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Papers are accepted by invitation only.

Nomenclaturial novelties proposed in this volume:
New genera:
Lyoathelia Hjortstam & Ryvarden
Globuliciopsis Hjortstam & Ryvarden
Parvodontia Hjortstam & Ryvarden

New species
Duportella jordaensis Hjortstam & Ryvarden
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Hyphodontia pruniacea Hjortstam & Ryvarden
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New combinations:
Lyoathelia laxa (Burt) Hjortstam & Ryvarden
Mycoaciella badia (Pat.) Hjortstam & Ryvarden
Nodotia gomezii (Lopez & Wright) Hjortstam & Ryvarden
Nodotia lyndoniae (D. A. Reid) Hjortstam & Ryvarden
Porostereum vibrans (Berk. & W. A. Curtis) Ryvarden

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Contents:

1: Some new and noteworthy corticioid fungi (Basidiomycotina, Aphyllophorales) from Japan

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Abstract
The new genus *Lyoathelia* with *Peniophora laxa* Burt as type is described. Five corticioid species are reported as new from Japan viz., *Byssomerulius albostramineus, Hyphodontia juniperi, Lopharia mirabilis, Phlebiopsis himalayensis,*and *Radulomyces rickii.*

Introduction
Some years ago one of us (LR) made some collections in Japan which finally have been examined.
Among these a restricted number of species has not previously been reported from Japan and they are given below. The specimens are deposited in the Oslo University herbarium (O).

Byssomerulius albostramineus (Torrend) Hjortstam, Windahlia 17:56, 1987,
Merulius albostramineus Torrend, Broteria, Bot. 11:70, 1913,
Meruliopsis albostraminea (Torrend) Jülich & Stalpers, Verh. Kon. Ned. Akad. Wet., Afd. Natuurk., Tweede Reeks 74:154, 1980,
Ceraceomerulius albostramineus (Torrend) Ginns, Can. J. Bot. 54 (1-2):107, 1976.
Specimen examined: Yamanashi, Pref., Mt. Fujii, Shoji-guchi, on *Abies*, 5.IX.1983, L. Ryvarden 211615.
Basidiome resupinate, hymenophore mainly distinctly merulioid, bright orange to reddish, usually paler when stored in the herbarium, margin whitish.
Hyphal system monomitic, subicular texture loosely arranged, hyphae thin to moderately thick-walled, generally 3-4(-6) µm wide, subhymenial hyphae short-celled,

thin-walled and densely arranged, 3-4 µm wide, all hyphae without clamp connections (occasional clamps on the basal hyphae not observed in the specimen).
Cystidia thin-walled, tubular, hyaline, smooth or sometimes sparsely encrusted, 30-50(-60) µm long and 4-6 µm wide, apically normally widened.
Basidia narrowly clavate, 15-20(-25) x 4-5 µm, with four sterigmata and without a basal clamp connection.
Basidiospores curved and almost allantoid, often slightly bent at the basal part, thin-walled, about 4-5(5.5-6) x 1.5-2 µm, inamyloid, indextrinoid and acyanophilous.
Substrate. Coniferous wood.
Distribution. Circumpolar in the boreal conifer zone.
Remarks. The species is recognizable by the merulioid basidiome, tubular cystidia and small, somewhat allantoid spores. There is no record from subtropical or tropical areas, but known from Southern Australia (see Ginns, 1976). *Byssomerulius rubicundus* (Litsch.) Parmasto, originally described from Siberia, seems to be the same.

Hyphodontia juniperi (Bourdot & Galzin) J. Erikss. & Hjortstam,
Corticiaceae North Eur. 4:666, 1976.
Specimen examined: Tochigi, Nikke, Senjogahara, on *Cryptomeria* 31.X.1991, L. Ryvarden 30292.
Description of the species, mainly from Eriksson and Ryvarden (1981).
Basidiome resupinate, crustaceous, 0.2-0.6 mm thick, closely adnate and not easily detachable, hymenophore chalky to cream-coloured, at first smooth, then with small, separated aculei, subiculum as a rule distinctly developed, composed of hyphae with slight wall thickening and abundant, irregular mineral matter, margin thin, slightly farinose or undifferentiated.
Hyphal system monomitic; hyphae 2.5 - 3 µm wide, encrusted, thin to moderately thick-walled. All hyphae with clamp connections.
Cystidia irregularly shaped, acute, thin-walled and often slightly encrusted with mineral matter, 25-30(-40) µm long.
Basidia at first short-clavate, then elongated clavate and with a median constriction, thin-walled, 15-25 x 4-4.5 µm, with four sterigmata and a basal clamp connection.
Basidiospores (usually difficult to find and few in the specimens) broadly ellipsoid, smooth, thin-walled, 4.5-5(-5.5) x 3-3.5(-4) µm, inamyloid, indextrinoid and acyanophilous.
Substrate. Coniferous wood.
Distribution. The species was originally described from France and has probably its main distribution in the southern part of Europe, generally on *Juniperus* and *Cupressus*. In North America reported only from Texas on *Juniperus* by Ginns and Lefebvre (1993). For further information see Langer (1994), but the specimens he mentioned from Kenya and Ethiopia represent *Hyphodontia stratosa* Hjortstam and Ryvarden.
Remarks. It should be noted that the species is easily confused with *Hyphodontia crustosa* (Pers.: Fr.) J. Erikss., especially when the basidiomes are more or less

smooth in the latter. A separating characteristic is the morphology of the spores. In *H. crustosa* they are cylindrical, 5-6.5 x 2.5-3 µm, whereas in *H. juniperi* they are broadly ellipsoid, 4.5-5.5 x 3-3.5(-4) µm.

Lopharia mirabilis (Berk. & Broome) Pat., Bull. Soc. Mycol. France 11:14, 1895, *Radulum mirabile* Berk. & Broome, J. Linn. Soc. Bot. 14:61, 1873.
Specimen examined: Tochigi, Nikko, Senjogahara, on *Weigela* 31.X.1991, L. Ryvarden 30255.
Basidiome effused, reflexed to totally resupinate, sometimes almost orbicular, coriaceous when fresh, hard when dried, hymenophore tuberculate, odontioid, irpicoid or even semiporoid, beige to cork-coloured, usually pilose by numerous projecting cystidia (metuloids).
Hyphal system dimitic; skeletal hyphae 3-6 µm wide, thick-walled, hyaline to subhyaline, straight to sinuous, other hyphae thin-walled to moderately thick-walled, 2-4 µm wide, with clamp connections, but these can be difficult to detect.
Metuloid cystidia numerous, large, encrusted with mineral matter, slightly projecting above the basidia, 50-150(-200) x 12-25(-30) µm, hyaline to pale yellowish with age, arising both from the subhymenial layer and from skeletal hyphae.
Basidia more or less clavate with a tapering base, 40-60 x 8-10 µm, with four sterigmata and a basal clamp connection.
Basidiospores broadly cylindrical, smooth, thin-walled, hyaline, 10-16 x 6-8 µm, inamyloid, indextrinoid and acyanophilous.
Remarks. *Lopharia mirabilis*, originally described from Sri Lanka and has a paleotropic distribution and known from Western and Southern Africa to East Asia. The specimen above is the first record outside the tropical area. Microscopically *Lopharia cinerascens* (Schwein.) G. Cunn. is similar, but completely smooth, except for the projecting cystidia.

LYOATHELIA Hjortstam & Ryvarden gen. nov.
Basidioma resupinatum, laxe adnatum, pelliculare vel membranaceum, leve, subiculum tenue, albidum, filiis rarioribus vel distinctis. Systema hyphale monomiticum; hyphae tenuitunicatae vel incrassatae, plus minus incrustatae, fibulatae. Cystidia capitata, moderate incrustata, generatim 35-60 µm longa. Basidia pedunculata, tenuitunicata, comparate grandia, circiter 18-25 µm longa, 7-9 µm lata, 4 sterigmatibus, sporis fere globosis, tenuitunicatis vel modice crassitunicatis, levibus, ad modum 8 x 7 µm, neque amyloidibus, neque dextrinoidibus, neque cyanophilis.
Generic type: *Peniophora laxa* Burt.
Etymology: ëýù, I loose, and *Athelia*.
This new genus is based on a thin whitish subiculum and with mycelial cords, fairly large and capitate cystidia and with somewhat large and pedunculate basidia bearing four almost globose, more or less thin-walled spores.

Lyoathelia laxa (Burt) Hjortstam & Ryvarden comb. nov.,
Basionym: *Peniophora laxa* Burt, Ann. Mo. Bot. Gard. 12:224, 1926,
Athelia laxa (Burt) Jülich, Willdenowia, Beih. 7:90, 1972,
Hyphodontia laxa (Burt) Y. Hayashi, Bull. Gov. For. Exp. Sta. Meguro 260: 52, 1974.
For an excellent illustration, see Maekawa (1993).
Specimen examined: Ibaraki, Kasama, on *Cryptomeria*, 5.IX.1991, L. Ryvarden 30383.
Basidiome resupinate, loosely adnate, effused, pellicular, 50-100 µm thick, fragile, hymenophore smooth, white to pale yellowish white, margin white, thinning out, fibrillose or fimbriate, sometimes with mycelial cords.
Hyphal system monomitic; subiculum whitish, with thin-walled and narrow hyphae, 1.5-3 µm wide, smooth or slightly encrusted, subhymenial hyphae short-celled, up to 5 µm wide, all hyphae with clamp connections.
Cystidia distinctly capitate, sometimes with an adventitious septum, thin-walled, 35-60 x 5.5-7 µm, sparsely encrusted, projecting as much as 40 µm beyond the hymenial surface.
Basidia pedunculate, often with one or two oil drops in the protoplasm, thin-walled, 18-25(-30) x 7-9 µm, with four sterigmata and a basal clamp connection.
Basidiospores almost globose, thin- to moderately thick-walled, smooth, with a distinct apiculus, 6-8 x 5.5-6.5(-7) µm, inamyloid, indextrinoid and acyanophilous.
Substrate. Coniferous wood.
Distribution. Jana and North America.
Remarks. *Athelia*, typified with *Athelia epiphylla* Pers. is not a proper place for *Peniophora laxa*, preferably by the distinct subiculum and fairly large cystidia. Also *Hyphodontia* sensu stricto is not an appropriate place and at present it is restricted to about five species, all with the same basic characteristics as the type (hyphae, cystidia, basidia and spores).
Peniophora laxa Burt is, according to the literature, a rare species. In the original description only one specimen (the holotype) was mentioned (British Colombia, J. Macoun 8, BPI). Outside Canada, obviously Slysh (1960) was the first to report it from USA (Connecticut). Jülich (1972) placed it in *Athelia* and Hayashi (1974) reported it from Japan (Honshu) on conifer and he placed the species in *Hyphodontia.* Maekawa (1993) reported additional specimens (as *Athelia*) from Japan, on *Abies*, *Tsuga*, and *Larix* and finally Ginns and Lefebvre (1993) included Pennsylvania and Virginia, to the distribution list. So far the species is not known elsewhere.
It should also be mentioned that Langer (1994) synonymized *Hyphoderma nudicephalum* Gilb. & Blackwell with *P. laxa*. The former has, however, nothing to do with *P. laxa*, but belongs in *Hyphoderma* sens. str. (*H. setigerum*-group).

Phlebiopsis himalayensis Dhingra, Nova Hedwigia 44:222, 1987,
Phanerochaete himalayensis (Dhingra) Sheng H. Wu, Ann. Bot. Fenn. 142:45, 1990.

Specimen examined: Ibaraki, Kasama, host unknown, 5.IX.1991, L. Ryvarden 30353.
Basidiome effused, resupinate, not easily separated from the wood, hymenophore smooth, pale ochraceous or greyish in the herbarium, immediately reddish in KOH, margin of the same colour as the hymenophore, without mycelial cords.
Hyphal system monomitic; subicular hyphae moderately thick-walled and swelling slightly in KOH, 3-4(-5) µm wide, other hyphae thin-walled, 2.5-3 µm wide, all hyphae hyaline and without clamp connections.
Cystidia (metuloids) numerous, moderately thick-walled or thick-walled, hyaline, usually 30-50 µm long.
Basidia narrowly clavate, 25-30 µm long and in the upper part 4-4.5(-5) µm wide.
Basidiospores broadly ellipsoid, smooth, thin-walled, 3.75-5 x 2.75-3 µm, inamyloid, indextrinoid and acyanophilous.
Substrate. Hardwood.
Distribution. Originally described from India (West Bengal) and reported from Taiwan by Wu (1990) and now from Japan.
Remarks. The species should be easy to recognize as the hymenophore become purplish when treated with KOH. Wu (1998) described *Phanerochaete rubescens* from Taiwan and this seems similar but has, according to the description, a sulphur yellow margin and mycelial cords.

Radulomyces rickii (Bres.) M.P. Christ., Dansk Bot. Ark. 19:128, 1960,
Corticium rickii Bres, in Rick Österr. Bot. Zeitschr. 48: 136, 1898,
Cerocorticium rickii (Bres.) Boidin et al., Cryptog., Mycol. 9:45, 1988.
Specimen examined: Fukushima, Tadami, Mt. Asakusa, host unknown, 30.X.1991 L. Ryvarden 30178, , Fukushima,
Radulomyces rickii seems to be similar to the common species *Radulomyces confluens* (Fr.:Fr.) M.P. Christ., but considerably more dense and with smaller spores which are slightly warted. The ornamentation is nearly impossible to observe in KOH, but in both Melzer and Cotton blue (1000 x) they are visible. The spores are almost globose, 7-8 µm diam. See further Boidin et al. (1988) who gave an excellent photo of the spores.
The species is originally described from Austria, but further distribution is not well known. It is known from France, probably from England and Denmark and Malençon (1952) reported it from Morocco, but with somewhat different spores (7-9.65

x 6.2-8.25 µm). Additional records are known from Argentina, Brazil, and Colombia.

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2: Tropical species of Mycoaciella (Basidiomycotina, Aphyllophorales)

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Abstract
The new combination *Mycoaciella badia* is proposed for *Odontia badia*, a species strongly reminiscent of the generic type of *Mycoaciella*, but primarily separated by absence of clamp connections. *Mycoaciella badia* is new from Brazil and Malawi and *M. hinnulea* is reported for the first time from Venezuela. A key to species of *Mycoaciella* is provided.

Mycoaciella J. Erikss. & Ryvarden, Corticiaceae North Eur. 5:901, 1978.
Generic type: *Resinicium bisporum* Stalpers.
Basidiome resupinate, effused, hymenophore hydnoid, commonly brownish when dried, mainly with dense, more or less cylindrical aculei, margin paler, often yellowish. Hyphal system dimitic [or trimitic with some kind of binding-hyphae, microbinding hyphae (Nakasone 2002), quasi-binding hyphae (Wu 1990)], skeletal hyphae straight and especially in the centre part of the aculei parallelly arranged, dextrinoid or indextrinoid, sometimes encrusted with hyaline crystals, other hyphae with or without clamp connections, thin-walled or with a slight wall thickening. Cystidia, if present, fairly small, with an apical globule of excreted, resinous matter. Basidia normally with four sterigmata bearing narrowly ellipsoid or subglobose and thin-walled spores which are indextrinoid, inamyloid, acyanophilous.
Remarks. Nakasone (2002) placed *Mycoaciella* in synonymy with *Phlebia* based on microscopical study. She also noticed that "*Phlebia* now contains species with increasingly diverse morphologies".
In a broad sense *Phlebia* is a large genus, with about 80 species, but as *sensu stricto* the genus consists of *P. incarnata* (Schwein.) Burds. & Nakasone, *P. radiata* Fr., *P. rufa* (Fr.) M.P. Christ., and *P. tremellosus* (Schrad.:Fr.) Burds. & Nakasone. Two other species are generally accepted, namely *P. acerina* Peck and *P. vassilkovii* Parmasto. The first species seems to be obscurely separated from *P. rufa* and the latter is possible the same as *P. radiata*.
In our opinion both the macro and-micromorphology of *Mycoaciella* is similar to the

prevalent concept of *Mycoacia*, but can primarily be separated by skeletal hyphae. We therefore use the concept of the genus established by Eriksson & Ryvarden (1978).
All species are apparently rare in the tropical areas, but could as well be misinterpreted as a *Mycoacia* because of their macromorphology.

Mycoaciella badia (Pat.) Hjortstam & Ryvarden comb. nov.
Basionym: *Odontia badia* Pat., J. Bot. (Morot) 11:342, 1897.
Type locality: Vietnamn. Distribution: U.S.A. in Florida and from Costa Rica, Iran (Nakasone 2002).
Specimens examined: Brazil, São Paulo, Santos, Cananeia, Ilha do Cardoso, 2-5. II.1987, D. Pegler, K. Hjortstam, and L. Ryvarden, Ryv. 16759; Malawi, Southern Prov., Thyolo distr., Thyolo Mt. alt. 1100-1400 m, 13.III.1973, L. Ryvarden 11211 (O and duplicates in Hjm priv. herb.).

For a detailed description, see Nakasone (2002).
It should be easy to recognize this species which has fairly long aculei, generally 1-1.5 mm or in some cases, especially when growing vertically upp to 2-3 mm long, dimitic hyphal system, hyphae without clamp-connections, though somewhat difficult to state, and cystidia covered with a globule of yellowish, resinous matter. Previously not reported from Brazil and Malawi.

Mycoaciella bispora (Stalpers) J. Erikss. & Ryvarden, Corticiaceae North Eur. 5:902, 1978.
Type locality: France. Distribution: Mainly from the Northern Hemisphere (Europe and U.S.A.), but reported by Nakasone (2002) from U.S.A. Louisiana.
For a detailed description and illustration see Eriksson, Hjortstam and Ryvarden (1978).
The species is strikingly similar to *M. hinnulea*, but generally easy to separated by shorter spores.

Mycoaciella brunnea (Jülich) Hjortstam & Spooner, Kew Bull. 45:309, 1990.
Only known from the type locality: New Guinea.
This is the generic type of *Ceraceohydnum* Jülich, but Hjortstam, Spooner and Oldridge (1990) considered this genus synonymous with *Mycoaciella*.
It should be noted that cystidia are wanting, but hyphal ends occur and are slightly projecting above the basidia.

Mycoaciella hinnulea (Bres.) Hjortstam & Ryvarden, Mycotaxon 10: 281, 1980.
Type locality: Brazil.
Specimens examined: Venezuela, Estad Bolivar, Las Nieves, 12.VI.1995, Leif Ryvarden No. 37687 (O and a duplicate in Hjm priv. herb.).

For a description see Hjortstam and Ryvarden (1980) and Nakasone (2002).
It should be noted that clamp connections often are difficult to observe.
Previously not reported from Venezuela and so far the only specimen known except the type and paratype (Rick 20), both from Sao Leopoldo.

Key to species of *Mycoaciella*

1. Hyphae without clamp connections, spores (3.5-)4.5-5 (-6) x 2-2.5(-3) µm **.....M. *badia***
1. Hyphae with clamp connections 2

2. Cystidia absent, spores subglobose 2.75-3.5 x 2.25-2.5 µm.....**M. *brunnea***
2. Cystidia present, spores larger 3

3. Spores 4-5.5(-6) x 2.5-3 µm **.....M. *bispora***
3. Spores 6-7 x 3-3.5 µm **.....M. *hinnulea***

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Hjortstam, K., Spooner, B. M. and Oldridge, S. G. 1990. Some Aphyllophorales and Heterobasidiomycetes from Sabah, Malaysia. Kew Bull. 45:303-322.
Nakasone, K. K. 2002. *Mycoaciella*, a synonym of *Phlebia*. Mycotaxon 81:477-490.
Wu, S. H. 1990. The Corticiaceae (Basidiomycetes) subfamilies Phlebioideae, Phanerochaetoideae and Hyphodermoideae in Taiwan. Acta Bot.Fennica 142: 1-123.

3: Reevalution of Nodotia Hjortstam (Corticioid fungi, Basidiomycotina, Aphyllophorales)

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Abstract
The generic name *Nodotia* is reintroduced and two new combinations are proposed: *Nodotia gomezii* and *Nodotia lyndoniae* described from Argentina and Australia respectively.

Introduction
The genus *Nodotia* with the generic type *N. aspera* (Hjortstam 1987) was described from a specimen recorded in Tanzania. The specimen was compared with the generic type of *Hypochnicium* (*H. bombycinum*) and showed to be different from the prevalent concept by some kind of projecting and encrusted hyphal ends (pseudodimitic). Previously Lopez and Wright (1985) described *Hypochnicium gomezii*, a species with subglobose, thick-walled spores and with projecting, encrusted hyphae. Subsequently, Hjortstam (1995) made a combination to *Hypochnicium* of *Odontia lyndoniae* D.A. Reid (1956), described from Australia and found this was in accordance with the type of *Nodotia aspera*. The latter generic name was placed in synonymy with *Hypochnicium*.
Another, strikingly similar species, *Hypochnicium odontioidescens* Boidin and Gilles (2000) was described from Réunion. However, we have not studied the type and Boidin and Gilles (loc.cit.) pointed out a similarity to *Hypochnicium rickii* (see Hjortstam and Ryvarden, 1982). At present we leave these two species in *Hypochnicium*.
Both *Odontia lyndoniae* and *Hypochnicium gomezii* seem to be a deviating element in *Hypochnicium* and thus, we therefore re-introduce the generic name *Nodotia* for these.

New combinations.

Based on the considerations given above, the following combinations are proposed:
Nodotia gomezii (Lopez & Wright) Hjortstam & Ryvarden comb. nov.
Basionym: *Hypochnicium gomezii* Lopez & Wright, Mycotaxon 23:439, 1985.
For detailed description and illustration see Lopez and Wright (loc.cit.).
Remarks.*Nodotia gomezii* is similar to the next species, but may be separated by smaller spores, in the original description as 6-9 x 5.5-6.5 µm. In the Brazilian specimens the basidiome varies from fairly hard, with aculei up to 1.5 mm long to more soft with shorter aculei. The spores are also more or less globose, 6-7.5 µm diam., otherwise with the same kind of encrusted hyphal ends and morphology of the hyphae.
Two other specimens from Venezuela are within the concept of *Nodotia*, but seem to be separated from *N. gomezii*. In Ryv. 40465/C the basidiome is much harder and with smaller, almost globose spores, 5.5-6 µm diam. The spores in Ryv. 35139 are also smaller, about 5 x 4.5 µm or 4.5-5 µm diam., but the basidiome is thin, very soft with minute aculei.
Distribution: Only known from Argentina and Brazil.
Specimens examined:
Argentina, Buenos Aires, Gdor, Castro, May 1982, *Eucalyptus viminalis*, leg. Lopez, Romero & Cabral, holotype of *Hypochnicium gomezii* (BAFC 30096); Brazil, São Paulo, Santos, Cananeia, Ihla do Cardoso, on hardwood on the ground, 2-5.II.1987, D. Pegler, K. Hjortstam and L. Ryvarden, Ryv. No. 24791; São Paulo, Parque Estados das Fontes do Ipiranga, om palm, 16-24.I.1987, D. Pegler, K. Hjortstam and L. Ryvarden, Ryv. No. 24289; ditto on hardwood on the ground, D. Pegler, K. Hjortstam and L. Ryvarden, Ryv. No. 24303 (O and Hjortstam priv. Herb.).
Divergent specimens examined: Venezuela, Estado Bolivar, Sifontes Tumererrmo Carratera , Tumererrmo Bochinche Camp. Maderero de Lut. on hardwood, 17.XI.1994, leg. L. Ryvarden, 35139 (O, Hjortstam priv. Herb.); Venezuela, Amazonas, Yutajé, 110 m alt., on dead deciduous wood, 12-19.IV.1997, leg. Leif Ryvarden, 40465/C (O and Hjortstam priv. Herb.).

Nodotia lyndoniae (D.A. Reid) Hjortstam & Ryvarden comb. nov.
Basionym: *Odontia lyndoniae* D.A. Reid, Kew Bull. 10:641, 1955.
There was only a Latin diagnosis in the original description, but Cunningham (1959) supplied a full description of the species, based on the type as well as on Australian specimens.
The Latin diagnosis of *Odontia lyndoniae* runs as follows:
Sporophorum ochraceo-cremeum, resupinatum, aculeis minutis, tenuibus, subulatis, et apices fimbriatis, 0.05 cm longis ornatum; Hyphae hyalinae 3-5 µm latae, fibulatae, muris tenuibus; Cystidia elongata plus minus cylindrica vel fusiformia, usque ad 250 µm longa, 9 µm lata, septata, muris crassis, granulis incrustata. Sporae 7-10 x 5.5-6.5 µm. ovatae, hyalinae. Note that Boidin and Gilles (2000) reported the spores as 7.5-8 x 6.5 - 7.5 µm.
Nodotia aspera.Hjortstam,

Mycotaxon 28:33-34, 1987.
Basidiome resupinate, distinctly odontioid with dense and especially when aged, crowded and penicillate aculei, often less than 0.25-0.5 mm long and 3-4/mm, pale ochraceous, margin indistinct or slightly fibrillose.
Hyphal system pseudodimitic with thick-walled, tufted and projecting hyphal ends in the centre of the aculei which generally arising from thick-walled basal hyphae, with clamp connections at every septa, up to 200 µm long and with several adventitious septa along their lenght, apically strongly encrusted with crystalline matter, subiculum relatively soft, consisting of thin-or thick-walled hyphae, mostly branched at right angle close to the clamp connections, about 4-5 µm wide, subhymenial hyphae thin-walled or with thickened walls.
Basidia more or less clavate, somewhat constricted and sinuous, 25-35(-40) x 6-8 µm [(in the original description erroneously given as 40-50(-60) x 6-7(-8) µm)], with four sterigmata and a basal clamp connection.
Basidiospores subglobose to ellipsoid or sometimes almost globose, smooth, moderately thick-walled to thick-walled, 7.5-8 x 6.5-7.5 µm, generally with an indistinctly cyanophilous reaction, inamyloid and indextrinoid.
Distribution: Australia, New Zealand, Tanzania and Burundi.
Specimens examined:
Tanzania, Kilimanjaro Prov.,Mt Kilimanjaro W slope, E of Lemosho Glades, montane forest, alt. c. 2400 m, 15.II.1970, leg. L. Ryvarden, holotype of *Nodotia aspera* (K). Isotype. O and in Hjortstam priv. Herb.); Australia, Victoria, Leongatha, 9.VI.1953, leg. Mrs. E. Lyndon, holotype of *Odontia lyndoniae* (K); Burundi, Bururi, 29.I.1979, J. Rammeloo 6402 (O and Hjortstam priv. Herb.).

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Cunningham, G. H. 1959. Hydnaceae of New Zealand Part II - The Genus *Odontia*. Trans.Roy.Soc.N.Z. 86:65-103.
Hjortstam, K. 1985. Two new genera and some new combinations of corticioid fungi (Basidiomycotina, Aphyllophorales) from tropical and subtropical areas. Mycotaxon 54:183-193.
Hjortstam, K. 1987. Studies in Tropical Corticiaceae (Basidiomycetes) VII. Specimens from East Africa, collected by L. Ryvarden. II. Mycotaxon 28:19-37.
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Lopez, S.E., and Wright, J.E. 1985. A new species of *Hypochnicium* (Corticiaceae) from Argentina. Mycotaxon 23:439-443
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4: Some new tropical genera and species of corticioid fungi (Basidiomycotina, Aphyllophorales)

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Abstract
Two new genera are described viz.: *Globuliciopsis* with *G. fuegiana* from Argentina as type and *Parvodontia* with *P. luteocystidia* from Brazil as type. Additionally four new species are described viz.: *Duportella jordaoensis* and *Phanerochaete infuscata* from Brazil, *Mycoacia rubiginosa* from Colombia and *Hyphodontia pruinacea* from Tanzania. Keys to supposedly related and similar genera with *Globuliciopsis* and to non-cystidiate species of *Mycoacia* are provided.

Duportella jordaoensis Hjortstam & Ryvarden spec. nov.
Fig. 1
Basidioma resupinatum, aliquantum laxe adnatum, aegre separatum. Hymenophorum plus minus leve, rubiginosum vel atrobrunneum ubi vivum et humidum, ravidum tum plus minus violaceum ubi siccatum. Subiculum distinctum, brunneolum, 0.5-1.5 mm crassum; hyphis modice crassitunicatis, (3.5-)4-6(-7) µm latis, fibulatis, plerumque levibus, infuscatis, interdum agglutinatis. Systema hyphale monomiticum; hyphis tenuitunicatis, vel crassiusculis, fibulatis, levis, hyalinis vel pallide brunneis. Gloeocystidia generaliter numerosa, obtusa, pro parte maxima 50-80 µm vel 100 150 µm, extensa 4-)5-6 µm lata; sulphopositivan contentia. Metuloidae dispersae, primo hyalinae, moderate crassitunicatae, tum plus minus fuscatae, distincte crassitunicatae, ad modum 60 x 8 µm. Basidia anguste clavata, leviter constricta, 30-40 x 5-6 µm, 4 sterigmatibus; sporis suballantoideis vel allantoideis, tenuitunicatis, hyalinis, levibus, (4.5-)5-5.5(-6) x 2-2.2(-2.5) µm.
Holotypus: Brazil, Sao Paulo, Vale do Paraiba, Campos do Jordao, Parque Estados de Campos do Jordao, on wood on the ground, 27-28.I.1987, D. Pegler, Kurt Hjortstam, Leif Ryvarden, L. Ryv. No. 24394 (O). Isotypus: (Hjortstam priv.Herb.).

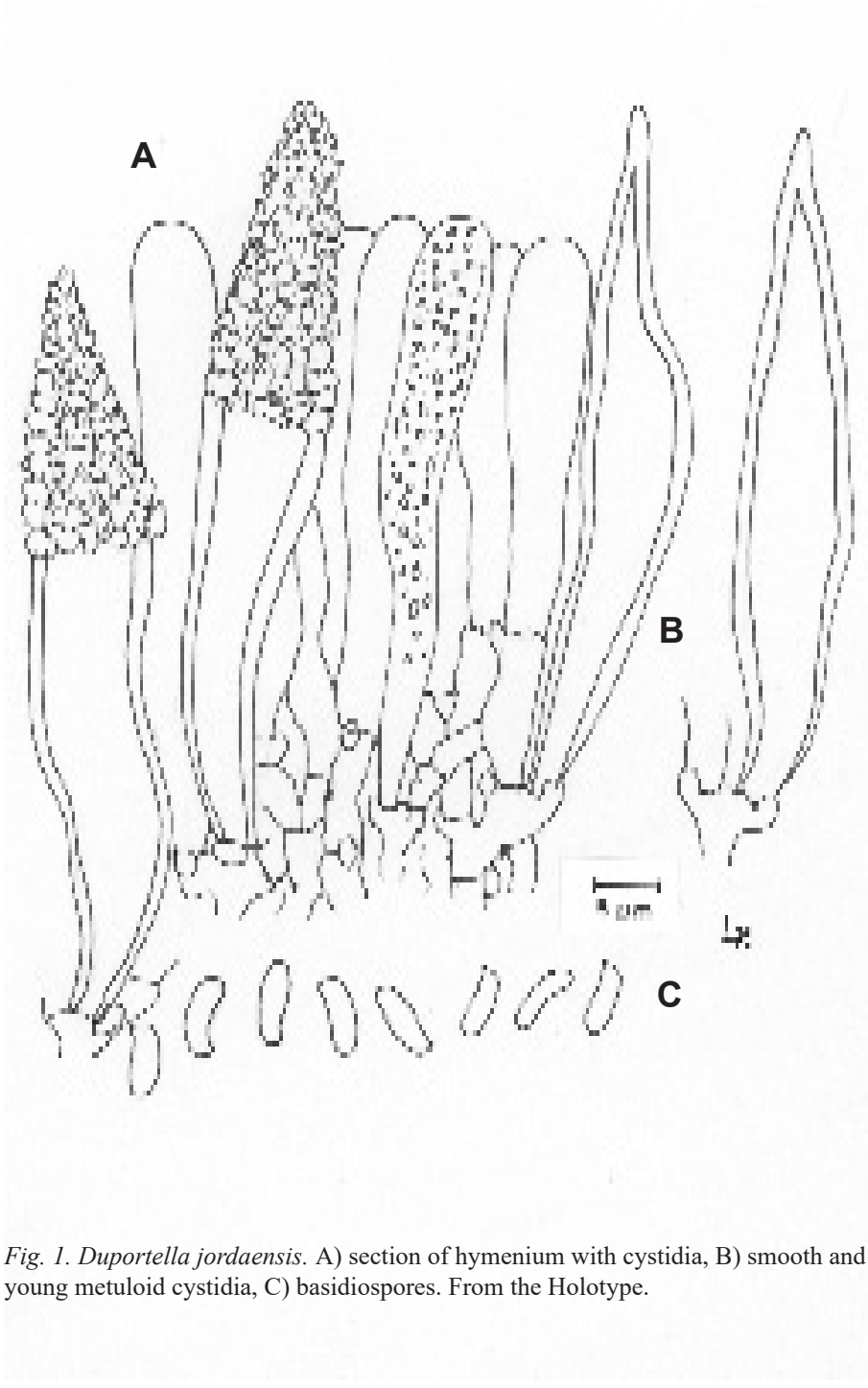

Fig. 1. Duportella jordaensis. A) section of hymenium with cystidia, B) smooth and young metuloid cystidia, C) basidiospores. From the Holotype.

Basidiome resupinate, almost membranous, rather loosely attached to the substratum, 0.5-1.5 mm thick, subiculum brownish and felted, about 0.5 mm thick, reddish brown to dark brown when fresh and wet, hymenophore smooth to very slightly pilose by projecting cystidia, reddish brown to dark brown when fresh and wet, when dry more or less violaceous brown, subiculum composed by moderately thick-walled hyphae, mostly smooth, yellowish brown, sometimes agglutinated in narrow strands, individual hyphae (3.5-)4-6(-7) µm wide.
Hyphal system monomitic; generative hyphae hyaline, other hyphae pale yellow to yellowish brown, thin-walled to moderately thick walled; all hyphae with clamp connections.
Gloeocystidia generally numerous, obtuse, with granular contents, 50-80 µm long, sometimes extended to 100-150 µm, (4-)5-6 µm wide in the middle part, darkening (bluish-black) in sulphovanilline.
Metuloid cystidia scattered, at first hyaline and moderately thick-walled then brownish and distinctly thick-walled, about 60 x 8 µm.
Basidia in a relatively dense palisade, narrowly clavate, slightly constricted or sinuous, 30-40 (-50) x 5-6 µm, with four sterigmata and a basal clamp connection.
Basidiospores suballantoid to allantoid, smooth, thin-walled, (4.5-) 5 5.5(-6) x 2-2.2(-2.5) µm.
Substrate. Rotten hardwood.
Distribution. Known only from the type locality.
Remarks. Apart from the monomitic hyphal system this is a typical species of *Duportella* Pat. and may be recognized by the combination of felted subiculum, scattered and brownish Metuloid cystidia, and short allantoid spores.

GLOBULICIOPSIS Hjortstam & Ryvarden gen. nov.
Basidioma resupinatum, aliquantum crassum, leviter stratosum, plus minus cereum, subiculo compacto. Hymenium leve. Systema hyphale monomiticum; hyphis hyalinis, in subiculo plus minus crassitunicatis. Hyphae ceterum tenuitunicatae, hyalinae, non fibulatae. Cystidia nulla. Hyphidia conspicua, tenuitunicata. Dendrohyphidia raro, vel abundae. Basidia satis grandia, 2-4 sterigmatibus. Sporae leves, crassiusculae, hyalinae, in typo ad modum 13-15 x 11-14 µm, leviter cyanophilae, inamyloideae, indextrinoideae.
Generic type: *Globuliciopsis fuegiana* Hjortstam & Ryvarden
Basidiome resupinate, fairly thick, closely adnate, slightly stratified, pale brown. Hymenophore smooth. Subiculum compact, brownish. Hyphal system monomitic; subicular hyphae thin or moderately thick-walled, short-celled, other hyphae thin-walled, straight, all hyphae hyaline and without clamp connections. Cystidia absent, but with hyphal ends and dendrohyphidia. Basidia terminal, arranged in a relatively loose palisade, up to 100 µm long with two or sometimes three to four sterigmata. Spores almost globose, smooth, hyaline, with a slight wall thickening, lightly cya-

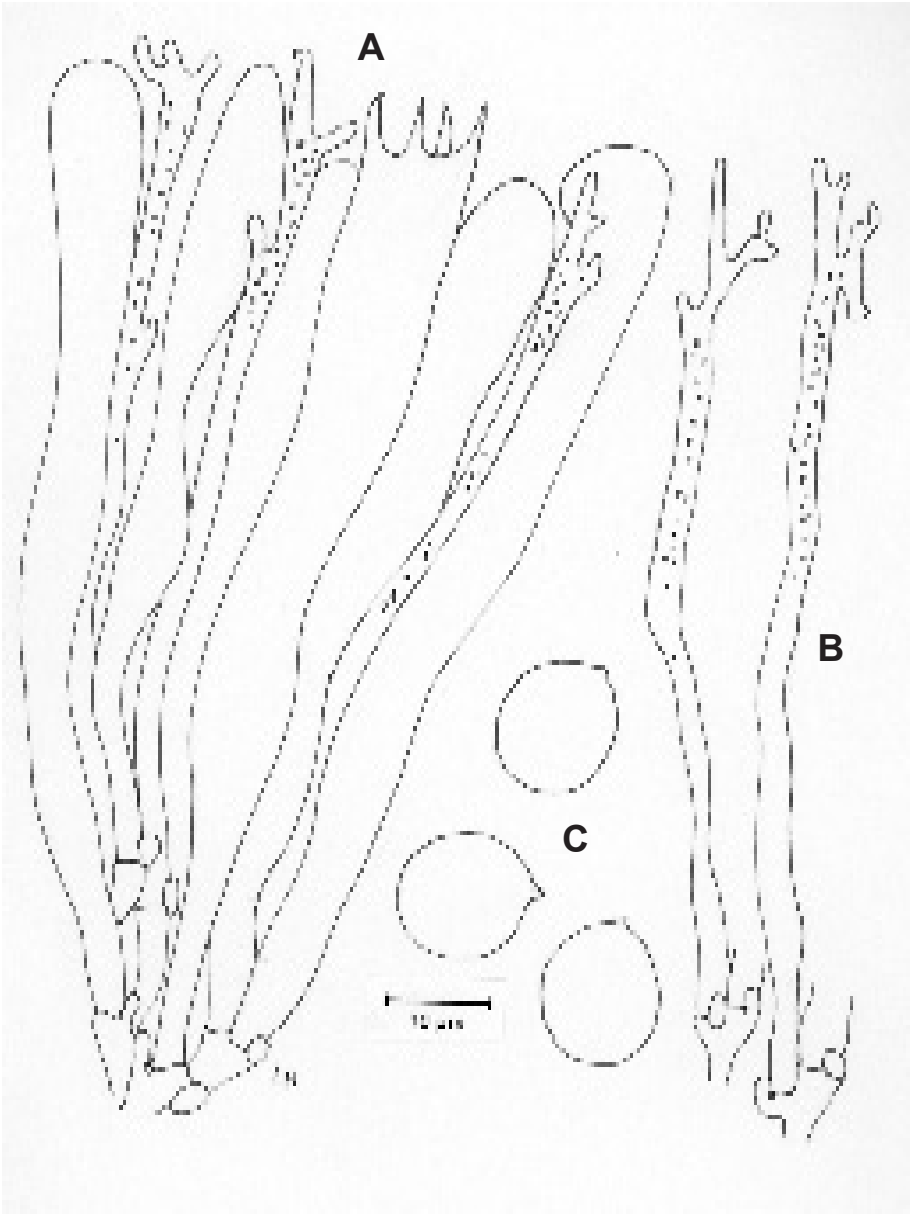

Fig. 2 Globuliciopsis fuegiana A) part of hymenium B) dendrohyphida, C) basidiospores, from the holotype.

nophilous, but without reaction in Melzers reagent.
Globuliciopsis fuegiana Hjortstam & Ryvarden spec. nov.
Fig. 2
Basidioma resupinatum, aliquantum crassum, 0.2-0.7 mm thick, leviter stratosum, plus minus cereum, subiculo compacto. Hymenium leve. Systema hyphale monomiticum; hyphis hyalinis, in subiculo plus minus crassitunicatis, 3 µm latis, fibulis nullis. Hyphae ceterum tenuitunicatae, hyalinae, plus minus rectae, 2-3 µm latae, non fibulatae. Cystidia nulla. Hyphidia conspicua, 2-3 µm lata, tenuitunicata. Dendrohyphidia raro, vel abundae. Basidia satis grandia, circiter 100 x 10-12 µm, 2-4 sterigmatibus. Sporae leves, crassiusculae, hyalinae, in typo ad modum (10-)13-15 x 11-14 µm vel 12-14 µm diametro.
Holotype: Argentina, Tierra del Fuego, Lapataia National Park, 15 km W of Ushuaia, on *Nothofagus*, 19-20.II.1982, Leif Ryvarden No. 19314 (O).
Isotype: Hjortstam Priv. Herb.

Basidiome resupinate, 0.2-0.7 mm thick, closely adnate, slightly stratified, pale brown, hymenophore smooth, subiculum compact, brownish.
Hyphal system monomitic; subicular hyphae thin or moderately thick-walled, short-celled, about 3 µm wide, other hyphae thin-walled, straight, 2-3 µm wide, all hyphae hyaline and without clamp connections.
Cystidia absent, but with hyphal ends, 2-3 µm wide, with almost parallel walls, sometimes slighty curved, hyaline, arising from subhymenium or from the subiculum, projecting above the basidia, lacking or rarely with single septum.
Dendrohyphidia rare to sometimes abundant in the subhymenium and may also occur in the subiculum.
Basidia terminal arranged in a relatively loose palisade, up to 100 µm long and 10-12 µm wide in the upper part when fully developed, with two or sometimes three to four sterigmata.
Basidiospores almost globose, (10-)13-15 x 11-14 µm or 12-14 µm diam, smooth, hyaline, with a slight wall thickening, lightly cyanophilous, no reaction in Meltzer's reagent.
Substrate. On dead hardwood.
Distribution. Known only from the type locality.
Remarks. *Globuliciopsis fuegiana* is primarily distinguished by lacking clamp connections, large basidia and subglobose to almost globose and slightly thick-walled. The stratified basidiome with a light brown colour is also of important.

Key to supposedly related or similar genera

1. Hyphae with clamp connections **2**
1. Hyphae without clamp connections **3**

2. Hyphal ends present, basidia pedunculate, 50-80 µm long, spores subglobose, 10-14 µm diam. Mainly on conifers in temperate areas **..... Globulicium**
2. Cystidia present, basidia with two sterigmata .....**Clavulicium**

3. Hymenophore mainly lemon yellow, cystidial element or hyphal ends absent, basidia with four sterigmata, spores 7-9 x 6-7 µm.
North America, Europe ..... **Membranicium delectabile**
3. With projecting hyphal ends or/and dendrohyphidia absent **.....4**

4 Hyphal ends present, basidia widened at the base, 50-70 µm long, with two to four sterigmata, spores 7-12 x 6-8 µm. Europe..... **Membranicium spurium**
4 Both with hyphal ends and dendrohyphidia, basidia slightly narrowing at the base, 80-100 µm long, spores 13-15 x 11-14 µm **.....Globuliciopsis fuegiana**

Hyphodontia pruniacea Hjortstam & Ryvarden nov.spec.
Basidioma resupinatum, laxe adnatum. Hymenophorum dense aculeatum; aculeis 0.2-0.3 µm longis, qausi 6-8/mm, fimbriatis. Systema hyphale monomiticum; hyphae basales distinctae, crassitunicatae, 3-4 µm latae, hyalinae, fibulatae. Cystidia 25-30 µm longa, subcapitata interdum subulata. Basidia suburniformia, 25-30 x 3-4 µm, 4-sterigmata. Sporae ellipsoideae, leves, tenuitunicatae, 4.75-5.25 x 3.75-4 µm.
Holotype: Tanzania, Kilimanjaro Prov., Mt. Kilimanjaro west slope, W. Kilimanjaro Forest Sta., alt. c. 1800 m, 10-11.II.1973, Leif Ryvarden No. 10223, K (M)19346. Isotypes; O, Hjm priv.herb.
Paratype: Tanzania, Kilimanjaro Prov., Mt. Kilimanjaro south slope above Mweka, alt. c. 1800 - 2300 m, 12.II.1973, Leif Ryvarden No. 10286, K (M)19347 K, O, Hjm priv.herb.

Basidiome resupinate, closely adnate, hymenophore densely aculeate, aculei about 0. 2 -0.3 mm long and 6-8/mm, mainly with a fimbriate apex.
Hyphal system monomitic; basal hyphae rather thick-walled, 3-4 µm wide; other hyphae thin-walled. All hyphae with clamp-connections.
Cystidia of one or maybe two kinds, about 25-30 µm long, subcapitate or some almost subulate. Basidia typically for the genus, suburniform with a median constriction or sinuous, with thickened basal part, 25-30 µm long and apically 3-4 µm wide, with four sterigmata and a basal clamp connection.
Basidiospores ellipsoid, smooth, thin-walled, 4.75-5.25 x 3.75-4 µm, inamyloid, indextrinoid and acyanophilous.
Substrate. On dead hardwood.
Distribution. Known only from the type locality.
Remarks. Macroscopically the species reminds one of *Hyphodontia nespori* (Bres.) J.Erikss. & Hjortstam, but easily separated by ellipsoid spores. *H. spathulata* (Schrad.: Fr.) Parmasto should also be considered, but this species has normally

flattened aculei and also some kind of gloeocystidia. Also *H. bugellensis* (Ces.) J. Erikss. and *H. pruni* (Lasch) Svrcek are both somewhat similar. The former has spores slightly thick-walled and have aculei about 8-10/mm and somewhat larger spores, (5-)5.5-6(-6.5) x 3.5-4 µm, *H. pruni* has the same kind of hymenophore, but spores are slightly smaller and thin-walled, 5.5-6.5(-7) x 3.5-4.5 µm.
Hyphodontia pruniacea belongs not in *Hyphodontia* s.s., which is restricted to species related to *H. pallidula*, see Hjortstam and Ryvarden (2002). It can possibly be included either in the subsectio Ellipsosporae Parm. or subsectio Cylindrosporae Parm., see further Parmasto (1968).

Mycoacia rubiginosa Hjortstam & Ryvarden nov.spec.
Fig. 3
Species habitu cum M. brunneofusca, sed differt subiculo stratoso, brunneolo et flavido, hyphis subiculis interdum vesicularibus. Sporae hyalinae, subglobosae, tenuitunicatae, leves, (3.75-)4-4.5 x (2.25-)2.5-2.75µm, inamyloideae, indextrinoideae, acyanophilae.
Holotype: Colombia, Magdalena, Sierra Nevada de Santa Marta. Reserva Forestal San Lorenzo, 1900-2300 m. L. Ryvarden No. 15974/B (O). Isotype: Hjortstam priv. Herb.

Basidiome resupinate, closely adnate and hydnoid, aculei reddish brown, uniformly coloured, hard in consistency, subulate or more rarely somewhat flattened, rarely branched, 1.5-3 mm long, subiculum heterogeneous, 0.1-0.5 mm thick next to the substrate reddish and hard above which a thinner, fairly soft and yellowish tissue, strongly reddish in KOH, composed of thin to moderately thick-walled and smooth hyphae, 4-5 µm wide and also with bladdery hyphal ends with the vesicular part about 10 µm wide.
Hyphal system monomitic; hyphae hyaline or pale yellowish brown and with clamp connections, almost smooth, parallely arranged in the centre of the aculei and forming a thin trama, thin-walled or with a slight wall thickening, 2-3 µm wide, ultimate hyphae thin-walled and about 4-6 µm wide.
Cystidia absent in the hymenium but some apically widened hyphae also present in the apex of the aculei.
Basidia narrowly clavate, (15-) 18-20(-25) µm, with four sterigmata and a basal clamp connection.
Basidiospores hyaline, ellipsoid, thin-walled, smooth, (3.75-) 4-4.5 x (2.25-) 2.5-2.75µm, acyanophilous and without reaction in Meltzer's reagent.
Substrate. On dead hardwood.
Distribution. Known only from the type locality.
Remarks. This is a distinctive species by its reddish colour, up to 3 mm long aculei and capitate hyphal ends in the subiculum.

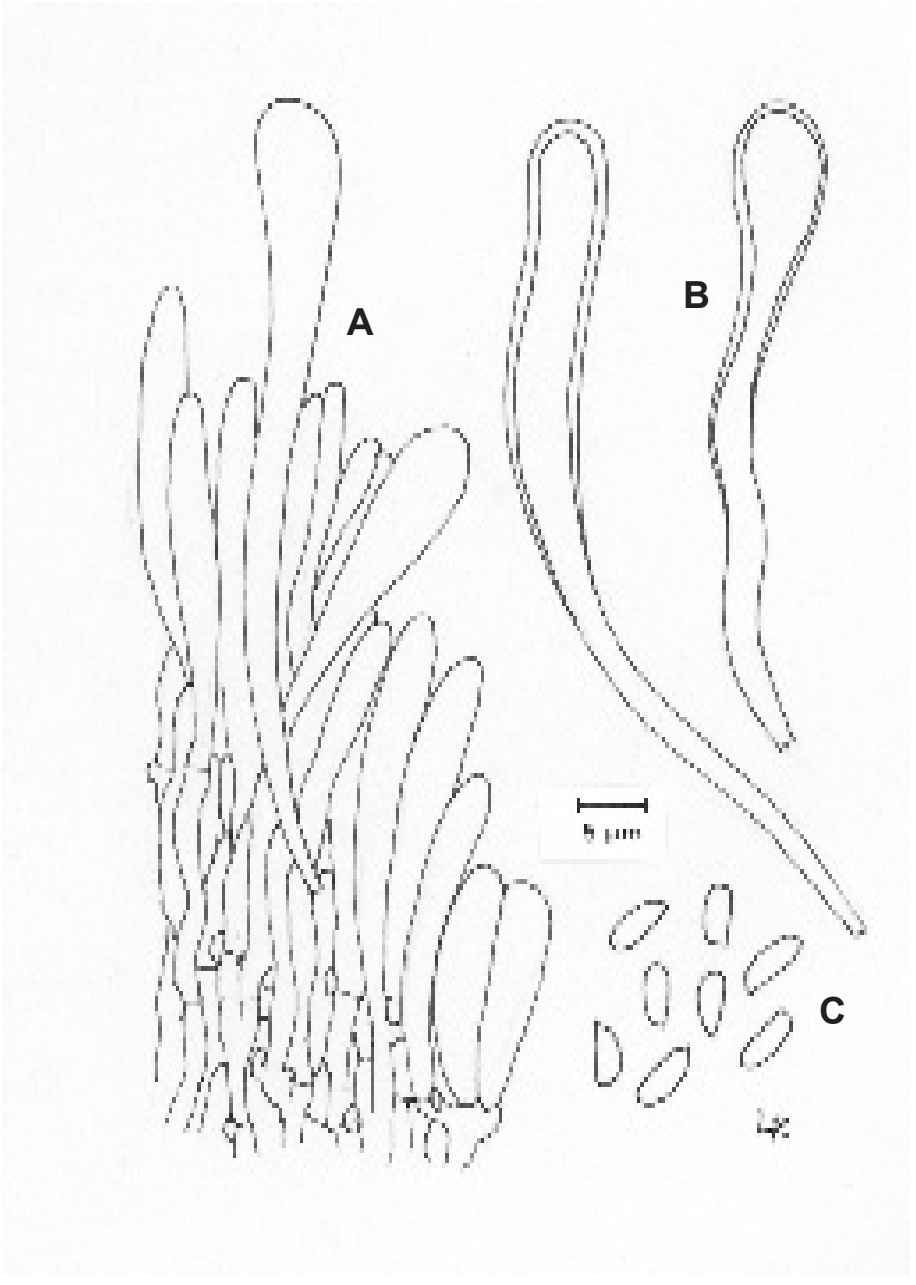

Fig 3. *Mycoacia rubiginosa* A) section of the apex with apically widened hyphae, B) same, C) basidiospores. From the holotype.

Key to non-cystidiate species of *Mycoacia*

Species with columns of encrusted cystidia are not included here.

1. Hymenophore creamish to ochraceous **2**
1. Hymenophore otherwise coloured **3**

2. Spores allantoid, 3.5-4.5(-5.5) x 1.5-2 µm. Northern Hemisphere, Canary Islands and
probably from Africa and India. Not known from South America ..... **M. uda**
2. Spores almost subglobose, 4-4.5 x 2.75-3.5 µm. USA, Arizona .....
..... **M. austro-occidentalis**

3. Subiculum stratified, brown and yellowish, vesicular in the subiculum present, spores 4-4.5 x 2.5-2.8 µm. Colombia ..... **M. rubiginosa**
3. Subiculum brown to blackish, vesicular hyphae absent, spores 4-4.8 x 2.2-2.8 µm. Africa ..... **M. brunneofusca**

PARVODONTIA Hjortstam & Ryvarden gen. nov.
Basidioma resupinata, grandinioidea vel odontioidea; systema hyphale monomiticum; subiculum indistinctum, hyphae hyalinae, tenuitunicatae, fibulatae, cystidia conspicua, valde luteola incrustatae, basidia subclavata, constricta, tenuitunicata, 4 sterigmatibus, sporis ellipsoidalibus, tenuitunicatis, levibus, neque amyloidibus et cyanophilis, neque dextrinoidibus.
Generic type: *Parvodontia luteocystidia* Hjortstam & Ryvarden.
Basidiome resupinate. Hymenophore grandinioid, with more or less smooth aculei. Hyphal system monomitic; hyphae smooth, thin-walled, with clamp connections at all septa. Cystidia abundant, negative in sulphovanilline, projecting or more commonly embedded in the texture, thin-walled, encrusted with yellowish, sinuous matter. In the type also with projecting sinuous cystidioles, thin-walled. Basidia sinuous, subpedunculate, thin-walled, with four sterigmata and with a basal clamp connection. Spores narrowly ellipsoid, smooth, thin-walled, inamyloid, indextrinoid and acyanophilous.

Parvodontia luteocystidia Hjortstam & Ryvarden spec. nov.
Fig. 4
Basidioma resupinata, adnata, grandinioidea vel odontioidea, albida vel ochracea, systema hyphale monomiticum, subiculum indistinctum, hyphae hyalinae, tenuitu-

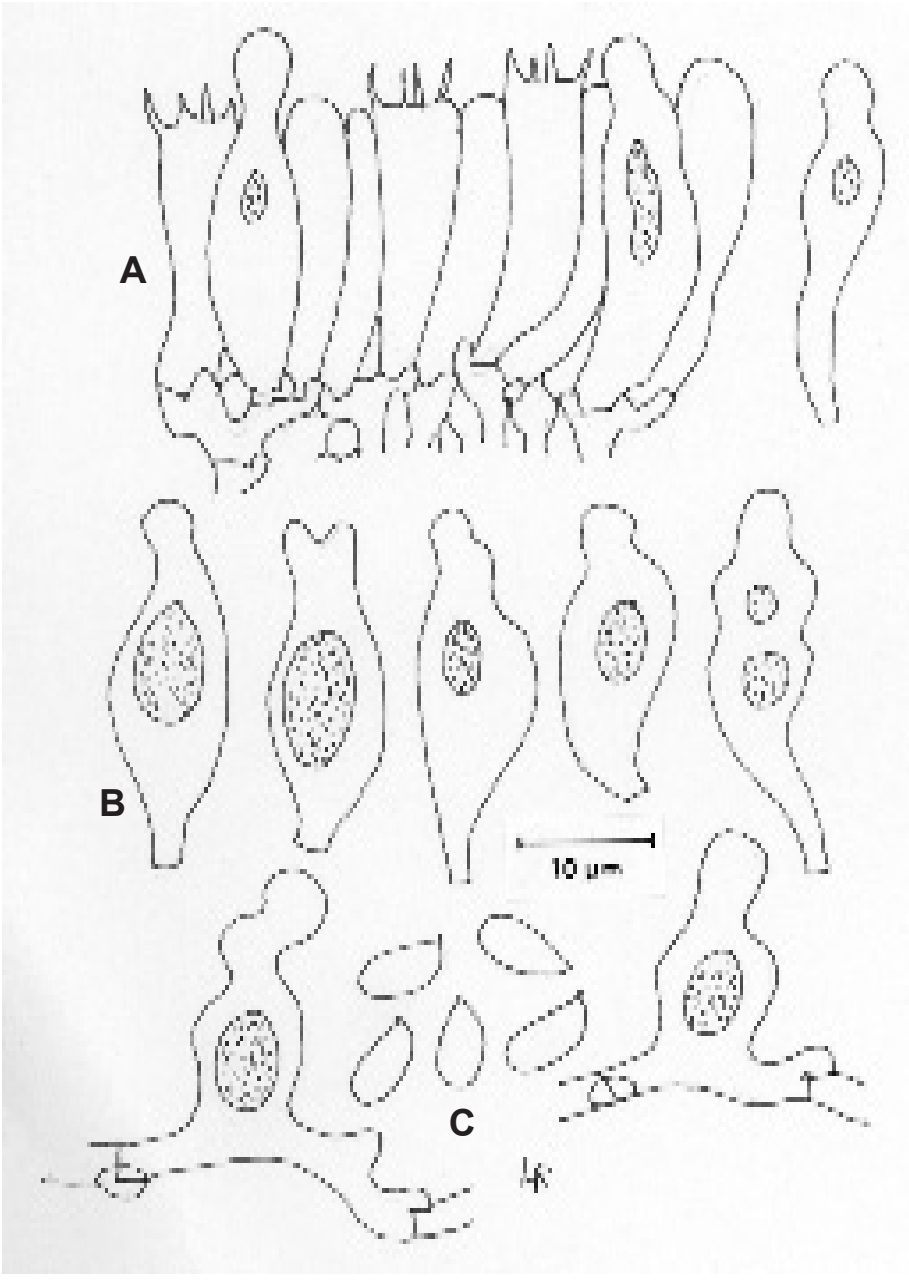

Fig 4. *Parvodontia luteocystidia* A) section of hymenium, B) cystidia, C) basidiospores, from the holotype.

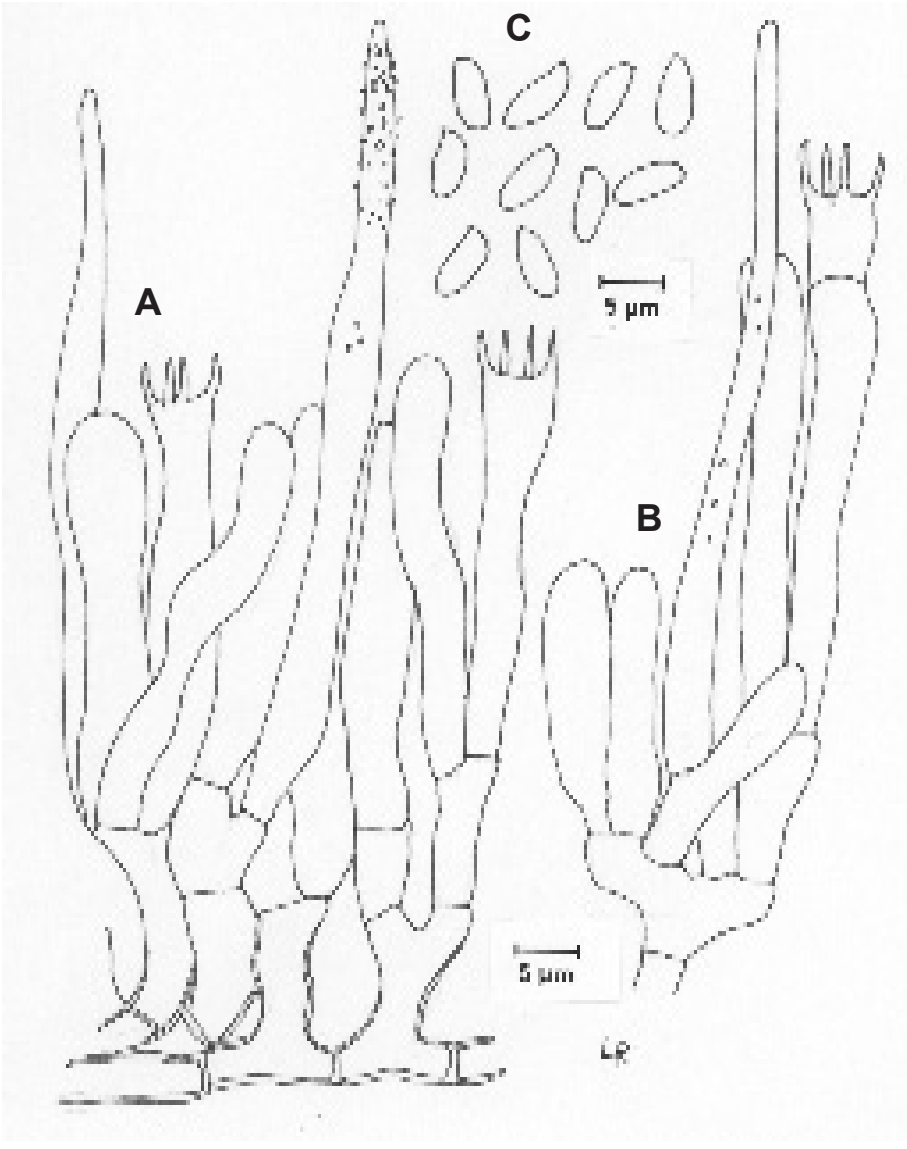

Fig. 5. Phanerochaete infuscata a) part of hymenium, B) cystidia, C) basidiospores, from the holotype.

nicatae, 2-2.5 µm, fibulatae, cystidia conspicua, valde luteola incrustatae, generaliter 20 x 7-8 µm, basidia subclavata, constricta, tenuitunicata, 15 x 4-4.5 µm, 4 sterigmatibus, sporis ellipsoidalibus, tenuitunicatis, levibus, 5 x 3 µm.
Holotype:Brazil, São Paulo, Santos, Cananeia, Ilha do Cardoso, on bamboo, 2-5 Feb. 1987, D. Pegler, K. Hjortstam, and L. Ryvarden, L. Ryv. No. 24680 (O).
Isotype: (K and in Hjortstam priv. Herb.).
Paratypes: Argentina, Misiones, Iguazu national park, Cataratas de Iguazu, on bamboo, 1-5. V. 1982, L. Ryvarden No. 19826 (O and in Hjortstam priv. Herb.); ditto on leaves, 1-5. V. 1982, L. Ryvarden No. 19827 (K).

Basidiome resupinate, adnate, fairly thin, hymenophore distinctly grandinioid, white or dull ochraceous, with more or less smooth aculei up to 0.5 mm long and about 4-6/mm.
Hyphal system monomitic; subiculum thin, basal hyphae hyaline, smooth, up to 3-4 µm wide, subhymenial hyphae likewise smooth, narrower, 2-2.5 µm wide, with clamp connections at all septa.
Cystidia negative in sulphovanilline, but apparently with contents cyanophilous, of two kinds, 1) abundant, embedded in the texture, rarely projecting above the basidia, obpyriform, thin-walled, in the upper part encrusted with yellowish, resinous matter, about 20 µm long and apically 7-8(-10) µm. 2) Cystidioles rare, sinuous, thin-walled, mainly projecting, 15-20 µm long.
Basidia sinuous, subpedunculate, thin-walled 15-17 x 4-4.5 µm, with four sterigmata and with a basal clamp connection.
Basidiospores narrowly ellipsoid, smooth, thin-walled, about 5 x 3 µm.
Substrate. On dead hardwood.
Distribution. Known southern Brazil and Northern Argentine.
Remarks. *Parvodontia luteocystidia* is characterized by its grandinioid hymenophore with small aculei and thin-walled cystidia with yellowish, resinous contents. It probably belongs to species with preference to bamboo and palms.

Phanerochaete infuscata Hjortstam & Ryvarden nov.sp.
Fig 5
Basidioma resupinatum, arcte adnatum, inseparabile, 0.1-0.2 mm crassum. Hymenophorum leve vel leviter tuberculatum, rimulosum, atrocinereum vel pallide infuscatum; margine indeterminato. Chordae nullae. Subiculum densum, distinctum, pallescens. Systema hyphale monomiticum; hyphis basalibus fere hyalinis, tenuitunicatis vel crassiusculis, levibus, 4-7 µm latis, fibulis raro; hyphae ceterae tenuitunicatae, 3-3.5(-4) µm latae, hyalinae, fibulae nullae. Cystidia dispersa, levia, tenuitunicata, 35-50(-60) µm longa, versus inframediana 4 5 µm lata, apicem versus decrescentia, fere subulata. Basidia anguste clavata vel subcylindrica, tenuitunicata, plus minus constricta, fibulae nullae, 25-30(-35) x 4.5-5 µm. Sporae ellipsoideae, tenuitunicatae, leves, 4-5 x 2.5-3 µm.

Holotypus: Brazil, Sao Paulo, Santos, Ubatuba, Ilha Anchieta on wood, 17-18 Jan. 1987, Hjortstam, 16407, K(M) 67354. Isotypus: (O).

Basidiome resupinate, closely adnate, inseparable from the substratum, 0.1-0.2 mm thick, hymenophore smooth to, under a lens, slightly tuberculate or grandinioid, commonly cracked, dark ash-grey to pale greyish brown, no colour change with KOH, margin indeterminate, subiculum, thin, rather dense, paler than the fertile part and cords or rhizomorphs absent .
Hyphal system monomitic; basal hyphae hyaline to pale yellowish brown, thin-walled or more commonly with slight wall thickening, smooth, 4-7 µm wide, clamp connections absent or very few; subhymenial hyphae thin-walled, hyaline, 3-3.5(-4) µm wide and without clamp connections.
Cystidia scattered, 35-50(-60) µm long and 4-5 µm wide in the middle part, narrowing towards the apex and almost subulate, projecting as much as 20-25 µm above the basidia, smooth or apically slightly encrusted, hyaline and thin-walled.
Basidia narrowly clavate to subcylindrical, thin-walled, slightly constricted, 25-30(-35) x 4.5-5 µm, with four sterigmata and without a basal clamp-connexion.
Basidiospores ellipsoid, smooth, thin-walled, 4-5 x 2.5-3 µm.
Substrate. On dead hardwood.
Distribution. Known only from the type locality.
Remarks. The ash-grey to greyish brown and somewhat grandinioid basidiome, lanceolate cystidia and small spores distinguish this species. *Phlebia deflectens* (P. Karst.) Ryvarden is superficially similar, but has narrower cylindrical basidia and longer, never subulate cystidia.
There are few species in *Phanerochaete* with a brownish hymenophore. *Australicium* Hjortstam & Ryvarden (2002) were described to accommodate *Corticium singulare* G. Cunn. This species can readily be separated by a felted and brown subiculum. Another species, *Phanerochaete stereoides* Sheng H. Wu (1995) has, according to the original description, a dense subiculum composed of brown hyphae and spores 6-8 x 3.2-4 µm. This could as well be a species of *Australicium.*

References

5. Poroid fungi (Basidomycota) Of the Atlantic rain forest in Northern Brazil

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Abstract:
Three species of poroid Corticiaceae, nine of Ganodermataceae, 24 of poroid Hymenochaetaceae, and 56 of Polyporaceae are reported from the Atlantic Rain Forest in Northeast Brazil. 27 of them are new records for Northeast Brazil and nine are reported for the first time from Brazil.
Key-words: Corticiaceae, Ganodermataceae, Hymenochaetaceae, Polyporaceae, polypores.

Introduction
The Atlantic Rain Forest of Brazil is a coastal ecosystem characterised by high biological diversity. Due to its location, it has suffered significant impact from colonisation and urbanisation which almost led to its complete destruction. Once covering about 14.200.000ha, now it is reduced to less than 165.000ha in Northeast Brazil (Ministério do Meio Ambiente, dos Recursos Hídricos e da Amazônia Legal, 1998; Ranta et al., 1998).
Recently, many studies of poroid fungi have been undertaken in Brazil (Loguércio-Leite & Wright, 1991; 1998; Gugliotta & Capelari, 1995; Gugliotta et al., 1996; Gerber & Loguércio-Leite, 1997, 2000; Gugliotta, 1997; Loguércio-Leite & Gerber, 1997; Loguércio-Leite et al., 1998; 2001; 2002; Gugliotta & Bononi, 1999; Ryvarden & Meijer, 2002) but few in the Atlantic Rain Forest in Northeast Brazil (Góes-Neto, 1999, Góes-Neto et al., 2000; Gibertoni & Cavalcanti, 2000, 2003).
Methods

During a two-year survey (September 2000 to June 2002) 13 reserves of the Atlantic Rain Forest in Northeast Brazil were visited. These reserves showed different degrees of conservation and were located in five (Sergipe, Alagoas, Pernambuco, Paraíba and Rio Grande do Norte) of the six states of Northeast Brazil which include this ecosystem. Aphylloporaceous fungi were extensively collected by one of us (TG) and species of poroid Corticiaceae, Ganodermataceae, poroid Hymenochaetaceae and Polyporaceae were found in all five investigated states. To save space, the localities in which the specimens were collected, are referred to according to the following list:

State of Sergipe
1. Estação Ecológica Serra de Itabaiana (1300ha, 10º45'28''S and 37º18'55''W)
State of Alagoas
2. Reserva Particular do Patrimônio Natural (RPPN) Fazenda Rosa do Sol (15,5ha, 9º50'24''S and 35º54'28''W)
3. RPPN Fazenda São Pedro (50ha, 9º35'50''S and 35º57'24''W)
State of Pernambuco
4. Reserva Ecológica Dois Irmãos (374ha, 8º15'30''S and 35º57'00''W)
5. Complexo de Gurjaú (1077ha, 8º28'66''S and 35º03'50''W)
6. Reserva Biológica Saltinho (548ha, 8º42'00''S and 35º10'00''W)
7. Refúgio Ecológico Charles Darwin (60ha, 7º50'03''S and 35º54'23''W)
State of Paraíba
8. Reserva Biológica Guaribas (4321,6ha, 6º50'19''S and 35º07'34''W)
9. RPPN Fazenda Pacatuba (266,53ha, 7º05'47''S and 35º13'58''W)
10. RPPN Engenho Gargaú (1058,62ha, 7º06'50''S and 34º58'41''W)
11. Mata do Buraquinho (471ha, 7º06'54''S and 34º51'47''W)
State of Rio Grande do Norte
12. RPPN Mata Estrela-Senador Antônio Farias (2039,93ha, 6º22'10''S and 35º00'28''W)
13. Floresta Nacional de Nísia Floresta (174, 95ha, 6º05'28''S and 35º12'31''W).

Collections, preparation of the material and microscopic and macroscopic analyses were made following the usual proceedings for these fungi (Maerz & Paul, 1950; Fidalgo & Bononi, 1989; Martin, 1934; Singer, 1951). All collections are deposited in O and URM.

Results
During this survey aphyllophoraceous fungi were extensively collected and 85 species of poroid fungi were collected. Species in bold are new records for Brazil. The ones preceded by an * are new records to Northeast Brazil while the numbers of the reserves preceded also by an * are new records to the states.

Corticiaceae
*Gloeoporus dichrous *(Fr.) Bres., Hedwigia 53: 74, 1913,*
Basionym: Polyporus dichrous *Fr., Syst. Mycol. 1: 364, 1821.*
Material examined: 3, 7
Grammothele lineata *Berk. & M. A. Curt., Jour. Linn. Soc. 10: 327, 1868,*
Material examined: 3, 5.
*Grammothele subargentea *(Speg.) Rajchenberg, Mycotaxon 17: 280, 1983,*
Basionym: Poria subargentea *Speg., Rev. Argent. Hist. Nat. 1: 104, 1891.*
Material examined: 2, 6, 8, 10.

Ganodermataceae
Amauroderma gusmaninanum *Torrend, Brotéria ser. Bot. 18: 129, 1920.*
Material examined: *1, 4.
*Amauroderma macrosporum *J. Furtado, Rev. Gen.* Amauroderma *(Polyp.) 203, 1968.*
Material examined: 1.
Amauroderma omphalodes *(Berk.) Torrend, Brotéria, ser. bot. 18: 131, 1920.*
Basionym: Polyporus omphalodes *Berk., Hook. J. Bot. 8: 172, 1856.*
Material examined: *3, 4.
Amauroderma praetervisum *(Pat.) Torrend, Brotéria, ser. bot. 18: 131, 1920.*
Basionym: Ganoderma praetervisum *Pat., Bull. Soc. Mycol. Fr. 5: 78, 1889.*
Material examined: 5, 6, 10.
Amauroderma schomburgkii *(Mont. & Berk.) Torrend, Brotéria, ser. bot. 18: 140, 1920.*
Basionym: Polyporus schomburgkii *Mont. & Berk., Lond. J. Bot. 3: 331, 1844.*
Material examined: 6.
Amauroderma sprucei *(Pat.) Torrend, Brotéria, ser. bot. 18: 121, 1920.*
Basionym: Ganoderma sprucei *Pat., Bull. Soc. Mycol. Fr. 10: 75, 1894.*
Material examined: 1.
Ganoderma applanatum *(Pers.) Pat., Hymen. Eur. p. 143, 1887.*
Basionym: Boletus applanatus *Pers., Obs. Myc. 2: 2, 1799.*
Material examined: *3, 4, 5, 6, 7, 9, 11.
Ganoderma resinaceum *Boudier* in *Pat., Bull. Soc. Mycol. Fr. 5: 72, 1889.*
Material examined: *3, 5, 6, 9, 10, 11.
*Ganoderma stiptatum *(Murr.) Murr., North Amer. Fl. 9: 122, 1908.*
Basionym: Fomes stiptatum *Murr., Bull. Torrey Bot. Cl. 30: 229, 1903.*
Material examined: 3, 4, 5, 6, 8, 10.

Hymenochaetaceae
*Coltricia cinnamomea *(Jacq.) Murril, Bull. Torr. Bot. Cl. 31: 343, 1904.*
Basionym: Boletus cinnamomeus *Jacq., Collect. Bot. 1: 116, 1787.*
Material examined: 1, 5, 8.

Coltriciella navispora *Aime, Henkel & Ryvarden*, *Mycologia, 95:617, 2003.*
Material examined: 5, 8
Cyclomyces iodinus *(Mont.) Pat., Essai Tax. p. 98, 1900.*
Basionym: Polyporus iodinus *Mont ., Ann. Sci. Nat. Bot. 2, 16: 108, 1841.*
Material examined: *4, *5, *6.
Inonotus venezuelicus *Ryvarden*, *Mycotaxon 28 (2): 529, 1987.*
Material examined: 12.
Phellinus baccharidis *(Pat.) Pat.*, *Essai Taxon. p. 91, 1900.*
Basionym: Polyporus baccharidis *Pat., Bull. Soc. Mycol. France 9: 129, 1893.*
Material examined: 3, 6, 7, 10, 13.
Phellinus contiguus *(Pers.: Fr.) Pat.*, *Essai Taxon.: 97, 1900.*
Basionym: Boletus contiguus *Pers., Synop. Meth. Fung. p. 544, 1801.*
Material examined: *3.
Phellinus extensus *(Lév.) Pat., Essai Taxon. p. 97, 1900.*
Basionym: Polyporus extensus *Lév., Ann. Sci. Nat. Bot. 5: 129, 1848.*
Material examined: *7.
Phellinus fastuosus *(Lév.) Ryvarden, Norw. J. Bot. 19 (3-4): 234, 1972.*
Basionym: Polyporus fastuosus *Lév., Ann. Sci. Nat. Bot. 2: 190, 1844.*
Material examined: *2, *3, *4, *5, *6, *7, 9, 10, *12.
*Phellinus ferrugineo-velutinus *(Henn.) Ryvarden, Norw. J. Bot. 19: 234, 1972.*
Basionym: Poria ferrugineo-velutina *Henn., Hedwigia 44: 59, 1905.*
Material examined: 5, 6, 7, 10, 12, 13.
*Phellinus ferruginosus *(Fr.) Pat., Essai Taxon. p. 97, 1900.*
Basionym: Boletus ferruginosus *Schrad., Spi. Fl. Germ. p. 172, 1794.*
Material examined: 6, 13.
Phellinus gilvus *(Schw.: Fr.) Pat., Essai Taxon.: 97, 1900.*
Basionym: Polyporus gilvus *Schw.: Fr., Elench. Fung. 1: 104, 1828.*
Material examined: *1, *3, 4, 5, 6, 7, *8, *9, *10, *11, *12, *13.
Phellinus grenadensis *(Murr.) Ryvarden, Norw. J. Bot. 18 (3-4): 234, 1972.*
Basionym: Pyropolyporus grenadensis *Murr., North Amer. Flora 9: 107, 1908.*
Material examined: *13.
*Phellinus maxonii *(Murr.) Reid, Kew Bull. 35: 867, 1981.*
Basionym: Fomitiporia maxonii *Murr., North Amer. Flora 9: 11, 1907.*
Material examined: 6, 12.
Phellinus melleoporus *(Murr.) Ryvarden, Mycotaxon 23: 177, 1985.*
Basionym: Fomitiporella melleopora *Murr., North Amer. Flora 9: 13, 1907.*
Material examined: *12.
Phellinus membranaceus *Wright & Blumenf., Mycotaxon, 21: 422, 1984.*
Material examined: *6.
Phellinus portoricensis *(Overh.* in *Seav. & Chard.) O. Fidalgo, Mem. New. York Bot. Gard. 17: 111, 1968.*
Basionym: Fomes portoricensis *Overh.* in *Seav. & Chard., Sci. Surv. Puerto Rico e*

Virgin Is. 8 (1): 158, 1926.
Material examined: 3.
Phellinus rhytiphloeus *(Mont.) Ryvarden, Prel. Polyp. Flora E. Africa: 206, 1980.*
Basionym: Polyporus rhytiphloeus *Mont., Ann. Sci. Nat. Bot. 5: 369, 1857.*
Material examined: 12.
Phellinus rimosus *(Berk.) Pilát, Ann. Mycol. 38: 80, 1940.*
Basionym: Polyporus rimosus *Berk., London J. Bot. 4: 54, 1845.*
Material examined: 4, *8, *12.
Phellinus roseocinereus *(Murr.) D. A. Reid, Mem. New. York Bot. Gard. 28: 194, 1976.*
Basionym: Pyropolyporus roseocinereus *Murr., North Amer. Flora 9: 104, 1908.*
Material examined: 4.
Phellinus shaferi *(Murr.) Ryvarden, Norw. J. Bot. 19: 235, 1972.*
Basionym: Fuscoporella shaferi *Murr., North Amer. Flora 9: 7, 1907.*
Material examined: 3.
Phellinus umbrinellus *(Bres.) Herr. & Bond.* in *Bond. & Herr., Mycol. Fitopatol. 14: 8, 1980.*
Basionym: Poria umbrinella *Bres., Hedwigia 35: 282, 1896.*
Material examined: *1, *3, *4, *5, *6, *7, *12.
*Phellinus undulatus *(Murr.) Ryvarden, Norw. J. Bot. 19 (3-4): 235, 1972.*
Basionym: Fomitiporia undulata *Murr., North Amer. Flora 9: 10, 1907.*
Material examined: 3.
Phylloporia chrysita *(Berk.) Ryvarden, Norw. J. Bot. 19: 235, 1972.*
Basionym: Polyporus chrisites *Berk., Hook. J. Bot. 8: 233, 1856.*
Material examined: *13.
Phylloporia pectinata *(Klotzsch) Ryvarden*, *Synopsis Fung. 5: 196, 1991.*
Basionym: Polyporus pectinatus *Klotzsch, Linnaea 8: 485, 1833.*
Material examined: 7, *12, *13.

Polyporaceae
*Antrodiella angulatopora *Ryvarden, Mycotaxon 28: 525, 1987.*
Material examined: 3.
*Antrodiella hydrophila *(Berk. & M.A. Curtis) Ryvarden, Mycotaxon 20 (2): 342, 1984.*
Basionym: Polyporus hydrophilus *Berk. & M. A. Curtis, J. Linn. Soc. Bot. 10: 306, 1868.*
Material examined: 3.
*Antrodiella semisupina *(Berk. & M. A. Curtis) Ryvarden, Prelim. Polyp. Fl. East Africa: 261, 1980.*
Basionym: Polyporus semisupinus *Berk. & M. A. Curtis, Grevillea 1: 50, 1872.*
Material examined: 4.
*Antrodiella versicutis *(Berk. & M. A. Curtis) Gilbn. & Ryvarden, North Am. Polyp.:*

158, 1986.
Basionym: Polyporus versicutis *Berk. & M. A. Curtis, J. Linn. Soc. Bot. 10: 308, 1868.*
Material examined: 1, 2, 3, 4, 5, 6, 7, 10, 12, 13.
Ceriporiopsis flavilutea *(Murr.) Ryvarden, Mycotaxon 23: 185, 1985.*
Basionym: Poria flavilutea *Murr., Mycologia 13: 176, 1921.*
Material examined: 12.
*Cerrena sclerodepsis *(Berk.) Ryvarden, 1976.*
Basionym: Trametes sclerodepsis *Berk. Hook. J. Bot. Kew Misch 8: 240, 1856.*
Material examined: 3, 6, 7.
Coriolopsis badia *(Berk.) Murrill, Bull. Torrey bot. Club 34: 466, 1907.*
Basionym: Trametes badia *Berk., Essai taxonomique: 93, 1900.*
Material examined: 5.
Coriolopsis rigida *(Berk. & Mont.) Murr., North Amer. Flora 9: 75, 1908.*
Basionym: Trametes rigida *Berk. & Mont., Ann. Sci. Nat. ser. 2, 11: 240, 1849.*
Material examined: *1, *2, *3, 4, 5, 6, *8, *10.
Daedalea aethalodes *(Mont.) Rajchenberg, Can. J. Bot. 64: 2130, 1986.*
Basionym: Trametes aethalodes *Mont., Ann. Sci. Nat. sér. 4 (5): 370, 1857.*
Material examined: *1, *2, 7.
Datronia caperata *(Berk.) Ryvarden, Mycotaxon 23: 172, 1985.*
Basionym: Polyporus caperatus *Berk., Ann. Mag. Nat. Hist. I, 3: 391, 1839.*
Material examined: *1, *2, *3, 4, 5, 6, *8, *9, *10, *11, *12, *13.
*Datronia scutellata *(Schwein.) Gilb. & Ryvarden, Mycotaxon 22: 326, 1985.*
Basionym: Polyporus scutellatus *Schwein., Trans. Am. Phil. Soc. II 4: 157, 1832.*
Material examined: 1.
*Datronia stereoides *(Fr.: Fr.) Ryvarden, Flora over Kjuker: 42, 1968.*
Basionym: Polyprus stereoides *Fr.: Fr., Syst. Mycol 1: 369, 1821.*
Material examined: 7, 13.
Dichomitus cavernulosus *(Berk.) Masuka & Ryvarden, Mycol. Research 103: 1127, 1999.*
Basionym: Polyporus cavernulosus *Berk., Hook. J. Bot. 8: 235, 1856.*
Material examined: *1, *2, 4, 6, 7, *8, *10, *11, *12, *13.
Earliella scabrosa *(Pers.* in *Gaud.) Gilbn. & Ryvarden, Mycotaxon 22: 364, 1985.*
Basionym: Polyporus scabrosus *Pers.* in *Gaud., Voy aut. Monde p. 172, 1827.*
Material examined: *3, 4, 5, 6, 7, *8, *10.
Echinochaete brachyporus *(Mont.) Ryvarden, Bull. Jard. Bot. Nat. Belg. 48: 101, 1978.*
Basionym: Polyporus brachyporus *Mont. Ann. Sci. Nar. Ser. 4, 1: 131, 1854.*
Material examined: *3, *11.
Flabellophora obovata *(Jungh.) Núñez & Ryvarden, East Asian Polyp.: 294, 2001.*
Basionym: Polyporus obovatus *Jungh., Verh. Batav. Genootach. 17: 65, 1838.*
Material examined: *1, *3, 4, 5, 6, *8, *10, *11, *12, *13.

Fomes fasciatus *(Sw.: Fr.) Cooke, Grevillea 14 (69): 21, 1885.*
Basionym: Polyporus fasciatus *Sw.: Fr., Syst. Mycol. 1: 373, 1821.*
Material examined: 4, 5, 6, 7, *8, *9, *10, *11, *12, *13.
Fomitella supina *(Sw.: Fr.) Murr., Bull. Torrey Bot. Club 32: 365, 1905.*
Basionym: Boletus supinus *Sw., Flora Ind. Occi. 3(2): 1926, 1806.*
Material examined: *1, *3, 4, 5, 7, *10, *11.
Fomitopsis cupreo-rosea *(Berk.) Carr. & Gilbn., Mycortaxon 25: 476, 1986.*
Basionym: Polyporus cupreo-roseus *Berk., Hook. J. Bot. 8, 1856.*
Material examined: *1, *2.
Fomitopsis feei *(Fr.) Kreisel, Univ. Habana ser 4, Cienc. Biol. 16: 83, 1971.*
Basionym: Polyporus feei *Fr., Linnaea 5: 518, 1830.*
Material examined: *10.
Gloeophyllum striatum *(Swartz: Fr.) Murril, Torr. Bot. Cl. 32: 370, 1905.*
Basionym: Daedalea striata *Fr., Syst. Mycol. 1: 334, 1821.*
Material examined: *13.
Hexagona hydnoides *(Sw.: Fr.) K. Fidalgo, Mem. N. Y. Bot. Gard. 17(2): 35-108, 1968.*
Basionym: Polyporus hydnoides *Sw.: Fr., Syst. Mycol. 1: 362, 1821.*
Material examined: *1, *2, *3, 4, 6, 7, *8, *9, *10, *11, *12, *13.
Hexagona papyracea *Berk., Ann. Mag. Nat. Hist. 10: 379, 1843.*
Material examined: *1, *2, *8, *10, *12, *13.
*Irpex lacteus *(Fr.: Fr.) Fr., Elench. Fung. p. 145, 1828.*
Basionym: Hydnum lacteum *Fr.: Fr., Syst. Mycol. 1: 412, 1821.*
Material examined: 4.
*Junghunia nitida *(Fr.) Ryvarden, Persoonia 7: 18, 1972.*
Basionym: Polyporus nitidus *Fr., Syst. Mycol. 1: 379, 1821.*
Material examined: 3.
Lentinus crinitus *(L.: Fr.) Fr., Syst. Orb. Veg. 77, 1825..*
Basionym: Agaricus crinitus *L.: Fr., Syst. Mycol. 1: 175, 1821.*
Material examined: *1, *2, *3, 4, 5, 6, *8, *9, *10, *11, *12, *13.
Lentinus velutinus *Fr., Linnaea 5: 510, 1830.*
Material examined: *12.
Lenzites stereoides *(Fr.) Ryvarden, Norw. J. Bot. 19 (3-4): 232, 1972.*
Basionym: Daedalea stereoides *Fr., Nova Acta Reg. Soc. Sci. Upps. Ser. III, 1: 99, 1851.*
Material examined: *1, *3, 5, 7, *8, *9, *10, *11.
Nigrofomes melanoporus *(Mont.) Murr., Bull. Torr. Bot. Cl. 31: 425, 1904.*
Basionym: Polyporus melanoporus *Mont., Ann. Sci. Nat. Ser. 2, 17: 127, 1842.*
Material examined: *3, 4, 5, 6, 7, *10, *11.
Nigroporus vinosus *(Berk.) Murr., Bull. Torrey. Bot. Cl. 32: 361, 1905.*
Basionym: Polyporus vinosus *Berk., Ann. Mag. Nat. Hist. ser. 2, 11: 195, 1852.*
Material examined: 4, 6, *8, *10, *13.

*Perenniporia aurantiaca *(A. David & Rajchenberg) Decock & Ryvarden, Mycol. Res. 103: 1140, 1999.*
Basionym: Pyropolyporus aurantiauca *A. David & Rajchenberg, Mycotaxon 22: 312-313.*
Material examined: 1, 2, 4, 6, 10.
*Perenniporia contraria *(Berk. & M. A. Curtis) Ryvarden, Norw. J. Bot. 19 (3-4): 233, 1972.*
Basionym: Fomes contrarius *Berk. & M. A. Curtis, Grevillea 15: 21, 1886.*
Material examined: 4, 6.
Perenniporia martiusii *(Berk.) Ryvarden, Norw. J. Bot. 19 (3-4): 143, 1972.*
Basionym: Polyporus martius *Berk., Hook. J. Bot. 8: 198, 1856.*
Material examined: *4, *11, *12.
Perenniporia medula-pannis *(Jacq.: Fr.) Donk, Persoonia 5: 76, 1967.*
Basionym: Boletus medulla-panis *Jacq., Miscel. Austr. 1: 141, 1778.*
Material examined: *1.
Polyporus dictyopus *Mont., Ann. Sci. Nat., ser. 2, 3: 349, 1835.*
Material examined: *1, *3, 4, 5, 6, 7, *13.
Polyporus grammocephalus *Berk., Hook. Lond. J. Bot. 1: 148, 1842.*
Material examined: *1, *2, *3, *4, *7, *10, *12.
*Polyporus guianensis *Mont., Ann. Sci. Nat. Bot. II, 13: 201, 1840.*
Material examined: 5, 6, 7, 11.
Polyporus leprieurii *Mont., Ann. Sci. Nat., ser. 2, 13: 203, 1840.*
Material examined: *1, *3, 4, 5, 6, 7, *8, *11.
Polyporus tenuiculus *(Beauv.) Fr., Syst. Mycol. 1: 344, 1821.*
Material examined: *1, *2, 3, 4, 5, 6, 7, *13
*Polyporus tricholoma *Mont., Ann. Sci. Ser. II, 8: 365, 1837.*
Material examined: 2.
Polyporus virgatus *Berk. & M. A. Curtis, Journ. Linn. Soc. Bot. 10: 304, 1868.*
Material examined: *10, *13.
Pycnoporus sanguineus *(L.: Fr.) Murr., Bull. Torrey Bot. Club 31: 421, 1904.*
Material examined: *2, *3, 4, 5, 6, *9, *10, *11, *13.
Rigidoporus biokoensis *(Lloyd) Ryvarden*, *Norw. J. Bot. 19: 236, 1972.*
Basionym: Polyporus biokoensis *Lloyd, Mycol. Writ. 3: 131, 1912.*
Material examined: 1, 3, 4.
Rigidoporus lineatus *(Pers.) Ryvarden, Norw. J. Bot. 19: 236, 1972.*
Basionym: Polyporus lineatus *Pers.* in *Gaud., Voyage au Tour de Monde: 174, 1827.*
Material examined: *3, 4, 5, 6, 7, *9, *10.
Rigidoporus microporus *(Fr.) Overheem, Icon. Fung. Malayenesium 5: 1, 1924.*
Basionym: Polyporus microporus *Fr., Syst. Mycol. 1: 376, 1821.*
Material examined: *3, 4, 5, 6, 7, *10.
*Rigidoporus vinctus *(Berk.) Ryvarden, Norw. J. Bot. 19: 139-144, 1972.*
Basionym: Poria vincta *Berk., Ann. Mag. Nat. Hist. 2, 9: 196, 1852.*

Material examined: 3, 6.
*Schizopora flavipora *(Cooke) Ryvarden, Mycotaxon 23: 186, 1985.*
Basionym: Poria flavipora *Cooke, Grevillea 15: 25, 1886.*
Material examined: 2, 8, 10, 13.
*Schizopora paradoxa *(Fr.) Donk, Persoonia 5: 76, 1967.*
Basionym: Hydnum paradoxum *Fr., Syst. Mycol. 1: 424, 1821.*
Material examined: 3, 5, 8, 10.
*Skeletocutis lenis *(P. Karst.) Niemelä, Karstenia 31: 23, 1991.*
Basionym: Physisporinus lenis *P. Karst.* in *Rabenh., Wint. Fungi. Eur. et Exeur., excs. 3527, 1886.*
Material examined: 1.
*Stiptophyllum erubescens *(Berk.) Ryvarden, Norw. J. Bot. 20: 4, 1973.*
Basionym: Daedalea erubescens *Berk., Ann. Nat. hist. 4: 292, 1840.*
Material examined: 12.
Trametes cubensis *(Mont.) Sacc., Syll. Fung. 9: 198, 1891.*
Basionym: Polyporus cubensis *Mont., Ann. Sci. Nat. ser. 2, 8: 364, 1837.*
Material examined: 4, 5.
Trametes membranacea *(Sw.: Fr.) Kreisel, Ciências Biol. ser. 4, nº 16: 83, 1971.*
Basionym: Polyporus membranaceus *Sw.: Fr., Syst. Mycol. 1: 370, 1821.*
Material examined: 4, 5, 6, *8, *10.
Trametes pavonia *(Hooker) Ryvarden, Norw. J. Bot. 19: 237, 1972.*
Basionym: Polyporus pavonius *(Hooker) Fr., Epicr. Syst, Mycol.: 477, 1838.*
Material examined: 2, 3, 5, 7.
Trichaptum perrottetti *(Lév.) Ryvarden, Norw. J. Bot. 19: 237, 1972.*
Basionym: Polyporus perrottetii *Lév., Ann. Sci. Nat. Ser. 3, 2: 195, 1844.*
Material examined: *8, *10.
Trichaptum sector *(Ehrenb.: Fr.) Kreisel, Ciencias Ser. 4, Cienc. Biol. 16: 84: 84, 1971.*
Basionym: Polyporus sector *Ehrenb.: Fr., Syst. Mycol. 1: 505, 1821.*
Material examined: *2, *3, 5, 6, *8, *9, *10, *11.

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6: Studies in neotropical polypores 18 New species from Brazil

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Abstract: *Antrodiella mollis, Diplomitoporus cystidiatus, Navisporus terrestris (Polyporaceae) Phellinus macrosporus and Phellinus neocallimorphus (*Hymenochaetaceae*)* are described as new. Keys to the respective genera in tropical America are provided.
Key words: *Antrodiella, Diplomitoporus, Navisporus, Phellinus, Steccherícium*

Introduction

The Atlantic Rain Forest of Brazil is a coastal ecosystem characterised by high biological diversity. Due to its location, it has suffered significant impact from colonisation and urbanisation which almost led to its complete destruction. Once covering about 14.200.000ha, now it is reduced to less than 165.000ha in Northeast Brazil (Ministério do Meio Ambiente, dos Recursos Hídricos e da Amazônia Legal, 1998; Ranta et al., 1998).

Few studies of poroid fungi have been undertaken in the Atlantic Rain Forest in Northeast Brazil (Góes-Neto, 1999, Góes-Neto et al., 2000; Gibertoni & Cavalcanti, 2000, 2003). New species have been found in South Brazil recently (Loguércio-Leite & Wright, 1998; Loguércio-Leite et al., 1998, 2001, 2002; Ryvarden & Meijer, 2002) but not in Northeast Brazil since Torrend' works (Góes-Neto, 1999).

Methods

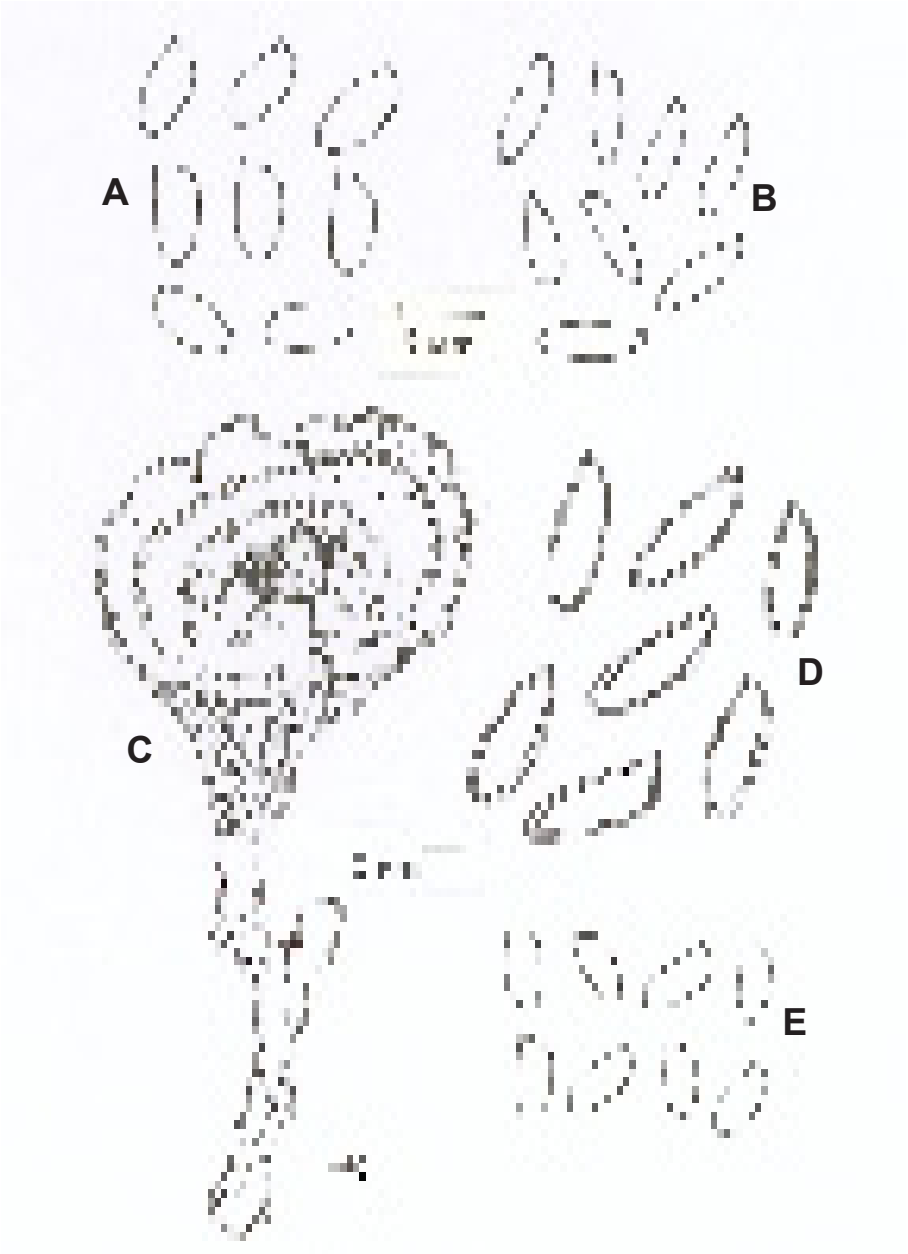

Fig. 1. *Antrodia mollis* A) basidiospores, *Diplomitoporus navisporus* B) basidiospores, *Navisporus terrestris* C) basidiocarp, D) basidiospores, *Phellinus neocallimorphus* E) basidiospores. From the holotypes.

During a two-year survey (September 2000 to June 2002) aphylloporaceous fungi were extensively collected by one of us (TG) in 13 reserves of the Atlantic Rain Forest in Northeast Brazil. These reserves showed different degrees of conservation and were located in five (Sergipe, Alagoas, Pernambuco, Paraíba and Rio Grande do Norte) of the six states of Northeast Brazil which include this ecosystem. Collections, preparation of the material and microscopic and macroscopic analyses were made following the usual proceedings for these fungi (Maerz & Paul, 1950; Fidalgo & Bononi, 1989; Martin, 1934; Singer, 1951). All collections are deposited in O and URM. The new species have been compared to all available mycotas (Ryvarden & Johansen, 1980; Gilbertson & Ryvarden, 1986, 1987; Ryvarden & Gilbertson, 1993, 1994, Núñez and Ryvarden, 2002, 2001) and Maas Geesteranus (1963, 1966, 1974, 1976).

Descriptions of species

Antrodiella mollis Gibertoni & Ryvarden Nov. Sp. **Fig 1A** Fructificatio sessilis, pileus ochraceus, velutinate pori rotundis vel angulatis, 1-3 per mm, cremicoloribus, systema hyphale dimiticum, hyphae generatoriae fibulatae, basidiosporae ellipsoideae, 4.5-6 x 2-2.7 µm

Holotype: Brazil, state of Pernambuco, Recife Municipality, Ecological Reserve Dois Irmãos, May 2001, on dead hardwood, Gibertoni N364 (URM 77579), isotype in O.

Etymology: mollis = soft, pertaining to the soft pileus.

Basidioma annual, pileate, broadly attached, single, 5 cm wide, 4 cm long and 2.5 cm thick at the base, fleshy when fresh, corky when dry, upper surface ochraceous, velutinate, azonate, pore surface dark ochraceous, pores round to angular, dissepiments thin, 1-3(4) per mm, tubes concolorous with the upper surface, up to 0.5cm deep, context pale straw-coloured, soft, homogeneous, up to 2.0cm thick.

Hyphal system dimitic, generative hyphae hyaline, 2-5 µm wide, slightly gelatinized in KOH, skeletal hyphae hyaline, thick-walled but with a wide lumen, straight or slightly sinous,2-6 µm wide.

Basidia clavate, 12-15 x 4-6 µm with 4 sterigmata.

Basidiospores ellipsoid, hyaline, smooth, thin-walled, 4-6 x 2-2.7µm, IKI-.

Substrata: Unknown hardwood.

Distribution: Known only from the type.

Remarks: Microscopically the speices is rather similar to *A. multipileata*, which, however has a white and glabrous pileus besides a pore surface which darkens considerable under drying, becoming dark brown in parts.

Key to neotropical species of Antrodiella

1. Basidiocarp resupinate 2
1. Basidiocarp pileate..... 3

2. Basidiospores 4-5 x 2.5-3 mm, pores 4-5 per mm, angular ..... **A. incrustans**
2. Basidiospores 2.5 x 2 mm, pores round, 8 per mm..... **A. subundata**

3. Pores angular, in parts irregular, 1-5 per mm, or in parts larger 4
3. Pores more or less regular, 4-8 per mm 8

4. Basidiospores subglobose to ellipsoid 5
4. Basidiospores allantoid to cylindrical..... 7

5. Spores subglobose, 3-3.5 x 2.5-3 µm..... **A. angulatopora**
5. Spores ellipsoid, up to 2.5 µm wide 6

6. Pileus glabrous and white ..... **A. multipileata**
6. Pileus velutinate and straw-coloured ..... **A. mollis**

7. Pileus and context straw-coloured ..... **A. luteocontexta**
7. Pileus and context whitish 8

8. Spores 1-1.3 µm wide ..... **A. dentipora**
8. Spores 1.8-2.2 µm wide ..... **A. brasiliensis**

9. Basidiospores allantoid to oblong ellipsoid, up to 2 µm wide 10
9. Basidiospores broadly ellipsoid to subglobose, wider than 2 µm.....12

10. Basidiospores oblong ellipsoid 3-4 x 1.2-2 µm ..... **A. murrillii**
10. Basidiospores allantoid to cylindrical 4-4.5 x 1-1.5 µm.....11

11. Pileus brown to pale chestnut, pores 10-12 per mm, context dominated by almost solid skeletal hyphae ..... **A. versicutis**
11. Pileus ochraceous to pale brown, pores 6-7 per mm, context dominated by wide generative hyphae, only few skeletal hyphae present..... **A. duracina**

12. Basidiospores 4-5 x 3 µm ..... **A. reflexa**
12. Basidiospores shorter than 4 µm.....13

13. Pileus cream, to straw-coloured to pale brown, context more or less as the tubes or paler, basidiocarps often effused reflexed ..... **A. semisupina**
13. Pileus brown to purplish black or chestnut, context brown and darker than the tubes, basidiocarp mostly fanshaped with tapering base 14

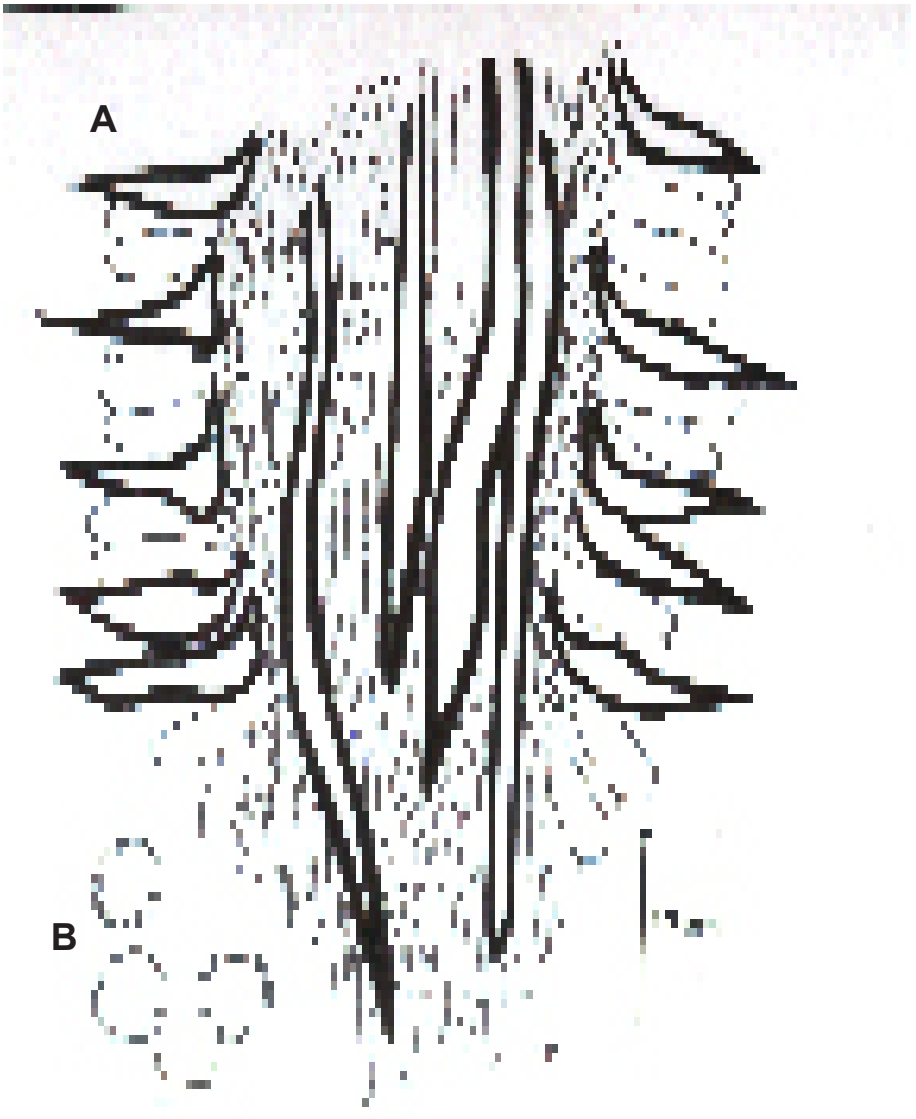

Fig. 2. *Phellinus macrosporus* A) section through tube wall B) basidiospores. From the holotype.

14. Pileus finely tomentose, slowly becoming glabrous, no hymenial cystidia present, context with dark horizontal lines, with age dense and resinous **.A. hydrophila**
14. Pileus glabrous, small smooth cystidia arising from bent skeletal hyphae present in the hymenium, no narrow resinous band in context which however by age may become very dense and dark **..... A. liebmannii**

Diplomitoporus navisporus Gibertoni & Ryvarden nov. sp. **Fig. 1 B**

Fructificatio resupinata, pori cremicoloribus ad ochraceus, rotundis, 6-7 per mm, tubi et contextibus albidis, systema hyphale dimiticum, hyphae generatoriae hyalinae, fibulatae, hyphae skeletales hyalinae, basidiosporae cylindricae ad navicularis, 5-7 x 2-2.5 µm.

Holotype: Brazil, state of Pernambuco, Recife Municipality, Ecological Reserve Dois Irmãos, May 2001, on dead hardwood, T. Gibertoni 367 (URM 77851), isotype in O.

Etymology: navisporus = with navicular spores.

Basidioma perennial, resupinate, up to 0.5cm thick, tough when dry, margin narrow, up to 0.1cm wide, pale ochraceous, pore surface ochraceous, pores round, 6-7/mm, dissepiments thin, tubes concolorous with the subiculum, up to 5 mm thick, subiculum very thin, up to 100 µm thick.

Hyphal system trimitic, generative hyphae hyaline, clamped and thin-walled, 2.7-4.5µm; skeletal hyphae hyaline, thick-walled, 1.8-4.5µm; binding hyphae hyaline, solid, 1.8-2.7µm. Cystidia fusoid, hyaline, 10.0-12.0 x 2.7-3.6µm. Basidia clavate, 10.0-11.0 x 3.6-4.5µm. Basidiospores ellipsoid, hyaline, smooth, thin-walled, 4.5-5.4 x 2.0-2.7µm, IKI-.

Substrata: Unknown hardwood.

Distribution: Known only from the type locality.

Remarks: This species differs from *D. dilutabilis* Loguercio-Leite & Wright, a recently trimitic species described from Brazil (Loguercio-Leite & Wright, 1998) above all by the navicular basidiospores and regular pores.

Key to neotropical species of *Diplomitoporus*

1. Dendrohyphidia present in hymenium and dissepiments **.....D. hondurensis**
1. Dendrohyphidia absent 2

2. Basidiospores ellipsoid 3
2. Basidiospores allantoid to cylindrical 5

3. Basidiospores 5.5-7 mm long, 2-3 pores per mm..... **D. overholtsii**
3. Basidiospores and pores smaller 4

4. Pore surface white to cream, pores 6-8 per mm, basidiospores 2 µm wide
..... **D. costaricensis**

4. Pore surface straw-coloured, pores 4-5 per mm, basidiospores 2.7-3 µm wide ..... **D. stramineus**
5. Basidiospores 4-4.5 x 1.2-1.5 mm 6
5. Basidiospores larger 7

6. Pores angular, 2-3 per mm, basidiospores with two small oil drops **.D. allantosporus**
6. Pores round, 6-8 per mm, basidiospores without oil drops..... **D. venezuelicus**

7. Pores 2-3 per mm ..... **D. incisus**
7. Pores 4-7 per mm 8

8. Basidiospores navicular 5-7 µm long, pores 6-7 per mm, skeletal hyphae unchanged in KOH ..... **D. navisporus**
8. Basidiospores cylindrical to allantoid, 4.5-5.5 µm long, pores 4-6 per mm, skeletal hyphae dissolve in KOH ..... **D. dilutabilis**

Navisporus terrestris Gibertoni & Ryvarden nova species **Fig. 1 C-D:**
Fructificatia stipitata, pileus brunneus, pori 2-3 per mm, hyphae skeletals dextrinoideae, sporae naviculare tenutunicatae ad infirme crassitunicatae, non-dextrinoideae, 9-11 x 3.6-4.5 µm.
Holotype: Brazil, state of Rio Grande do Norte, Baía Formosa Municipality, Reserva Particular do Patrimônio Natural (RPPN) Senador Antônio Farias – Mata Estrela, July 2001, on soil (URM. 77580), isotype in O.
Etymology: terrestris = growing on the soil
Basidioma perennial, pileate, centrally stipitate, slightly infundibuliform, cartilaginous to tough when dry, pileus circular, 3.5-5.5 diameter, upper surface glabrous, slightly sulcate in radial zones, concentrically zonate, light to dark reddish brown, margin involute, when dry, stipe 0.6-1.5cm diameter, 0.5-1.0cm high above the ground, 2.5 under the surface pore surface dark ochraceous to brown, pores round to angular, 2-3/mm, dissepiments slightly thick, tubes concolorous with the context, up to 0.3cm thick, context homogeneous, ochraceous, up to 0.2cm thick at the base.
Hyphal system dimitic, generative hyphae hyaline and with clamps, 2.7µm wide; skeletal hyphae pale brown, thick-walled, 3.6-13.5µm, dextrinoid.
Basidia collapsed.
Basidiospores navicular to cylindrical, hyaline, smooth, slightly thick-walled, 9.0-11.0 x 3.6-4.5µm, IKI-.
***S*ubstrata**: On soil, next to *Caesalpinia echinata* Lam.
Distribution: Known only from the type locality.
Remarks: This species differs from the other species of *Navisporus* by the centrally stipitate basidioma and growing on soil.

Key to neotropical species of *Navisporus*

1. Basidiocarp stipitate, on the ground ..... **N. terrestris**
1. Basidiocarp sessile to effused reflexed, on dead wood 2
2. Pore surface, tubes and context ochraceous to cinnamon, context duplex with a black zone, pores 2-3 per mm, basidiospores 5-6 µm wide..... **N. sulcatus**
2. Pore surface, tubes and context pale brown to isabelline, context homogenous, pores 7-8 per mm, basidiospores 2-5 µm wide 3

3. Basidiospores 12-15 µm long, context up to 8 cm thick, punky and isabelline ..... **N. floccosus**
3. Basidiospores 7-8 µm long, context up to 1 cm thick, dense, pale brown ..... **N. perennis**

Phellinus macrosporus Gibertoni & Ryvarden nov. sp.
Fig. 2: Fructificatio resupinatus et porus brunneus, pori rotundis, 7-9 per mm, tubi et contextibus brunneis, systema hyphale dimiticum, hyphae generatoriae hyalinae efibulatae, hyphae skeletales vel brunnea, , setis praesentis, hyphae setales praesentis, basidiosporae globosae, indextrinoideae, 6.3-7.2 µm in diam.

Holotype: Brazil, state of Pernambuco, Recife Municipality, Ecological Reserve Dois Irmãos, November 2001, on dead hardwood, T. Gibertoni 205 (URM 77852), isotype in O.
Etymology: macrosporus = large spores.
Basidioma perennial, resupinate, hard when dry, margin very narrow, pore surface dark rust brown, pores round, 7-8/mm, dissepiments thin, tubes concolorous with pore surface, up to 1.0 cm thick, context deep brown, reduced to absent.
Hyphal system dimitic, generative hyphae hyaline, with simple septa and thin-walled, 2.7-4.5µm; skeletal hyphae yellowish to brown, thick-walled, 2.7-4.5µm.
Tramal setae lanceolate, thick-walled, dark brown, acute, 50-80 x 9-12µm.
Hymenial setae subulate to ventricose and usually hooked, 25.0-35.0 x 8.0-10.0µm.
Basidia clavate, 10.013.0 x 5.4-6.3 µm with four sterigmatas.
Basidiospores globose, hyaline, smooth, 6.3-7.2µm, IKI-.
Substrata: Unknown hardwood.
Distribution: Known only from the type locality.
Remarks: The species is remarkbly similar to Phellinus rufitinctus (Cooke) Pat. as the basidiocarp, the setal hyphae and the hymenial setae are identical to those of that species. The basidiospores are however, much larger (2.5-4.5 x 2-3 µm in P. rufitinctus) (Ryvarden & Johansen, 1980; Larsen & Cobb-Poule, 1990).
Additional specimen examined: From the type locality, March 2002 T. Gibertoni sin no. (URM 77583).

Fig. 3. *Polyporus inathinus* A) Basidiocarp seen from above, B) generative and binding hyphae, C) basidiospores. From the holotype.

Phellinus neocallimorphus Gibertoni & Ryvarden nov. sp.
Fig.1E
Ad *Phellinus callimorphus* (Lév.) Ryvarden sed absunt setae.
Holotype: Brazil, state of Alagoas, Reserva Particular do Patrimonio Natural, Sao Pedro. March 2001, T. Gibertoni N 376 (URM 77584), isotype in O.
Basidiocarp perennial, pileate applanate, dimidiate to conchate or more broadly attached, semicircular to elongated in shape, up to 3 cm wide and 5 cm long, up to 2 cm thick, margin rounded, consistency woody hard in thickened specimens, pileus dark reddish-brown to black, first finely velutinate, soon glabrous and black with a distinct thin cutile, smooth to distinctly sulcate in narrow bands, pore surface cinnamon in actively growing specimens, deep umber brown in old ones and then slightly shiny when turned in incident light, pores very small, angular, thin-walled, 7-9 per mm inviible to the naked eye, up to 1.2 cm deep, non-stratified, concolorous with the pore surface context dark reddish-brown with faint black lines reflecting earlier stages of growth, up to 4 mm thick at the base.
Hyphal system dimitic, generative hyphae thin-walled, hyaline and 1.5-3 µmwide, skeletal hyphae golden to pale rusty brown, thick-walled, 3-5 µmwide.
Hymenial setae absent.
Basidia not seen.
Basidiospores oblong ellipsoid to sub-cylindrical, slightly thick-walled, hyaline to slightlky pale yellow, 3.5-4.5 x 2-2.5 µm.
Substrata. On dead unknown hardwood.
Distribution. Known only from the type locality.
Remarks. The species is undoubtedly close to the paleotropical species *P. callimorphus* (Lev.) Ryv. Which however is not known from the neotropics and besides has richly with hymenial setae. The oblong ellipsoid to almost sub-cylindrical basidiospores are diagnostic for this species. It is easily separated from species like *P. senex* by its narrow basidiospores.

Polyporus ianthinus Gibertoni & Ryvarden nov. sp.
Fig. 3: Fructifiacatio pileatae, stipitatae, pileus violaceus, glaber, pori angulati, 6-7 per mm, systema hypharum dimiticum, hyphae generatoriae fibulatae, basidiosporae allantoideae 4-4.5-x 1-1.3 mm.
Holotype: Brazil, Pernambuco State, Igarassu municipality, Refugio Ecologico Charles Darwin, on dead hardwood, 12 January 2002, T. B. Gibertoni 282A (URM 77620), isotype in O.
Etymology: Ianthinus = violet, pertaining to the colour of the pileus.
Basidiocarp annual, laterally stipitate, pileus round to slightly spatulate or lobed, up to 8 cm wide and long, 2-6 mm thick, flexible when fresh, hardwhen dry, upper sur-

face vinaceous to brown, azonate, very finly lined radially, smooth, glabrous, dull, azonate, margin sharp and wavy, pore surface white drying ochraceous, pores round, 5-6 per mm with rather thick diessepiments, thus the pore openings hard almost invisible to the naked eye, tubes up to 2 mm deep and white to pale cream, context light cream to ochraceous, lighterthan the tubes, dense, up to 5 mm thick at the base.
Stipe lateral, concolorus with the upper surface, round to slightly flattened, glabrous and smooth, up to 3 cm long and 6 mm in diameter, dense and homogenous.
Hyphal system dimitic; generative hyphae with clamps, thin- walled, 2-4 mm wide, binding hyphae of the Bovista type, dichotomously branched, 4-7 mm wide in the main stem, tapering to thin whip like ends, thick-walled to solid towards the apices.
Cystidia or other sterile hymenial elements absent.
Basidia clavate, 4-sterigmate, 15-17 x 4-5 µm.
Basidiospores ellipsoid cylindrical, hyaline, IKI-, 5-6 x 3-3.5 µm.
Substrata. On dead fallen hardwood log.
Distribution. Known from Guyana and Brazil.
Remarks. The species is characterized above all by the vinaceous, glabrous and smooth pileus. In shape it is reminecent of *P. grammocephalus* Berk., which however has radial veins or lines on an ochraceous pileus, besides having spores 6-8 mm long. With its lateral stipe, this new species belongs in subgenus *Favolus*, and a key to the known neotropical species in the subgenus is given below.
Specimens examined: Guyana, Upper Demerara-Berbice Regon, Mabura Hill, Yaya Creek, 31. March 1987, G. J. Samuels 5329 (O, NY, BRG). Brazil: As holotype, November 2001, T. B. Gibertoni 310 (URM 77617) O.

Key to neotropical species of *Polyporus* s. str. subgenus *Favolus*.

1. Pileus dark chestnut, bay to vinaceous 2
1. Pileus white to deep tan or leather coloured 3

2. Pores 1-2 mm wide ..... **P. subpurpurascens**
2. Pores 5-6 per mm..... **P. ianthinus**

3. Pileus white when fresh, darker when dry, tessellate to smooth..... 4
3. Pileus leather, orange to brown, radially striate or with small hydnoid processes or squamules at least at the base 5

4. Pores 1-3 per mm, spores 9-12 µm long ..... **P. tenuiculus**
4. Pores 6-7 per mm, spores 6-7 µm long ..... **P. albostipes**

5. Pores 2-5 per mm ..... **P. grammocephalus**
5. Pores 1-2 per mm or larger 6

6. Pores 1-2 per mm, angular, pileus cream to tan, smooth, but often with radial lines

.....**P. philippinensis**

6. Pores elongated 2-4 x 0.5-0.7 mm, pileus whitish with hydnoid protuberances
..... **P. biskeletales**

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7: Studies in Neotropical polypores 19
Two wood-inhabiting *Amauroderma* species

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Abstract
Amauroderma adina and *A. africana* are described as new. Both have sessile wood inhabiting basidiocarps, thus deviating from other species in this genus.

Introduction
The genus *Amauroderma* of Ganodermataceae is characterized by stipitate and generally brown basidiocarps and ornamented round to oblong ellipsoid spores. *Ganoderma* is a closely related genus, separated microscopically by distinctly truncate spores with a tapering end maintaining a germ pore, see illustrations in Gilbertson & Ryvarden 1986-87. The shape of basidiocarp varies considerably in *Ganoderma*, from centrally stipitate to broadly attached and sessile. Many species in the subgenus *Ganoderma* have strongly varnished or laccate upper surfaces. With one exception, this is a feature unknown in *Amauroderma*.
Some years ago, I was sent large collections of polypores for identification from the National Fungus Collection. Among these, there was a striking dimidiate, wood-inhabiting *Amauroderma* species, thus, deviating strongly from the normal type of basidiocarps in the genus. Early the same year, I had collected a similar species in Venezuela and felt it would be useful to describe them together. The Neotropical species of *Amauroderma* is monographed by Furtado (1981), but no sessile species are recorded there. Further, my own keys to the genus in Africa and America, including all species I am aware of and based on type collections, revealed no matches for the following two species.

Amauroderma africana Ryvarden nova species
Fig. 1
Ad *Ganoderma amazonensis* Weir, sed basidiosporae globosae et cuticula multiradiata. Holotype: Liberia, Sinoe Co, Kulo, 3. March 1948. J. T. Baldwin, jr. 12357, BPI, isotype in O.
Basidiocarps annual pileate, semicircular, dimidiate or with a short lateral stipe, dense and fragile when dry, probably flexible when fresh, 10 x 8 x 1 cm at the base, upper surface dark brown, dull, finely adpressed velvety to almost glabrous in faint zones, strongly veined as if being wrinkled during drying and probably smoother

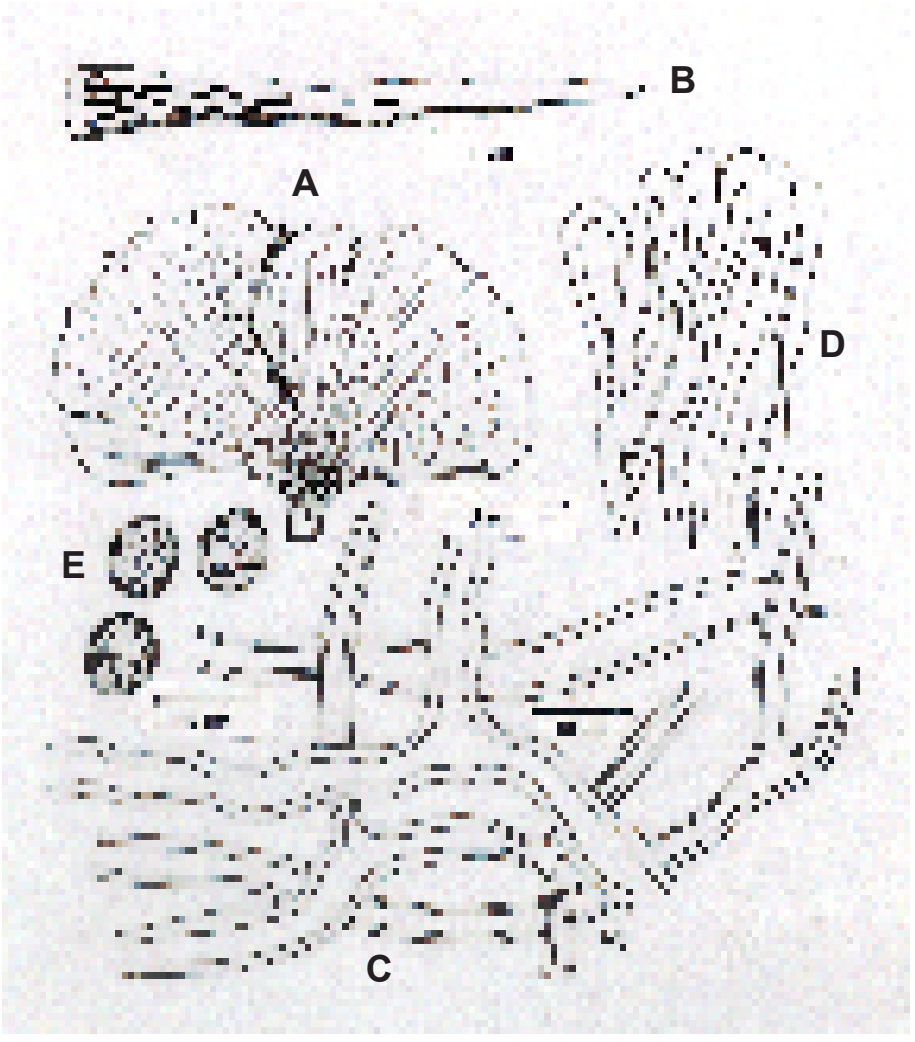

Fig. 1. *Amauroderma africana*, A) Basidiocarp seen from above, B) section through basidiocarp, C) part of skeletal hyphae, D) agglutinated hyphae from the cuticle, E) basidiospores. From the holotype.

when fresh, pore surface pale ochraceous and discolored when touched, dark brown in old specimens, pores circular, about 5-6 per mm with thick pore walls; tube layer concolorous with pore surface, up to 1 mm thick, context ochraceous, distinctly paler than the tubes, and towards the base with numerous black, hard and resinous lenses or short bands in radial direction, each up to 4 mm long and 1 mm wide, cuticle present, dark brown to black, dense and cracking by pressure, 200 to 400 µm thick.
Hyphal system dimitic; generative hyphae hyaline, thin-walled, with clamps, 2-6 µmin diam, difficult to observe in dried specimens; arboriform skeletal hyphae abundant, thick-walled, hyaline, negative in Meltzer's reagent, lower part unbranched in lengths up to 100 µm and then with a few distal branches, up to 10 µm wide in main stem (3% KOH) to 3 µm in the thin apices.
Cuticle 150-200 µmthick with agglutinated, thick-walled, dark brown hyphal ends out of which some with a widened apex.
Basidia subglobose, 14-18 x 10-14µm with 4 sterigmata.
Basidiospores globose, finely ornamented, pale yellow, 8-10 µm in diameter.
Substrata. Unknown dead hardwood tree.
Distribution. Known only from the type locality.
Remarks. This is a remarkable species with its dimidiate to semistipitate basidiocarps, a feature not known among the African species of the genus. From *A. andina* is easily separated by the dimidiate to semistipitate basidiocarp with a strongly veined surface and the numerous black resinous lenses in the context towards the base. Their microstructure is, however, strikingly similar.

Amauroderma andina Ryvarden nova species
Fig. 2
Ad *Ganoderma amazonensis* Weir, sed basidiosporae globosae.
Holotype: Venezuela, Merida province, Monte Zerpa, 2000 m a.s. l. 29 January 2001, on dead hardwood tree, L. Ryvarden 43459 (O), isotype in VENN.
Basidiocarps perennial, pileate, sessile and broadly attached, corky to woody, 11 x 13 x and 2 cm thick at the base, upper surface dark brown, flat, slightly sulcate with some faint black bands, dull and very finely velutinate becoming glabrous by age, with a distinct crust in section, pore surface creamy white at first, later pale ochraceous, pores circular, about 5-6 per mm with thick pore walls; tube layers concolorous with pore surface, up to 10 mm deep without stratification, separated from the context by a thin darker line, context white, distinctly paler than the tubes and up to 6 mm thick at the base, cuticle present, dark brown to black and dense.
Hyphal system dimitic; generative hyphae hyaline, thin-walled, with clamps, 2-5 µmin diam, difficult to observe in dried specimens; arboriform skeletal hyphae abundant, thick-walled, hyaline negative in Meltzer's reagent, lower part unbranched in lengths up to 110 µm and then with a few distal branches, up to 10 µm wide in main stem (3% KOH) to 3 µm in the thin apices.
Cuticle: 150-200 µm thick consisting of agglutinated, dark brown, thick-walled, hyphal ends in a vertical palisade making them difficult to separate.

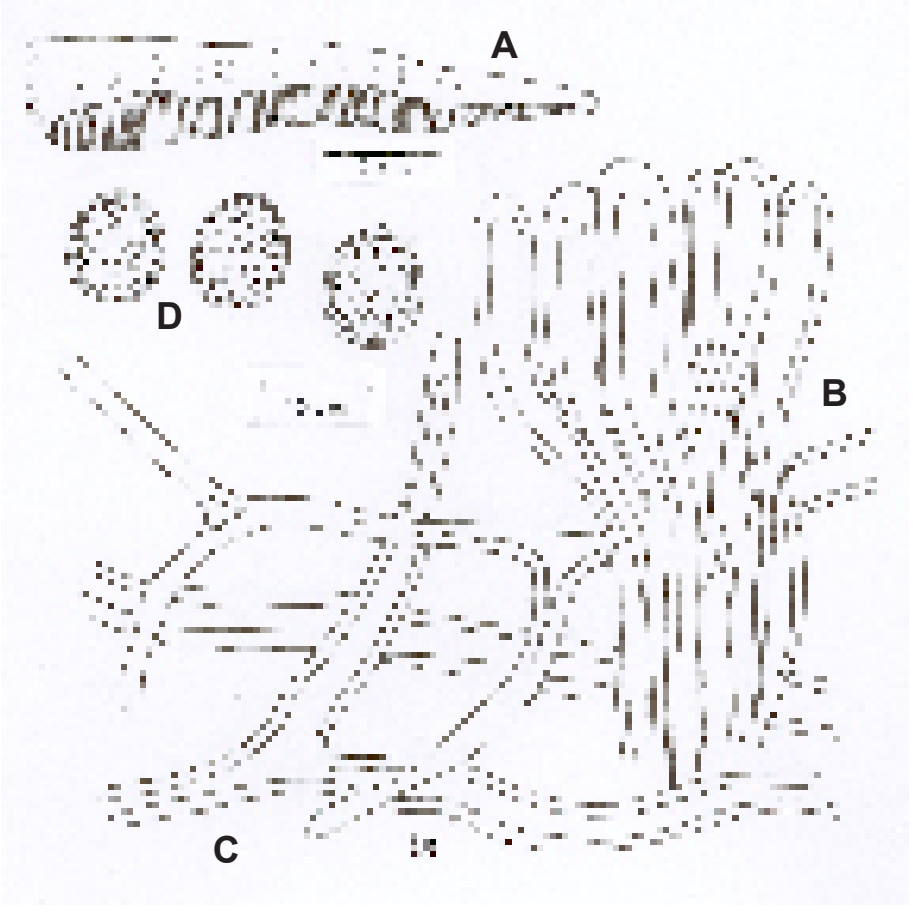

Fig 2. *Amauroderma andina* A) section of basidiocarp, B) palisade of agglutinated hyphae from the cuticle, skeletal hyphae D) basidiospores. From the holotype.

Basidia not seen.
Basidiospores globose, finely ornamented, pale yellow, 8-10 µmin diameter.
Substrata. Unknown dead hardwood tree.
Distribution. Known only from the type locality.
Remarks. This is a remarkable species, being the first *Amauroderma* species to have a sessile basidiocarp and growing on dead wood. Ordinary, *Amauroderma* species are all distinctly stipitate and growing on the ground from dead or living roots. In the field, this new species was mistaken for being a *Perenniporia* species because of the basidiocarp and the white pore surface and context. When examined microscopically, the unique spores where discovered and then G. *amazonensis* Weir came into consideration, since the two species have almost identical basidiocarps in all macroscopcial features. However, the latter has distinctly truncate spores, easily separated when they are mounted in the same preparation. Whether the current distinction between the two genera will hold true, i.e. *Ganoderma* with truncate spores, and *Amauroderma* with globose to oblong spores, will stay the test of DNA sequencing, remain to be seen.
With its sessile basidiocarp growing on wood, a common feature in *Ganoderma*, it may be that *A. andina* really is the first *Ganoderma* species without truncate spores.

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Dr. Amy Rossman, The national Fungus Collection, Beltsville, Maryland, USA has kindly sent me polypores for identification for which I express my gratitude.
Dr. J. Colman has kindly read the manuscript and suggested linguistic improvements**.**

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8: Studies in neotropical polypores 20 Some new polypores from the Amazonas region

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Abstract
Ceriporiopsis vinosa, Grifola amazonica and *Oxyporus neotropicus* are described as new with keys to Neotropical species of the respective genera.

Introduction
By courtesy of New York Botanical Garden I have over years been sent a number of polypores from the Neotropical region for identification. Among these there were a restricted number of species that apparently were new species and they are described below. Keys to the respective genera with the new species are provided since there exists no manual for determination of neotropical polypores.

Ceriporiopsis vinosa Ryvarden nova species
Fructificatio resupinata, pori vinosa, angulati 3-5 per mm, tubi et contextibus vinosa, systema hyphale monomiticum, hyphae generatoriae hyalinae, fibulatae, basidiosporae ellipsoideae, 4-4.5 x 2-2.5 µm.
Holotype: Guyana, Cuyuni – Mazaruni Region VII, along Koatse River, 2 km east of Pong Ruiver, 600 m , February - March 1987, G. J. Samuels et al. 4941, NY, isotype in O.
Basidiocarps annual, resupinate, soft when fresh, brittle when dry, up to 7 mm thick, pore surface vinaceous when fresh, deep purplish bay to almost black when dry, pores thin-walled, angular, 3-5 per mm, tube layer dense and resinous, concolorous to pore surface, up to 5 mm deep, subiculum cinnamon and strikingly paler and less resinous than the tubes, about 1-2 mm thick, no colour change with KOH.
Hyphal system monomitic, generative hyphae hyaline, thin- walled and with clamps, preparations difficult to make and much oily resinous matter are present among the hyphae, negative in Meltzer's reagent, 3.-6 µm in diam.
Cystidia absent.
Basidia clavate, 4-sterigmate, 12-14 x 3.5-4.5 µm.
Basidiospores ellipsoid, smooth, negative in Meltzer's reagent, 4-4.5 x 2-2.5 µm.

Substrate. On dead hardwood tree.
Distribution. Known only from the type locality.
Remarks. Collections of this species are difficult to examine in dry condition because of the resinous contents, and hyphal structures are most easily seen in preparations form the subiculum. It is very distinct with is beautiful colour and should be easy to recognize in the field.
The resupinate basidiocarp with a monomitic hyphal system and smooth, hyaline and thin-walled basidiospores makes *Ceriporiopsis* the obvious alternative for this species since these characters are shared by all species in the genus. Future DNA sequencing may reveal whether it is natural or only is an assembly of similar, but unrelated species and a good example of biological convergence.
In the field the basidiocarps may be mistaken for a *Hapalopilus* species, which however have a strong colour reaction with KOH, becoming cherry red instantly in contact with a 3% solution of this compound.

Key to Neotropical species of *Ceriporiopsis*

1. Pores 6-8 per mm **2**
1. Pores larger **3**

2. Basidiospores allantoid, 3.5-5 x 1-1.2 µm ..... **C. loweii**
2. Basidiospores ellipsoid, 3-3.5 x 2-3 µm ..... **C. flavilutea**

3. Basidiospores 8-10 µm long ..... **C. cerrusata**
3. Basidiospores shorter 4

4. Pores irregular, up to 3 per mm becoming daedaleoid to sinuous **5**
4. Pores more or less angular to round **.....6**

5. Basidiospores 3-4 µm long, pores irpicoid to daedaleoid, 1-2 per mm ..... **C. latemarginata**
5. Basidiospores 4-5 µm long, pores round to angular, in parts split, 2-3 per mm .....**C. balaenae**

6. Basidiospores subglobose 7
6. Basidiospores ellipsoid to cylindrical 8

7. Basidiospores 2.5-3.5 x 2-2.5 µm **.....C. mucida**
7. Basidiospores 5-6 x 4-5 µm **.....C. rivulosus**.

8. Smooth cystidia present, basidiospores cylindrical, 5-6 x 2.5-3.5 µm **C. cystidiata**
8. Cystidia absent, basidiospores ellipsoid, 3.5-4.5 x 2.5-3 µm. 9

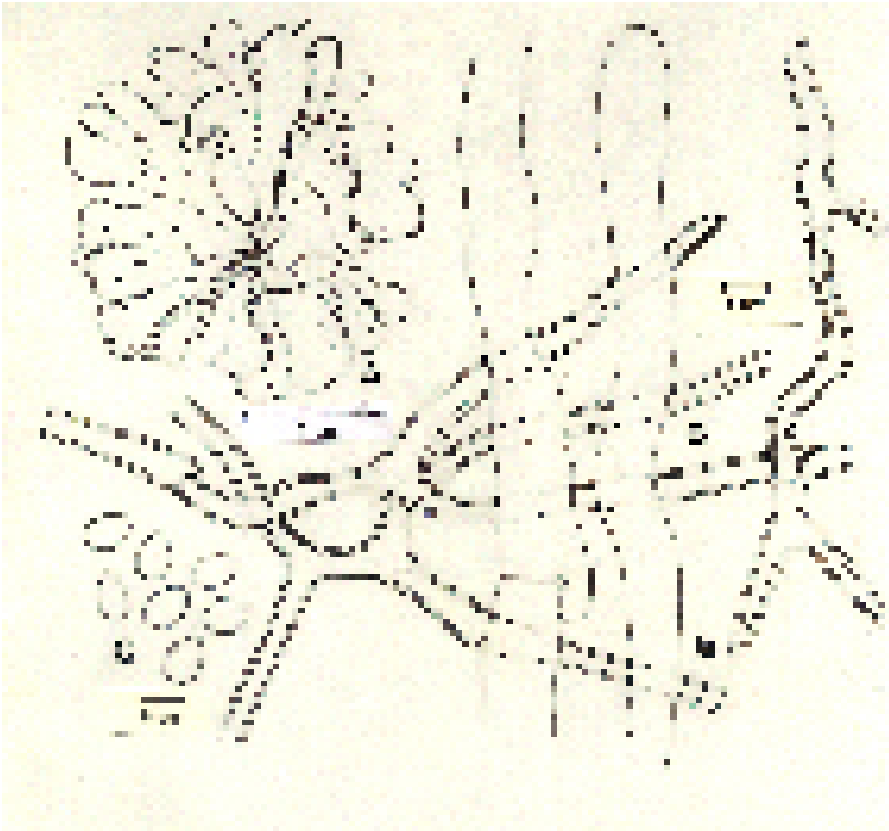

Fig. 1. *Grifola amazonica* A) Basidiocarp seen from above, B) hyphae from context, C) basidiospores. From the holotype.

9. Basidiocarp vinaceous when fresh, deep bay or wine-coloured when dry...**C. vinosa**
9. Basidiocarp white to pale brown 10

10. Basidiospores slightly amyloid, pore surface white .....**C. myceliosa**
10. Basidiospores non-amyloid, pore surface pale brown .....**C. umbrinescens**

Grifola amazonica Ryvarden nova species
Fig. 1
Ad *Grifola frondosa* (Dicks.:Fr.) S. F. Gray, sed basidiosporae 4-4.5 x 3-3.5 µm (6-7 x 4-4.5 µm in *G. frondosa*).
Holotype: Brazil. Amapa, Municipo de Oiapoque, BR 156, road between Calcoene and Oiapoque, on rotten log, S. A. Mori & J. Cardosa, 2. December, 1984. NY,

isotype in O.
Basidiocarps annual, stipitate, compound, entire structure up to 8 cm wide, stipe much branched from a thin base, dark brown, up to 1 cm long and 6 mm in diameter, giving rise to restricted numbers of imbricate, fan-shaped or flabelliform and often confluent pilei up to 4 cm wide and 3 mm thick; upper surface evenly brown, glabrous and smooth, pore surface pale greyish brown, probably lighter in fresh condition, pores angular, 3-4 per mm, with thin, lacerate dissepiments, tubes concolorous, 2 mm deep, context ochraceous about 1 mm thick in individual pilei, thicker at base and in main branches of stipe.
Hyphal system dimitic; generative hyphae hyaline, thin-walled, with clamps, rarely branched, 4-10 µmin diam; skeletal hyphae moderately thick-walled, with infrequent dichotomous branching, 4-8 µmwide.
Cystidia absent.
Basidia clavate, 4-sterigmate, 12-15 x 5-7 µm, with a basal clamp.
Basidiospores ovoid to ellipsoid, hyaline, smooth, negative in Meltzer's reagent, 4-4.5 x 3-3.5 µm.
Substrate. On dead hardwood tree.
Distribution. Known only from the type locality.
Remarks. Basidiocarps of this species look like a dwarf imitation of the temperate circumpolar *G. frondosa*, but easily separated by much smaller basidiocarps and basidiospores. According to my notes the genus has previously not been reported from the Neotropical region.

Oxyporus neotropicus Ryvarden nova sp.
Fig 2. Ad *Oxyporus obducens* (Pers.) Donk, sed fructificatio cinnamomea et basidiosporae cylindricae.
Holotype: Guyana, Upper Demerara-Berbice Region X, Upper Demerara subregion X-1, Block 200, swamp forest, 27 March 1987, G. Samuels 5252 NY, isotype in O.
Basidiocarp annual resupinate, adnate, cinnamon brown, probably soft when fresh. Hard when dry, up to 3 mm thick, pores angular and partly split in the dissepiments, 5- 6 per mm, tubes and context concolorous with the pore surface, tubes up to 2 mm deep and context up to 1 mm thick.
Hyphal system monomitic, generative hyphae simple-septate, hyaline to faintly brown, thin- to thick-walled, 2-5 µm diam.
Cystidia abundant, acute, arising deep in the subhymenium and bending into the hymenium, thick-walled, cylindrical and tapering, coarsely encrusted in the upper part with small to large pointed crystals, 30-60 x 5-9 µm measured from the septum from which they arise.
Basidia not seen.
Basidiospores cylindrical to oblong ellipsoid, hyaline, smooth, negative in Meltzer's reagent, 4-5 x 1.5-2 (2.) µm.
Substrata. Unknown hardwood tree.

Fig. 2. Oxyporus neotropicus A) part of hymenium B) cystidia, C) basidiospores. From the holotype.

Distribution. Known only from the type locality.
Remarks. The species looks like any brown resupinate polypores until a microscopical examination reveal the abundant and very conspicuous cystidia and the simple septate hyphae indicating *Oxyporus* as the proper genus.

Key to neotropical species of *Oxyporus*

1. Basidiocarps perennial, pileate and tubes stratified, ...2
1. Basidiocarps annual, resupinate, tubes not stratified 3

2. Basidiocarps cinnamon **.....O. cinnamomeus**
2, Basidiocarps whitish, at least on pore surface and in context **.....O. populinus**

3. Cystidia heavily encrusted 4
3. Cystidia with a small crown of crystals 5

4. Pores dentate and deeply split, 1-3 per mm, basidiocarps white to ochraceous .....**O. pellicula**
4. Pores entire and angular, 5-6 per mm, basidiocarps cinnamon **.....O. neotropicus**

5. Spores 5-7 µm long, pores usually 1-3 per mm **.....O. latemarginatus**
5. Spores 3-4.5 µm long, pores 4-6 per mm **..... O. obducens**

Acknowledgements
Dr. B. Thiers , New York Botanic Garden, New York, USA has kindly sent me polypores for identification for which I express my gratitude. Dr. J. Colman has kindly read the manuscript and suggested linguistic improvements.

9: Studies in neotropical polypores 21
New and interesting species from Venezuela

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Abstract
Ceriporiopsis hydnoidea and *Polyporus nigrovelutinus* are described as new with keys to the Neotropical species of the respective genera, *Pachykytospora nana* is reported as new to America, while *Amauroderma corneri, Inonotus crocitinctus, I. fimbriatus* and *Polyporus ianthinus* are new to Venezuela.
Key words: Polypores, Venezuela.

Introduction
The polypores of Venezuela are fairly well known due to recent publications (Ryvarden & Iturriaga 2001, ibid 2004). Never the less, recent collecting in different parts of the country has yielded two new species and some new records for the country.

Amauroderma corneri Gulaid & Ryvarden
Mycol. Helv. 10:25-30, 1998.
Venezuela, Eastado Bolivar, Las Nieves, 12 June 1995, on dead hardwood, Ryvarden 37600, O, VENN.
The species was originally described from Southern Brazil and is exceptional in the genus by being almost whitish when fresh darkening to brown by age and drying. It has also gloeopleurous hyphae, a non reported character for the rest of the genus. Further DNA sequencing may shed light on its relationship to the other species in the genus.

Ceriporiopsis hydnoidea Ryvarden & Iturriaga nova sp.

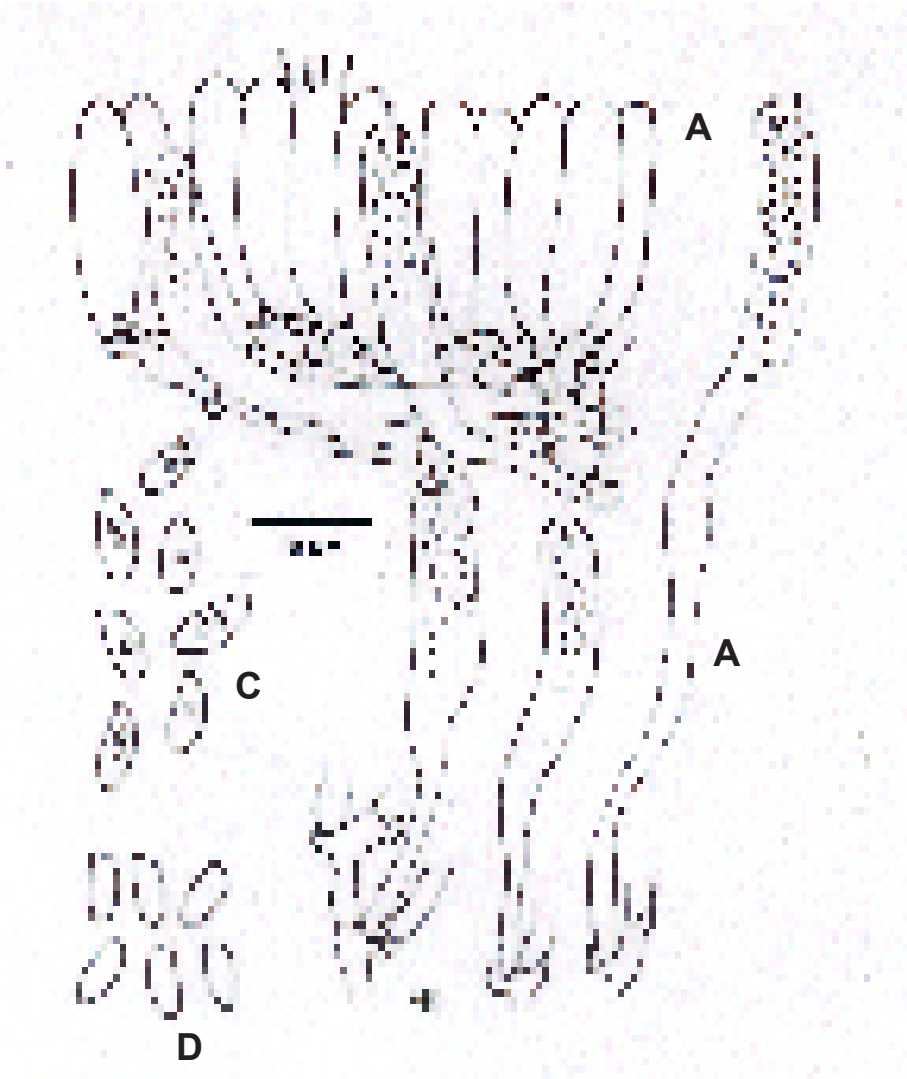

Fig. 1. Ceriporiopsis hydnoidea A) section through hymenium, B) gloeocystidia, C) basidiospores, C). cystidia, from the holotype. *Ceriporiopsis cystidiata* D) asidiospores, from the isotype.

Fig 1
Ad *Ceriporiopsis cystidiata* Loguero-Leite & Ryvarden sed cum gloeocystidia et basidiosporae ellipsoideae.
Holotype: Venezuela, Estado Merida, Parque nacional, Sierra Nevada, Sector La Mucuy, 2650 m, 1, February 2001, on dead hardwood log white a white rot, Ryvarden 43630, VENN, isotype in O.
Etymology: *hydnoides* refers to the hydnoid hymenophore with deeply split pores.
Basidiocarps resupinate, annual, up to 12 cm in longest dimension, 1-3 mm thick, soft when fresh, brittle and fragile when dry, margin narrow to lacking, white, pore surface white, pores thin-walled, first angular, 2-3 per mm but soon splitting into hydnoid processes and up to 3 mm between the split parts, tubes to 8 mm deep, concolorous with the pore surface, subiculum white and thin.
Hyphal system monomitic, all hyphae thin-walled, smooth and with clamps, 2-5 µmwide.
Gloeocystidia present, arising deep in the trama and bend into the hymenium but not projecting above it, yellowish oily content as grains and small drops, no reaction in Meltzer's reagent, 4-8 µm wide and up to 120 µm long.
Basidia clavate with four sterigmata, 14-18 x 4-6 µm.
Basidiospores ellipsoid, smooth, hyaline and without reaction in Meltzer's reagent, 5-7 x 2.5-3 µm.
S**ubstrata**. On dead hardwood with a white rot.
Distribution. Known only from the type locality.
Remarks. The irregular pores becoming split and hydnoid, the yellow gloeocystidia and the ellipsoid to almost navicular basidiospores characterize this species. From the slightly similar *C. cystidiata*, it is separated by the spores (cylindrical in *C. cystidiata*) and the yellow, long gloeopleurous cystidia (small, hymenial and hyaline in *C. cystidiata*).

Key to notropical species of *Ceriporiopsis*

1. Pores 6-8 per mm **2**
1. Pores larger **3**

2. Basidiospores allantoid, 3.5-5 x 1-1.2 µm ..... **C. loweii**
2. Basidiospores ellipsoid, 3-3.5 x 2-3 µm ..... **C. flavilutea**

3. Basidiospores 8-10 µm long ..... **C. cerrusata**
3. Basidiospores shorter 4

4. Pores irregular, split to hydnoid, up to 3 per mm **5**
4. Pores more or less angular to round..... **8**

5. Cystidia present 6
5. Cystidia absent 7

6. Cystidia hyaline, hymenial and small, basidiospores cylindrical ..... **C. cystidiata**.
6. Cystidia yellowish, basidiospores ellipsoid to almost navicular ..... **C. hydnoides**

7. Basidiospores 3-4 µm long, pores irpicoid to daedaleoid,
1-2 per mm .....**C. latemarginata**
7. Basidiospores 4-5 µm long, pores round to angular, in parts split,
2-3 per mm .....**C. balaenae**

8. Basidiospores subglobose 9
8. Basidiospores ellipsoid to cylindrical 10

9. Basidiospores 2.5-3.5 x 2-2.5 µm ..... **C. mucida**
9. Basidiospores 5-6 x 4-5 µm..... **C. rivulosus**.

10. Smooth cystidia present, basidiospores cylindrical, 5-6 x 2.5-3 µm . **C. cystidiata**
10. Cystidia absent, basidiospores ellipsoid, 3.5-4.5 x 2.5-3 µm. 11

11. Basidiospores slightly amyloid, pore surface white ..... **C. myceliosa**
11. Basidiospores non-amyloid, pore surface pale brown ..... **C. umbrinescens**

Inonotus fimbriatus Gomez & Ryvarden
Mycotaxon 23:291-292, 1985.
Venezuela, Estado. Merida, Monte Zerpa by Merida, about 2000 m, 29. January 2001, on dead hardwood, L. Ryvarden 43482, VENN, O. New to the country.
The species was described on specimens collected in the mountains of southern Costa Rica, in a similar environment to those of Venezuela around Merida. It will probably also be found in similar localities further south along the Andes.

Inonotus crocitinctus (Berk. & M. A, Curtis) Ryvarden
Norw. J. Bot. 19:232, 1972. – *Polyporus crocitinctus* Berk. & M. A. Curtis, J. Linn. Soc. Bot. 10:311, 1868.
Venezuela, Estado Merida, La Carboneria, in *Podocarpus* forest, 2400 m, 14. December 1972, A. Bresinsky, O, VENN. New to the country.
The species was originally described from Cuba (K!), but we have later seen specimens from Jamaica, Costa, Rica and Colombia.
Microscopically the species is easily identified by strongly hooked hymenial setae and hyaline, ellipsoid basidiospores.

Pachykytospora nanospora David & Rachjenberg

Mycotaxon 45: 137, 1992.
Venezuela, Eastado Bolivar, Canaima National Park, Gran Sabana, Carretera Parupa-Kavanayen, 1300 m, 20 Nov. 1994, on dead hardwood log, Ryvarden 35264, New to America.
The species was originally described from Gabon in Africa and is easily recognized microscopically by ornamented, round and small basidiospores and strongly dextrinoid skeletal hyphae. It may be confused with *Perenniporia* species since many species of this genus have dextrinoid skeletal hyphae, but all species in this genus have smooth basidiospores.

Polyporus nigrovelutinus Ryvarden & Iturriaga nova sp.
Fig. 2
Fructificatio pileatae, stipitatae, pileus et contextus brunneus, pori angulati, 3-4 per mm, systema hypharum dimiticum, hyphae generatoriae fibulatae, basidiosporae ellipsoideae 6-8 x 3.5- 4 mm.
Holotype: Venezuela. Estado Bolivar, Parque Nacional Canaima, Luepa, 19. November 2002, on a much decomposed log, I. Iturriaga & H. Urbina no174 in VEN, isotype in O.
Etymology: *nigrovelutinus* refers to the velutinate pileus, becoming black in zones as the tomentum wears away.
Basidiocarp annual, centrally to laterally stipitate, pileus round to spatulate, up to 1 cm in diameter, 2 mm thick, flexible when fresh, hard when dry, upper surface dark brown, finely zonate, adpressed velutinate, mixed with a few black zones exposing the underlying cuticle, margin round, black and cuticle continuous over to the cinnamon pore surface, the black margin of which is about 1 mm wide, pores angular to slightly elongated radially, 3-4 per mm measured tangentially, tubes concolorous, up to 1 mm deep, context dark cinnamon, 1 mm thick and with a black cuticle below the upper tomentum.
Stipe dark brown, round, adpressed velutinate, longitudinally wrinkled when dry, up to 3 cm long and 3 mm in diameter, dense and homogenous and with a thin black cuticle below the tomentum..
Hyphal system dimitic; generative hyphae with clamps, thin- walled, 2-4 mm wide, binding hyphae of the *Bovista* type, dichotomously branched, pale yellow, 3-6 µm in diameter, tapering to thin whip like ends, thick-walled to solid towards the apices.
Cystidia or other sterile hymenial elements absent.
Basidia clavate, 4-sterigmate, 17 -20 x 5-6 µm.
Basidiospores oblong ellipsoid, hyaline, IKI-, 6-8 x 3.5-4 µm.
Substrata. On dead decomposed hardwood log.
Distribution. Only known from the type locality.
Remarks. This is a conspicuous species by the dark brown, velutinate pileus with a black cuticle below the tomentum, the black cuticle also covering he margin of the pore surface and the cinnamon tubes and context. The closest relatives seems to be

Fig. 2. Polyporus nigrovelutinus A) binding hyphae from context, B) basidiospores. From the holotype.

in the group around *P. melanopus* Fr. The latter species has the same type of velvety pileus and stipe, but a white context and usually much larger basidiocarps, such as from 5-10 cm in diameter. The blackish margin creeping over the margin covering also part of the pore surface is also a characteristic never seen in *P. melanopus (*Ryvarden & Gilbertson 1994).

Key to neotropical species of *Polyporus* s. str. subgenus *Melanopus*

1. Pileus white, tan, leather coloured to light tobacco brown **2**
1. Pileus dark brown, purplish or black **4**

2. Temperate to montane species, pores 7-9 per mm ..... **P. varius**
2. Tropical to subtropical species, pores larger ..... **3**.

3. Pores radially arranged, 1 per mm ..... **P. guianensis**
3. More than 4 pores per mm ..... **P. leprieurii**

4. Pileus infundibuliform, spores 9-12.5 5 µm long **5**
4. Pileus mostly applanate, spores shorter than 9 µm **6**

5. Pileus striate pale brown becoming chestnut, pores 2-4 per mm, spores 9-12 x 4-5 µm ..... **P. virgatus**
5. Pileus surface whitish to beige and without radial lines or striae, pores 1-2 per mm, up to 1.5 mm long at the stipe, spores 8-10 x 3-4 µm ..... **P. puttemannsii**

6. Pileus and stipe velutinate, dark brown and with black cuticle, context cinnamon ..... **P. nigrovelutinus**
6. Pileus and stipe glabrous, context whitish to cork-coloured 7

7. Tropical species, clamps present ..... **P. dictyopus**
7. Montane to temperate species, simple septa present ..... **P. badius**

Polyporus ianthinus Gibertoni & Ryvarden
Synopsis fung. 18: 54, 2004.
Venezuela, Estado Bolivar: Las Nieves, 12 June, 1995, on dead hardwood log, L. Ryvarden 37666. O, VENN, new to the country.
The species has recently been described based on a rich Brazilian collection.
It is easily identified in the field because of its violet, smooth and glabrous pileus.

Acknowledgements
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10: Porostereum vibrans (Berk.) Ryvarden

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Abstract
Porostereum vibrans (Berk.) Ryvarden is described and its taxonomic position discussed. A key to neotropical species of *Porostereum* is provided.

Introduction
Among the steroid fungi of the neotropical area *Aquascypha hydrophora* (Berk.) Reid takes an isolated position with its dark brown, large funnel shaped basidiocarps, almost invariably full of water. The basidiocarps are almost always sterile and (Reid 1965) in his monograph of the stipitate steroid fungi, was unable to find basidiospores in any of the many specimens deposited in the Kew Herbarium. I have found the species numerous times in Venezuela, but again, no traces of basidia and basidiospores. Reid (op cit) refers to different authors who have reported the spores to be small and globose.

There are numerous tufts of hyphae projecting into the water inside the basidiocarp, and one may speculate if there is some sort of vegetative dissemination by the water insects living there.

Welden (1967) transferred *Stereum vibrans* Berk. & Curtis to *Aquascypha* because of its brown basidiocarps with a trimitic hyphal structure with few binding hyphae. However, the basidiocarps of *S. vibrans* are sessile and flat and have a distinct black cuticle and cylindrical basidiospores, different from those of *A. hydrophora*. *Porostereum* Pilat typified by *P. spadicea* includes species having the same characteristics as seen in *S. vibrans*, i.e. pileate tomentose basidiocarps, smooth hymenophore and a monomitic to dimitic hyphal system and variable occurrence of cystidia (Hjortstam & Ryvarden 1989). Thus, it seems more natural to place *S. vibrans* in this genus and retain *Aquascypha* as a monotypic genus because of its large and unique basidiocarps.

Porostereum vibrans (Berk. & W. A. Curtis) Ryvarden comb. nov.
Fig. 1.
Basionym: *Stereum vibrans* Berk. & W. A. Curtis, Journ. Linn. Soc. Bot. 10:332, 1868 (K!). - *Aquascypha vibrans* (Berk. & M. A. Curtis) Welden . J. Tenness. Acad. Sci. 42:81, 1967. - *Boreostereum vibrans* (Berk. & M.A. Curtis) Davydkina & M. Bondartseva in Novosti Sist. Nizh. Rast. 13: 74, 1976.

Basidiocarp effused-reflexed to distinctly pileate, tough when fresh, harder when dried, up to 2 mm thick; pileus up to 5 cm wide, dimidiate to broadly attached and often fused laterally to adjacent basidiocarps or densely imbricate, often lobed and wavy, permanently tomentose – hirsute, densely zoned, dark brown, hymenium smooth to wavy reflecting growth zones, pale brown to deep isabelline with a violet tinge, context dark brown, black cuticle present below the tomentum.
Hyphal system trimitic, generative hyphae with clamps, hyaline, 2-5 µm wide, skeletal hyphae dominating the basidiocarp, brown, solid to thick-walled, 3-6 µm wide, from the subhymenium bending into the hymenium as smooth hyphal ends forming a catahymenium, binding hyphae few, sparingly branched, pale brown and apparently solid 2-4 µm wide.
Cystidia absent.
Basidia clavate, 15-20 x 5-7 µm, with four sterigmata.
Basidiospores cylindrical, thin-walled smooth, non-amyloid, 4.5-5 x 1.5-2 µm.
Substrata. Dead hardwood with a white rot.
Distribution. Tropical American species and known from Cuba (type), Jamaica, Ecuador, Costa Rica, Trinidad, Guatemala, Brazil and Colombia, based on collections in the Kew and Oslo herbarium, besides Welden 1967 and information on the internet.
Remarks. In the field the species is easily confused with the macroscopically similar *Xylobolus subpileatum*, which however, has amyloid spores and acanthophyses, thus microscopically easy to distinguish.

Key to neotropical species of *Porostereum*

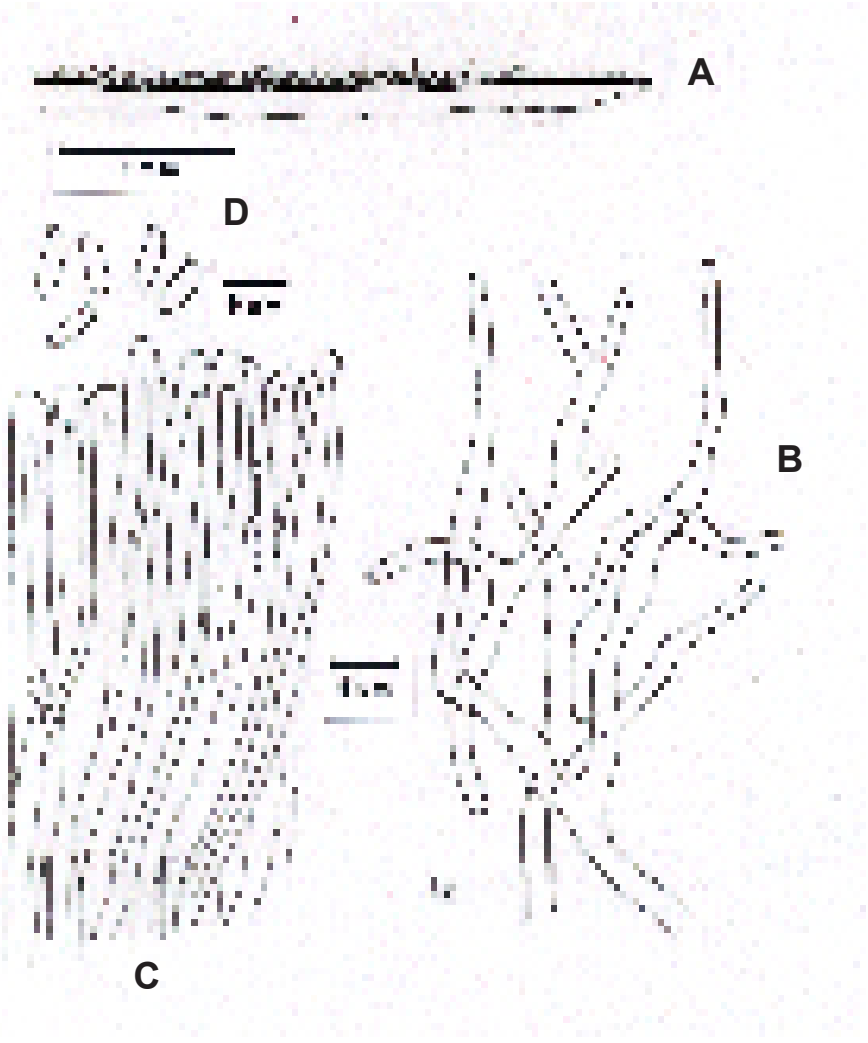
1. Generative hyphae with clamps 2
1. Generative hyphae with simple septa 5

2. Hymenophore ochraceous to beige, on coniferous wood, from higher elevations in Mexico **.....P. sharpianum**
2. Hymenophore clay-coloured to dark brown or grey, on hardwood, widespread species 3

3. Spores 13-15 µm long, hyphal system monomitic **.....P. pilosiusculum**
3. Spores 5-8 µm long, hyphal system dimitic 4

4. Hymenophore lilaceous, spores ellipsoid, 6.5-7.5 µm long **.....P.lilacinum**
4. Hymenophore otherwise coloured, spores cylindrical 4.5-5 µm long **.....P. vibrans**

5. Binding hyphae present, skeletal hyphae absent, known only From Mexico **.....P. mexicanum**
5. Binding hyphae absent, skeletal hyphae present or absent 6



on extralimital species. J. Tenness. Acad. Sci. 42:81-84.

Fig 1. Porostereum vibrans A) section through a basidiocarp, B) hyphae from the

6. Basidiome distinctly pileate, sessile to fan shaped, hymenophore beige to pinkish brown, hymenial cystidia ventricose, pseudocystidia absent ..... **P. papyrinum**
6. Basidiome effused-reflexed, hymenophore dark grey to dark vinaceous brown, or lilaceous to purplish, hymenial cystidia subulate, skeletocystidia usually abundant...7

7. Hymenophore lilaceous, metuloid cystidia brown to dark brown **.....P. amethysteum**
7. Hymenophore brown or dark violet, metuloid cystidia almost hyaline to pale brown.....8

8. Pileus normally present, up to 1 cm wide, skeletal hyphae present in context and tomentum, pantropical and throughout United States ..... **P. crassum**
8. Pileus absent, basidiome resupinate, skeletal hyphae absent, known only from bamboo in the type locality in Colombia ..... **P. novo-granatum**

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11: Two new Tyromyces species from Ethiopia

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Abstract - *Tyromyces ethiopicus* Bitew & Ryvarden and *Tyromyces cinereobrunneus* Bitew and Ryvarden are described as new from Ethiopia and compared with similar *Tyromyces* species.

Introduction

In connection with an investigation of the decay of *Juniperus* and *Podocarpus* in Ethiopia by one of us (A.B.) a small number of polypores could not be identified. They were left aside for a year and then re-examined and named except for two *Tyromyces* species. A search in pertinent literature (Gilbertson & Ryvarden 1985-86, Ryvarden & Gilbertson 1993-94, Bondartzew 1971, Ryvarden & Johansen 1980) gave no clue to their identity, and we decided they must represent undescribed species. Since they both were pileate, had a monomitic hyphal system with clamped generative hyphae, no cystidia, basidiospores without reaction in Meltzer's reagent and caused a white rot in the attacked wood, it was obvious that *Tyromyces* was a suitable genus since it includes species with just this combination of characters.

Taxonomy

Tyromyces ethiopicus Bitew and Ryvarden nova sp.
Fructification sessilia, pileus albus, pori facies albus, systema hypharum monomiticum, hyphae generatoriae fibulatae, sporae 3-3.5 x 2 µm.
Holotype: Ethiopia, Arusi province, Munessa forest, 29. June 1998, on dead log of *Podocarpus*, A. Bitew 16A. Herb. O.
Basidiocarp annual, sessile, single or imbricate, semicircular, broadly attached or dimidiate, up to 5 cm wide, 7 cm long and 1 cm thick at the base, soft, watery and sappy when fresh, rigid when dry, taste mild, upper surface white, smooth to slightly rugulose, glabrous, matted with age the upper hyphae agglutinate to a very

thin brownish cuticle, pore surface white to pale cream, pores thin-walled, angular, 5-6 per mm; tubes up to 6 mm deep, concolorous with pore surface; context white and homogenous, chalky when dry, up to 6 mm thick at the base.
Hyphal system monomitic; generative hyphae with clamps, in the trama thin-walled, 2.5 4 µm wide, in the context more thick-walled.
Cystidia or other sterile hymenial elements absent.
Basidia clavate, 4-sterigmate, 12-15 x 4-5 µm, with a basal clamp.
Basidiospores thin-walled, hyaline, ellipsoid to oval, IKI-, 3-3.5 x 2-2.3 µm.
2.5-3 x 2-2.5 µm.
Type of rot. White rot in dead *Podocarpus* sp.
Substrata. Known only from dead *Podocarpus* sp.
Distribution. Known only from the type locality in Ethiopia.
Remarks. This new species is somewhat similar to the American species *T. galactinus* as they have almost identical microscopical characters although the basidiospores in the latter species are slightly smaller and almost subglobose (2.5-3 x 2-2.5 µm). However *T. galactinus* has a strigose to tomentose upper surface in contrast with the glabrous surface of *T. ethiopicus*.

Tyromyces cinerobrunneus Bitew and Ryvarden nova sp.
Fructification sessilia, pileus cinereus, pori facies albus, systema hypharum monomiticum, hyphae generatoriae fibulatae, sporae 3-3.5 x 2 µm.
Holotype: Ethiopia, Arusi province, Munessa forest, 29. June 1998, on dead log of *Podocarpus*, A. Bitew 16B. Herb. O.
Basidiocarp annual, sessile, single or imbricate, semicircular, broadly attached or dimidiate, up to 6 cm wide, 8 cm long and 1 cm thick at the base, soft when fresh, rigid when dry, taste mild, upper surface first greyish with brown shades, smooth, finely concentrically zonate, finely velutinate adpressed with some scattered glabrous zones, later becoming brown from the base and with radial lines, pore surface white to pale cream, pores thin-walled, angular, 4-5 per mm; tubes up to 4 mm deep, pale ochraceous, context white and homogeneous, brittle, up to 6 mm thick at the base.
Hyphal system monomitic; generative hyphae with clamps, thin- to thick-walled, 2.5-4 µmwide.
Cystidia or other sterile hymenial elements absent.
Basidia clavate, 4-sterigmate, 15-18 x 5-7 µm, with a basal clamp.
Basidiospores thin-walled, hyaline, ellipsoid to oval, IKI-, 4-4.5 x 2.3-2.6 µm.
Type of rot. White rot in dead *Podocarpus* sp.
Substrata. Known only from dead *Podocarpus* sp.
Distribution. Known only from the type locality in Ethiopia.
Remarks. This new species is somewhat similar to the American species *T. pseudolacteus* as they have almost identical microscopical characters. However, the latter species has a purely white pileus in contrast to the greyish to brown colours seen in *T. cinereobrunneus*.
Acknowledgements

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12: Trametes africana Ryvarden nov. sp.

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Abstract
Trametes africana is described based on numerous collection of a taxon previously, but wrongly identified as *Fomitella supina* (Sw.:Fr.) Murrill.

Introduction
In Ryvarden & Johansen (1980) *Fomitella supina* (Sw.:Fr.) Murrill was reported from a number of African countries. Later, when the species was observed and collected in nature during many collecting trips in Central and South America, it became obvious that two taxa were involved. There is a detailed description of *F. supina* in Gilbertson & Ryvarden (1986) to which the reader is referred for details.

The reason for the confusion of the two taxa is that their basidiocarps develop a reddish cuticle from the base, have a dense basidiocarp and cylindrical basidiospores. However, their colour is different, being olivaceous in *F. supina*, ochraceous to pale yellowish brown in *T. africana*. The basidiocarps of the latter are also larger and more compound than in the American species.

In connection with studies of African polypores with the aim of producing a mycota of the group in Africa it became necessary to give the African taxon a name. A search in the literature and my own type studies (see list in Ryvarden 1991) gave no result, and thus, the species is described below.

Trametes africana Ryvarden nov. sp.
Ad *Fomitella supina* (Sw.:Fr.) Murrill, sed contextus ochraceus.
Holotype: Ethiopia, Wondo Genet, 12 km SE of Shashemen, 1900m, 8 January 1973, L. Ryvarden 8741 (O).
Basidiocarp perennial, pileate, solitary, more rarely fused to more compound basidiocarps, semicircular, broadly sessile to dimidiate with a tapering base, when young applanate and rather thin, with age becoming triquetrous in section, up to 15 cm long and 10 cm wide, usually 0.5-2 cm thick at the base in applanate specimens, in large triquetrous specimens up to 8 cm thick at the base, rigid to corky when fresh, woody hard when dry, pileus first adpressed velutinate and ochraceous to pale buff, soon becoming glabrous and leathery brown to dirty

brown and then from the base developing a cuticle, first dull brownish to reddish-brown, then becoming dull reddish and finally deep bay or reddish-black, in old and large specimens all these stages can be observed from the margin to the base, often in distinct sulcate zones reflecting distinct stages of growth, in older parts of pileus with a distinct crust which is thinning out towards the margin. In some large African specimens a secondary growth has developed at the base, ochraceous to greyish in colour, when sectioned, the original reddish bay cuticle can be observed as a black line below this secondary outgrowth or context, margin entire rounded to rather sharp, pore surface ochraceous, wood coloured, pale leathery-brown, isabelline or pale umber with age, pores round and entire, 5-7 per mm, in old and sterile specimens even smaller as the pores seem to be partly closed in dry periods, tubes more or less con colorous with pore surface, in young and applanate specimens non-stratified or with two-three layers, each up to 4 mm deep, in large triquetrous specimens seven layers have been counted, context first ochraceous becoming golden-brown and finally almost umber brown, fibrous and dense, often zonate, reflecting stages of age, mostly homogenous, in some specimens and lighter in colour towards the pileus.

Hyphal system trimitic, generative hyphae clamped, hyaline and thin- to slightly thick-walled, 2-3 µm in diameter, slightly wider in the context, often partly collapsed, skeletal hyphae abundant in the whole basidiocarp, golden to pale brown, thick-walled with a distinct lumen, 5- 8 µm in diameter, sometimes with secondary simple septa, binding hyphae light yellow, thick-walled, about 3-4 µm wide, slightly irregularly branched, not abundant.

Cystidia absent.

Basidia clavate 12-15 x 4-6 µm

Basidiospores cylindrical 6, 5-8 x 2.5-3.3 µm, hyaline, thin-walled and IKI-.

Substrata. On angiosperms of all kinds.

Distribution. In Africa observed in Cameroon, Ethiopia, Kenya, Rwanda and Uganda.

Remarks. The species may be recognized by its perennial and woody hard basidiocarps becoming reddish to bay and laccate from the base, and its ochraceous to brownish colours on pore surface and context. The skeletal hyphae are almost hyaline, becoming tinted with age.

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