up to 12 µm long. Spores globose, golden brown in KOH, spiny, 14-17 µm in diam (excluding aculei), individual spines up to 2 µm long.
The taxon was originally described from Costa Rica and characterized by the colliculose to somewhat hydnoid hymenophore and large, globose spores.
Specimen: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, 14.IV.1999, L. Ryvarden 41386.

Tomentella lilacinogrisea Wakef., Trans. Br. Mycol. Soc. 49:360, 1966.
The species was originally described from Venezuela based on a specimen gathered by R.W.G. Dennis and probably never recollected. It should be noted that Kõljalg (1996) placed *Tomentella neobourdotii* in synonymy with this species. We have not seen the type of Wakefield's species, but according to the description by Larsen (1974) this is distinctly different from the description by Kõljalg.
Holotype: Venezuela, Caracas, 3.VII.1958, R.W.G. Dennis 1355 (K).

Trechispora subsphaerospora (Litsch.) Liberta, Can. J. Bot. 51:1887, 1973.
Corticium subsphaerosporum Litsch., in Keissler, Nat. Hist. Juan Fernandez 2:549, 1928.
Basidiome resupinate, adnate, almost grandinioid, white. Hyphal system monomitic; hyphae thin-walled, 2-3.5 µm wide, swellings not observed with certainty. Cystidia absent. Basidia small, (9-)10-15 x 4-4.5 µm, with four sterigmata and a basal clamp-connection. Spores turbinate, with 3(-4) protuberances, 3.5-4.5 µm across, inamyloid, indextrinoid, acyanophilous.
A thin species, previously not reported from Venezuela. Originally described from Juan Fernandez on *Dicksonia berteroana*, 9.III.1917, C. Skottsberg. (W).
Specimen: Estado Miranda, Tacata area, Rio Tacata, 14.VI.2003, L. Ryvarden 45721 (a tiny specimen).

Tubulicium dussii (Pat.) Oberw. ex Jülich, Persoonia 10: 335, 1979.
Hypochnus dussii Pat., Bull. Soc. Mycol. France 15:202, 1899.
Epithele dussii (Pat.) Pat., Ess. tax. 59, 1900.
Peniophora dussii (Pat.) Höhn. & Litsch., Sitzber. Akad. Wiss. Wien, Math.-nat. Kl. 116:749, 1907.
Xenasma dussii (Pat.) Liberta, Mycologia 52:898, 1960.
Tubulixenasma dussii (Pat.) Parmasto, Conspectus syst. corticiacearum: (Tartu) p. 62, 1968.
This species was originally described from Guadeloupe and reported from Venezuela by Liberta & Navas (1978). It seems to be a ubiquitous species on all sorts of ferns.

Tubulicium vermiferum (Bourdot) Oberw. ex Jülich, Persoonia 10:335, 1979.
Peniophora vermifera Bourdot, Rev. Sci. Bourb. 23:13 (page 11 of reprint, 1910), 1910.
Tubulicrinis vermiferus (Bourdot) M.P. Christ., Dansk Bot. Ark. 19:136, 1960.
Tubulicium vermiferum (Bourdot) Oberw., Sydowia, Ann. Mycol. Ser. II, 19:54, 1965. (Not validly published).
Tubulixenasma vermiferum (Bourdot) Parmasto, Eesti NSV Tead. Akad. Toim. biol. ,seer. 14:231, 1965.
Basidiome thin, generally whitish, pilose by protruding cystidia. Hyphal system monomitic; hyphae thin-walled or with a slight wall thickening, more or less agglutinated, 2-2.5(-3) µm wide, with clamp-connections. Cystidia (lyocystidia) conical, up to 100 µm long, 8-12 µm wide near the base, thick-walled, with conspicuous, narrow, dendritic hyphae climbing along the wall, amyloid reaction fairly weak. Basidia terminal, somewhat pedunculate, 25-40 µm long and about 10-12 µm wide near the sterigmata, with four sterigmata and a basal clamp-con-

nection. Spores with a sigmoid appearance, smooth, thin-walled, 20-25 µm long and about 4 µm wide, inamyloid, indextrinoid and acyanophilous.

This is a well known species, which sometimes grows on ferns, but mostly on wood and bark of living trees, etc.

Specimen: Estado Bolivar, Gran Sabana, Parque Nacional Canaima, 11.VI.2003, L. Ryvarden 45605.

Tubulicrinis cfr. **incrassatus** Hallenberg, Iran. J. Pl. Path. 14:80, 1978.

Basidiome resupinate, closely adnate, when well developed moderately thick. Hymenophore greyish to pale sordid ochraceous, smooth or pilose by protruding cystidia. Hyphal system monomitic; all hyphae with clamp-connections, thin to fairly thick-walled. Cystidia (lyocystidia) robust, with a weak amyloid reaction, apically smooth to incrusted, 60-90(-100) µm long and 5-7(-10) µm wide in the middle part, towards the obtuse apex rarely somewhat inflated, capillary lumen abrupt or terminating gradually. Basidia thin-walled, towards the base with slight wall thickening, inamyloid, normally 13-15 x 3.5-4 µm, with four sterigmata and a basal clamp-connection. Spores cylindrical, smooth, thin-walled, 6-6.5(-7) x 2 µm.

So far *Tubulicrinis incrassatus* is not known with certainty outside the type locality (Iran). Another species, *Tubulicrinis orientalis* Parmasto described from Primorsk (Russia), is similar, but possibly with somewhat narrower spores, 1.4-2 µm wide (according to the original description). Species of *Tubulicrinis* are comparatively rare in South America, with eleven known taxa of which two were originally described from the continent, namely *T. subfusiformis* Hjortstam & Ryvarden (1985) and *T. ellipsoideus* Greslebin & Rajchenb. (Rajchenberg 2002).

Specimen: Estado Bolivar, Gran Sabana, Parque Nacional Canaima, 11.VI.2003, L. Ryvarden 45471.

Xenasma aculeatum C.E. Gómez, Bol. Soc. Argent. Bot. 14:273, 1972.

Basidiome resupinate, thin. Hymenophore whitish to almost pale bluish under a lens. Subiculum 20-40 µm thick. Margin determinateindeterminate. Hyphal system monomitic; hyphae 1.5-2.5(-3) µm diam, forming a dense and gelatinized tissue. Cystidia thin-walled or basally with a thickened wall, generally obtuse and biradicate, about 30-70 µm long and 6-8 µm wide in the middle part. Basidia short-cylindrical, thin-walled, pleural, 18-30 x 6-8 µm, with two or three sterigmata and a basal clamp-connection. Spores globoid, hyaline, distinctly ornamented with robust verrucae, not dissolving in KOH, about 8-12 diam. inclusive of ornamentation.

Previously reported from Colombia by Hjortstam & Ryvarden (1997). A similar species is *Xenasma praeteritum* (H.S. Jacks.) Donk, but with somewhat smaller

spores (5.5-9 x 4.5-7 µm) with less pronounced verrucae that do not dissolve in KOH.
Specimen: Estado Bolivar, Gran Sabana, Parque Nacional Canaima, on hard-wood, 11.VI.2003, L. Ryvarden 45628.

Xylodon (Pers.) Gray, Nat. arrang. Br. Pl. 1:649, 1821.
Sistotrema sect. *Xylodon* Pers., Syn. meth. Fung. 552, 1801.
Generic type: *Hydnum quercinum* Pers.:Fr., Syst. Mycol. 1:423, 1821.
Odontia quercina Pers., Observ. mycol. 2:17, 1799.
Sistotrema quercinum (Pers.) Pers., Syn. Meth. Fung. 1:552, 1801.
Hyphodontia quercina (Pers.:Fr.) J. Erikss., Symb. bot. ups. 16:105, 1958.
Basidiomes resupinate, adnate, confluent, rarely with a revolute margin. Hymenophore from almost smooth to grandinioid, tuberculate, raduloid or distinctly hydnoid, in some species poroid. Aculei of various appearance, sometimes crowded. Subiculum always present, thin or more often with a distinct layer, rarely stratose, in most cases paler than the hymenial layer. Margin mainly indeterminate. Hyphal system monomitic; hyphae of various size, usually very distinct, thin to commonly thick-walled, sometimes with a cyanophilous reaction, generally branching from septa and often incrusted with mineral crystals, with clamp-connections or rarely simple septate. Hyphal ends of various kinds, ordinarily occurring apically in the aculei. Cystidia variable, smooth or incrusted, conical to more commonly capitate, rarely septate, inamyloid, indextrinoid or cyanophilous. Basidia mainly suburniform, thin-walled or basally with a slight thickened wall, normally with four sterigmata and a basal clamp-connection, in some species with internal repetition. Spores smooth, thin to rarely thick-walled, almost globose to ellipsoid, cylindric, allantoid, inamyloid, indextrinoid, sometimes with a slight cyanophilous reaction.
The genus includes a large number of species, but only species from tropical and subtropical areas are treated here.

Xylodon quercinus (Pers.:Fr.) Gray, Nat. arrang. Br. Pl. 1:649, 1821.
Hydnum quercinum Pers.:Fr., Syst. Mycol. 1:423, 1821.
Odontia quercina Pers., Observ. mycol. 2:17, 1799.
Sistotrema quercinum (Pers.) Pers., Syn. Meth. Fung. 1:552, 1801.
Radulum quercinum (Pers.:Fr.) Fr., Epicrisis p. 525, 1838.
Radulum orbiculare ssp. *quercinum* (Pers.:Fr.) P. Karst., Krit. Öfvers. Finl. Basidsv. Tillägg 3: 22, 1898.
Hyphodontia quercina (Pers.:Fr.) J. Erikss. Symb. bot. ups. 16: 105, 1958.
Basidioradulum quercinum (Pers.:Fr.) H. Furuk., Bull. Gov. For. exp. St. Meguro 261:60, 1974.

Kneiffiella quercina (Pers.:Fr.) Jülich & Stalpers, Verh. Kon. Ned. Akad. Wet., Afd. Natuurk., Tweede Reeks 74: 134, 1980.
Grandinia quercina (Pers.:Fr.) Jülich, Int. J. Mycol. Lichenol. 1:36, 1982.
Basidiome resupinate, effuse, adnate. Hymenophore odontioid or almost raduloid, aculei conical to subcylindrical, c. 2-3 mm long. Hyphal system monomitic; hyphae c. 2-3(-4) µm wide, distinct, more or less parallelly arranged in the centre of the aculei, irregularly intertwined in the subiculum, all hyphae with clamp-connections. Cystidia capitate, hyphal elements occur apically in the aculei, mainly subulate. Basidia with suburniform appearance, 25-40 x 4.5-5.5 µm, basally slightly thick-walled, with four sterigmata and a basal clamp-connection. Spores cylindrical with the adaxial side somewhat concave, smooth, thinwalled, 6-7(-8) x 2.5-3.5 µm
A common species in the temperate zone, but not to our knowledge recorded in subtropical or tropical regions.
It should be noted that the species was neotypified by E. Langer (1994), though he considered *Radulum quercinum* Fr. 1874 to be the basionym.

Xylodon australis (Berk.) Hjortstam & Ryvarden **nov. comb.**
Basionym: *Grandinia australis* Berk., in Hooker, Bot. Antarct. Voy. Fl. Tasm. 2:257, 1859.
Hyphodontia australis (Berk.) Hjortstam, Mycotaxon 54:187, 1995.
Description of the type: Basidiome resupinate, at first loosely adnate and rather membranous. Hymenophore crustaceous and generally cracked into small polygons, grandinioid to hydnoid with the aculei often slightly fimbriate at the apex, 5-6 per mm, when young pale brown with an olive tint, then sordid buff and (depending on age?) turning violet in KOH. Subiculum more or less white, then dull brown or even sulphur. Hyphal system monomitic; hyphae thin-walled or slightly thick-walled; subicular hyphae densely interwoven, 3.5-5 µm wide; all hyphae with clamp-connections. Cystidia scattered to numerous, 40-60 µm long and projecting above the basidia as much as 10-20 µm, thin-walled, apically obtuse or more or less subulate, rarely capitulate, but sometimes sinuous or moniliform. Basidia narrowly clavate, constricted, 20-30 x 4-5 µm, with four sterigmata and a basal clamp connection. Spores ellipsoid, hyaline, smooth, thinwalled, (5.5-)6-7.5 x (3.5-)4-4.5 µm, inamyloid, indextrinoid and acyanophilous.
The species has also been thoroughly described and discussed by Greslebin, Rajchenberg & Bianchinotti (2000) and see also Greslebin & Rajchenberg (2000).
It is uncertain whether the Venezuelan specimens belong here or represent a new taxon, especially since the reddish colour of the hymenophore in KOH is weak. However, in their micromorphology they seem to be closely related.
Specimens: Estado Bolivar, Gran Sabana, Parque Nacional Canaima, on hard-

wood, 11.VI.2003, L. Ryvarden 45565 (and possibly 45548).
Additional specimen: Australia, Victoria, on *Eucalyptus*, 2.XII.1978, Sinnott 2408 (K).

Xylodon bugellensis (Ces.) Hjortstam & Ryvarden **comb. nov.**
Basionym: *Odontia bugellensis* Ces., Bot. Zeitung 13(16):283, 1855 (also in Rabenh., Klotzschii Herb. mycol. n. 1915, 1855).
Hyphodontia bugellensis (Ces.) J. Erikss., Symb. bot. ups. 16:104, 1958.
Type: Rabenh., Klotzschii Herb. mycol. n. 1915 (S and a duplicate in K).
Basidiome resupinate, effused, moderately adnate, soft, confluent, up to 0.5 mm thick, whitish to pale ochraceous. Hymenophore odontioid with small, almost cylindrical aculei, apically penicillate, with age becoming about (8-)10-12 per mm. Margin mainly indeterminate. Hyphal system monomitic; subicular hyphae with walls 0.1-0.5 µm thick, light-refracting, 2.5-3(-4) µm wide, ramified, generally with crystalline incrustations; subhymenial hyphae thin-walled; projecting aculeal hyphae subulate to obtuse, sinuous, about 3-4 µm wide, normally with numerous crystals, all hyphae with clamp-connections. Cystidia few to fairly numerous, tibiiform to lecythiform, about 20 µm long, variable in width. Basidia suburniform, 20-25 µm long and 3.5-4(-5) µm wide below the sterigmata, with four sterigmata and with a basal clamp-connection. Spores ellipsoid or subcylindrical, smooth, when mature with a slight wall thickening, (5-)5.5-6(-6.5) x 3.5-4 µm, acyanophilous.

This species is very similar to *X. pruni*, but can be recognized by its somewhat thick-walled spores. Its tropical distribution is not well known and it has not previously been reported from Venezuela. As well as Europe, it has been recorded from the Canary Islands, Kenya, and Tanzania. There is a doubtful specimen from Brazil, which seems to differ in having smaller spores (Rio de Janeiro, Parque Nacional de Itatiaia, K. Hjortstam & V.L. Ramos Bononi 16088 (Hjm Priv. Herb.).
Specimens: Estado Bolivar, Gran Sabana, 1 km east of Estacion Aponwao, 1200 alt., 24.II.2000, L. Ryvarden & T. Itturiaga, Ryvarden 42361 and possibly also 42362 (O).
For South American specimens of *X. pruni*, see below.

Xylodon lanatus (Burds. & Nakasone) Hjortstam & Ryvarden **comb. nov.**
Basionym: *Hyphodontia lanata* Burds. & Nakasone, Mycologia 73:461, 1981.
For a description of the species and additional information, see Burdsall & Nakasone (1981). According to the holotype (USA, Mississippi, Desoto Nat. Forest, *Liriodendron tulipiferae*, 1.VI.1976, H.H. Burdsall 8925) this is a typical species of *Xylodon*.

The species is also known from USA (Florida) (Burdsall & Nakasone, 1981). Wu (1990) reported it from Taiwan and there are also some doubtful specimens from Argentina, Colombia, Brazil, and Uruguay (Gazzano, 1992 (sub aff.) and 1998). From Venezuela three specimens have been examined which seem to be at least similar to the original description, viz.: Estado Bolivar, Gran Sabana, forest, 1 km east of Estacion Aponwao, 1200 m.alt., 24.II.2000, L. Ryvarden & Iturriaga, L. Ryvarden 42322 and 42329; Estado Bolivar, Gran Sabana, Parque Nacional Canaima, 11.VI.2003, L. Ryvarden 45517.

Xylodon pruni (Lasch) Hjortstam & Ryvarden **comb. nov.**
Basionym: *Odontia pruni* Lasch, Bot. Zeitung 9(36): 644, 1851 (also in Rabenh., Klotzschii Herb. Viv. Mycol. no. 1514, 1851).
Type: Rabenh., Klotzschii Herb. Viv. Mycol. no. 1514 (S and a duplicate in K).
Odontia corrugata ssp. *pruni* (Lasch) Bourdot & Galzin, Hym. de France p. 434, 1928.
Hyphodontia pruni (Lasch) Svrcek, Ceská Mykol. 27:204, 1973.
Hyphoderma pruni (Lasch) Jülich, Persoonia 8:80, 1974.
Hyphodontia pruni (Lasch) J. Erikss. & Hjortstam, Corticiaceae North Eur. 4:663, 1976.
Phanerochaete pruni (Lasch) S.S. Rattan, Bibl. Mycol. 60:258, 1977.
Grandinia pruni (Lasch) Jülich, Int. J. Mycol. Lichenol. 1:36, 1982.
The world distribution of *X. pruni* is uncertain. It is a well-known taxon in the northern part of Europe and grows there mainly on decayed trunks of *Ulmus*. It is obviously very rare in North America (see Ginns & Lefebvre, 1993). Greslebin & Rajchenberg (2000) reported it (sub vel. aff.) from Argentina, as did Popoff (1997), whilst Gazzano (2000) reported it from Uruguay, but none of these specimens has been studied by us. There are no records from the Southern Hemisphere. Not known from Venezuela.

Xylodon spathulatus (Schrad.:Fr.) Kuntze, Rev. Gen. Pl. 3 (2):541, 1898.
Hydnum spathulatum Schrad.:Fr., Syst. Mycol. 1:423, 1821.
Neotype: Sweden, Uppland, L. Romell, 17.VIII.1913, No. 4981 (S). Designated by Langer (1994).
Description of Venezuelan specimen: Basidiome resupinate, effuse, adnate. Hymenophore pale ochraceous, distinctly hydnoid to almost irpicoid with dense, mainly flattened aculei and with small outgrowths along the side, approximately up to 2 mm long. Hyphal system monomitic; hyphae distinct, somewhat thick-walled, 2.5-3.5 µm wide, irregularly interwoven in the subiculum, more or less parallelly arranged in the middle of the aculei; projecting hyphae in the aculeal apices often incrusted, all hyphae with clamp-connections. Cystidia of two kinds,

1) capitate, 25-50 µm, usually with an apical cap of resinous matter 2) thin walled, acute, with one or more constrictions, 20-35 µm long, sometimes difficult to find or may be lacking. Basidia subcylindrical, constricted, 15-20 x 4-5 µm, with 4 sterigmata and a basal clamp-connection. Spores broadly ellipsoid to almost globose, smooth, thin-walled, (4.5-)4.75-5 x (4.25-)4.5-4.75 µm.
This species has been reported several times from Argentina (Galan et al., 1993, sub *Grandinia*; Urcelay et al.,1999: Greslebin & Rajchenberg, 2000). There is also a specimen from Brazil (Hjm 16347) deposited in Kew. *Irpex fimbriaeformis* Berk. & M.A. Curtis, originally described from USA (Pennsylvania), seems to be extremely similar if not the same. The holotype (Michener 3762) is filed in Kew. See further Gilbertson (1965) and Ginns & Lefebvre (1993).
Specimen: Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on hardwood, 21.II.2000, L. Ryvarden 42276 (O and duplicate in Hjm Priv. Herb.).

Xylodon stratosus (Hjortstam & Ryvarden) Hjortstam & Ryvarden **comb. nov.**
Basionym: *Hyphodontia stratosa* Hjortstam & Ryvarden, Mycotaxon 64:236, 1997.
Basidiome resupinate, effuse, closely adnate, somewhat stratose. Hymenophore more or less glossy, partly smooth or more commonly grandinioid or odontoid and then with short aculei 4-6 per mm, hard in consistency, yellowish to ochraceous. Subicular hyphae in a dense layer, thin-walled or with slight wall thickening, 2.5-3 µm wide, incrusted; subhymenial hyphae comparatively short-celled, 2-2.5 µm wide. Cystidia abundant, subulate, sinuose, normally 30-40 µm long. Basidia subclavate, often with a median constriction, 20-25(-30) x (3.5-)4 µm, with four sterigmata and a basal clamp connection. Spores ellipsoid, smooth, 5.5-6 x 3.5-4 µm.
This species was originally described from Kenya and in the original description also reported from Colombia. The Venezuelan specimen is tiny, but conforms fairly well to the species concept.
Specimen: Estado Bolivar, Gran Sabana, forest, 1 km east of Estacion Aponwao, 1200 m.alt., 24.I.2000, T. Itturriaga & L. Ryvarden, L. Ryvarden 42396.

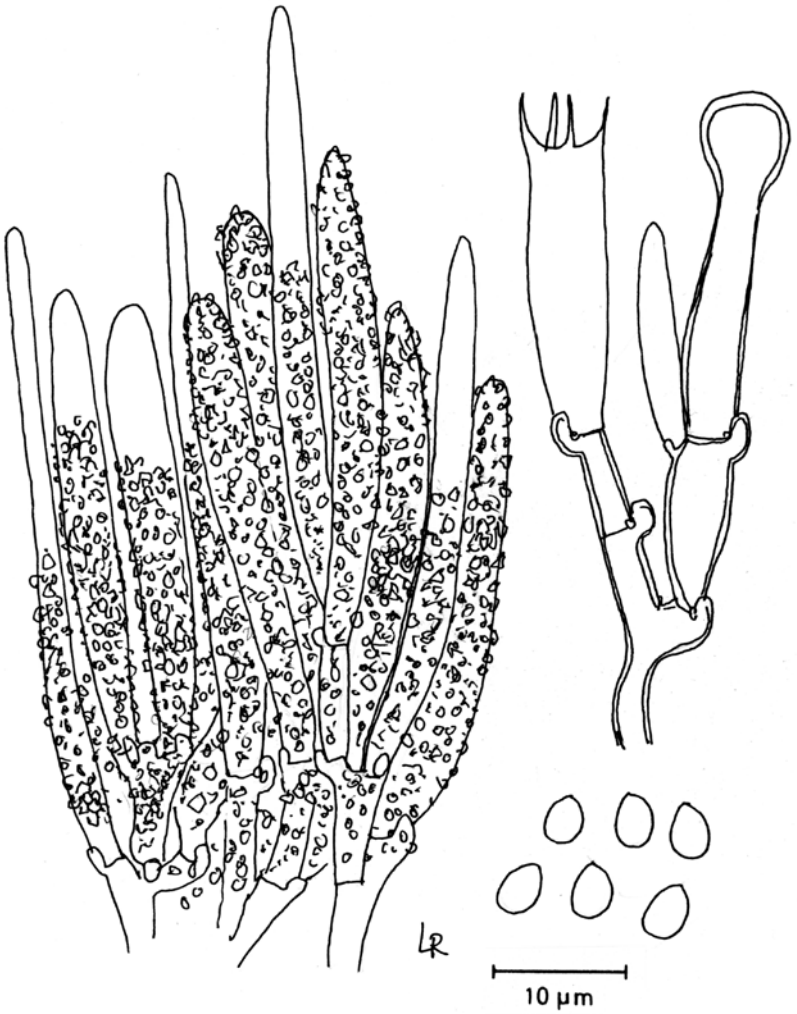

Fig. 4. *Xylodon tenellus* Encrusted aculei, terminal hyphal branch with basidium and capitate cystidium and basidiospores. From the holotype.

Xylodon tenellus Hjortstam & Ryvarden **sp. nov.** **Fig. 4**
Basidioma resupinatum, effusum, laxe adnatum. Hymenophorum odontioideum; aculeis parvis, 0.2-0.4 mm, aliquantum penicillatis, 8-10/mm. Systema hyphale monomiticum; hyphae praecipue obtusae, tenuitunicatae vel crassiusculae, fasciculatae, valde incrustatae,3-4 µm latae, hyphae ceterae tenuitunicatae, crassiusculae, leaves, 3-3.5(4.5) µm, omnino fibulatae. Cystidia pauca, capitata, ut videtur laevia, tenutunicata, 30-60 µm longa. Basidia 12-15(-20) x 4-4.5 µm, 4 sterigmatibus. Sporae fere globosae, leves, tenuitunicatae, 4.25 µm diam. vel 4 x 4.5 µm, inamyloideis, indextrinoideis, acyanophilis.
Holotypus: Venezuela, Estado Amazonas, Yutajé, on dead deciduous wood, 12-19.IV.1997, L. Ryvarden 40394 (O).
Paratypes: Venezuela, Estado Amazonas, Yutajé, on deciduous wood, 12-19.IV.1997, L. Ryvarden 40363 (O); Venezuela, Estado Aragua, Parque Nacional Henri Pittier, Rancho Grande Research Station, on wood, 11.XII.1999, B.L. Harris et al. 193 (Hjm Priv. Herb.); Brazil, São Paulo, Santos, Cananeia, Ilha do Cardoso, on branches of deciduous wood, 2-5.II.1987, D.N. Pegler, K. Hjortstam, & L. Ryvarden, L. Ryvarden 24746 (Hjm Priv. Herb. There is also a duplicate in Kew as *Hyphodontia tenuis* Hjortstam, ined.).
Basidiome resupinate, effused, loosely adnate, soft, thin. Hymenophore whitish, distinctly odontioid, but with short aculei, less than 0.2-0.4 mm, often crowded, apically somewhat penicillate, generally 8-10 per mm. Margin not prominent. Hyphal system monomitic; aculeal hyphae obtuse, thin-walled or slightly thick-walled, protruding in bundles and provided with abundant crystals, 3-4 µm wide, other hyphae generally smooth, thin-walled or becoming thick-walled, 3-3.5(4.5) µm wide, all hyphae with clamp-connections. Cystidia often few and mainly in the aculei, capitate, seemingly smooth, thin-walled, 30-60 µm long. Basidia 12-15(-20) x 4-4.5 µm, with four sterigmata and a basal clamp-connection. Spores almost globose, smooth, thin-walled, 4.25 µm across or 4 x 4.5 µm, inamyloid, indextrinoid and acyanophilous.
In general aspect this species is reminiscent of *Fibrodontia brevidens* (Pat.) Hjortstam & Ryvarden, but distinctly separated by its monomitic hyphal system, slightly smaller and globoid spores ((4-)4.5-5 x 3.5-4.5 µm in *F. brevidens*), and presence of capitate cystidia. The incrusted aculeal hyphae are distinctive in *X. tenellus* and together with the globoid spores it should be easily recognized.

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