Neotropical polypores
Part 3

Polyporaceae
Obba-Wrightoporia

L. Ryvarden

Synopsis Fungorum 36

Fungiflora

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The following new combinations are proposed:

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Obba Miettinen & Rajchenberg

Mycol. Progress 11:141, 2012.

Basidiocarps resupinate, annual to biennial, white when fresh drying cream to ochraceous, soft when fresh, drying hard to brittle, hyphal system monomitic, generative hyphae with clamps, coarse crystal rosettes in trama and tube mouths, cystidia none, basidia clavate and tetrasterigmatic, basidiospores subglobose to globose, smooth, thin to slightly thick-walled, often with a large hyaline oil drop, negative in Melzer's reagent. Produces a white rot. One poroid species in tropical America.
Type species: *Obba valdiviana* (Rajchenb.) Miettinen & Rajchenb.
Remarks. *Obba* is similar to *Physisporinus* with globose spores and monomitic hyphal system, but separated by having clamped generative hyphae, these being simple septate in the latter.

Obba rivulosa (Berk. & M. A. Curtis) Miettinen & Rajchenb.,
Mycol. Progress 11:142, 2012. - *Polyporus rivulosus* Berk. & M.A. Curtis, J. Linn. Soc. Bot. 10: 318, 1868. - *Physisporinus rivulosus* (Berk. & M. A. Curtis) Ryvarden, Mycotaxon 20:353, 1984.
Basidiocarps annual, resupinate, usually effused in small patches, up to 3 mm thick, cartilaginous and crisp when fresh, rigid and brittle when dry, taste slightly bitter; margin white; pore surface white, drying cream to pale ochraceous brown, pores angular, 5-7 per mm; tube layer becoming resinous, dense and partly translucent, up to 3 mm thick, subiculum up to 1 mm thick, white when fresh, drying ochraceous to brown.
Hyphal system monomitic; tramal generative hyphae with clamps, irregularly branched, hyaline, 3-6 μm in diam; those of the subiculum similar, often agglutinated and difficult to separate
for microscopic study, crystal rosettes or rhomboidal clusters always present on hyphae, especially in the trama and the pore mouths.
Cystidia absent, but fusoid cystidiols present among the basidia, hyaline, not encrusted, 15-20 x 5-8 μm.
Basidia 15-25 x 6-8 μm, clavate, tetrasterigmatic with a basal clamp.
Basidiospores 4.5-5.5 x 3.7-4.5 μm, subglobose to oval, hyaline, smooth, IKI-.
Substrata. On dead hard woods of many kinds in the temperate zone. A high proportion of the collections are from charred wood, but the species is not restricted to this substrate.
Distribution. A rare species known from Cuba (type locality), USA, Argentina, Chile besides Europe and Australia.
Remarks. The species is characterized by the subglobose spores, generative hyphae with clamps and lack of cystidia.

Oligoporus Bref.,

Untersuch. Gesamtgebiet. Mykol. 8:114, 1888.

Basidiocarps annual, resupinate to pileate, fleshy when fresh, brittle to hard when dry, mostly white to light coloured, sometimes becoming darker by drying; hyphal system monomitic, generative hyphae with clamps, thin- to thick-walled; cystidia mostly absent, present in a few species; basidia 4-sterigmate and with a basal clamp; basidiospores thin-walled, smooth, hyaline, allantoid to ellipsoid, negative in Melzer's reagent; chlamydospores absent or present; causes a brown rot, mostly in conifers, more rarely in hardwoods.
Type species: *Oligoporus farinosus* Bref., a synonym of *Polyporus rennyii* (Berk. & Broome) Kotl.
Remarks. Previously many of the species included in *Oligoporus* were placed in *Tyromyces.* However, the species of the latter genus cause a white rot, and the genus is restricted to species with this type of rot.

Key to species

1. Pileus bluish to grey, spores amyloid.....**O. caesius**
1. Pileus white to yellow, spores non-amyloid .....**O. caesioflavus**

Oligoporus caesioflavus (Pat.) Baltazar, Michels & Log.-Leite,
Mycotaxon 104: 2010, 2008. - *Polyporus caesio-flavus* Pat.) Bull. Soc. Mycol. Fr. 8: 114, 1892.
Basidiocarps solitary to imbricate, up to 5 x 4 x 0.5 cm, convex, dimidiate, soft throughout, not changing on bruising or drying, pileus white to yellow with large light brown areas, pubescent, azonate, smooth, with rounded margin, pore surface dull, grayish-blue, pores angular, 8-10 per mm tubes up to 1 mm long, bluish in contrast with white context, up to 7 mm thick.
Hyphal system monomitic, generative hyphae more or less thick-walled, with abundant clamp connections and some rare simple septa, 3-6 µm in diameter.
Cystidia and other sterile hymenial elements absent.
Basidia 10-13 x 4-5 µm; clavate.
Basidiospores 3-4.5 x 1-2 µm, allantoid, smooth and without reaction in Melzers reagent.
Substrate. Dead hard wood.
Distribution: Known from Brazil, Costa Rica and Ecuador.
Remarks. The species comes close to *O. caesius*, but is separated by non-amyloid spores and a white to yellowish pileus (reflected in the epithet) contrasting the bluish colours seen in *O. caesius*.

Oligoporus caesius (Schrad.:Fr.) Gilb. & Ryvarden,
Mycotaxon 22:365, 1985. - *Boletus caesius* Schrad., Spic. Flora Germ., p. 167, 1794. - *Polyporus caesius* Schrad.:Fr., Syst. Mycol. 1:360, 1821.

Basidiocarps annual, sessile to effused-reflexed, usually solitary, dimidiate to narrow, up to 5 x 6 x 1.5 cm; upper surface greyish to bluish, often in spots or streaks, sometimes bruising intensely blue, finely tomentose to strigose, sometimes glabrous; pore surface white, pale grey to bluish, becoming bluish when bruised, dull, the pores angular, 3-6 per mm, with thin dissepiments, these becoming lacerate; context up to 1 cm thick, white to bluish, soft; tube layer white to gray, soft, fragile when dry, up to 6 mm thick.
Hyphal system monomitic; contextual hyphae thin- to thick-walled, hyaline, often branched, with abundant clamps, 2.5-7 µm in diam; gloeopleurous hyphae also present, staining brightly in phloxine.
Cystidia and other sterile hymenial elements absent.
Basidia 16-25 x 4.5-7 µm, clavate, 4-sterigmate, weakly amyloid when fresh.
Basidiospores 4.5-6 x 1.5-2 µm; cylindrical to allantoid, hyaline, smooth, weakly amyloid, most easily seen in masses, spore print bluish.
Substrata. Usually on dead conifers, but occurs also on hardwoods.
Distribution. Cosmopolitan, but rare in the tropical zone.
Remarks. *O. caesius* can be recognized in the field by the bluish tints on the pileus and pore surface besides microscopically by the weakly amyloid spores.

Oxyporus (Bourd. & Galzin) Donk**,**

Med. Bot. Mus. Univ. Utrecht 9:202, 1933. - *Coriolus* sect. *Oxyporus* Bourd. & Galzin. Hymen. Fr. p. 560, 1928.
Basidiocarps annual to perennial, resupinate to pileate, in the latter case broadly attached and fibrous to woody; pileus white to deep cream, velutinate and often covered with mosses; pore surface white to light yellowish, pores mostly small and isodiametric, rarely large and angular; tube layer single or distinctly stratified, then with layers of context between the tube layers; context white to cream; hyphal system monomitic; generative hyphae thin- to thick-walled, sparingly branched, simple septate; apically encrusted hymenial cystidia abundantly present in most species, difficult to demonstrate in others; basidiospores globose to broadly ellipsoid, thin- to thick-walled, smooth, hyaline, negative in Melzer's reagent; on both hardwoods and conifers, causing a white rot. Cosmopolitan genus.
Type species: *Polyporus connatus* Weinm. (= *P. populinus* Schumach.: Fr.) .
Remarks. The genus may be related to *Rigidoporus* Murrill with which it shares the monomitic hyphal system with simple-septate hyphae, the more or less globose spores and presence of cystidia (although not in all *Rigidoporus* species). However, the type species of the latter genus has a red coloured basidiocarp with mamillate cystidia (cystidiols?). Also, the cystidia of *Rigidoporus* arise as tramal cystidia from sklerified generative hyphae while those of *Oxyporus* are mostly true hymenial cystidia.
Physisporinus Karst. has the same hyphal system and spores as *Oxyporus* but lacks the cystidia and has much softer, ephemeral basidiocarps with thin-walled hyphae, thus, it is kept as a separate genus.

NB. Since the basidiospores for all species in the genus are hyaline, smooth and negative in Melzers reagent, this information is not repeated for each species. All of them are found

on hard woods, unless indicated otherwise, thus this information is not repeated for each species.

Key to species

1. Basidiocarps pileate **2**
1. Basidiocarps resupinate **5**

2. Basidiocarps annual, thin, pliable, tubes not stratified **3**
2. Basidiocarps perennial, dense and with stratified tubes **4**

3. Ventricose cystidia present, spores 3.5-4.5 x 3.0-4.5 µm ..... **O. mollis**
3. Cystidia absent, spores 5-6 x 4.5-5 µm ..... **O. acystidiatus**

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

5. Cystidia heavily encrusted **6**
5. Cystidia with a small crown of crystals **9**

6. Pores dentate and deeply split, 1-3 per mm **7**
6. Pores entire and angular, 5-6 per mm **8**

7. Basidiocarps white to ochraceous ..... **O. pellicula**
7. Basidiocarps olivaceous brown to deep ochraceous ..... **O. brunneus**

8. Basidiocarps cinnamon, basidiospores cylindrical to oblong ellipsoid, 4-5 x 1.5-2 (2.5) µm ..... **O. neotropicus**
8. Basidiocarps ochraceous, basidiospores globose, 5-6 µm wide ..... **O. andinus**

9. Spores globose, pores 7-9 per mm ..... **O. fragilis**
9. Spores ellipsoid, pores 1-6 per mm **10**

10. Spores 5-7 µm long, pores usually 1-3 per mm ..... **O. latemarginatus**
10. Spores 3-4.5 µm long, pores 2-6 per mm **11**

11. pores round 4-6 per mm ..... **O. obducens**
11. Pores angular, 2-3 per mm ..... **O. hexaporoides**

Oxyporus acystidiatus T.A. Hofm. & Ryvarden,
Synopsis Fung. 30:28, 2013.
Basidiocarps annual, effused reflexed and imbricate, individual pilei 3 cm long and projecting up to 1 cm from the substrate and to 1 cm thick at the base, soft and fragile, upper surface adpressed velutinate, in parts finely radially striate, white, azonate margin

on effused parts white, up to 4 mm wide; pore surface white, pores circular to angular, 5-7 per mm on horizontal parts of the basidiocarps, 2-4 per mm on sloping parts and there irregular with dentate dissepiments and smaller pores within larger ones; tube layer concolorous with pore surface up to 2 mm deep, context white, cottony and dense, up to 6 mm thick at base, effused sterile part between the individual pilei white, glabrous and papery smooth, no distinct taste in dry condition.
Hyphal system monomitic; generative hyphae thin-walled, smooth, simple septate and 2-5 µm wide.
Cystidia or other sterile elements not seen.
Basidia 15-18 x 5-7 µm, clavate.
Basidiospores (4.5-) 5-6 x 4.5-5 µm globose to subglobose.
Substrata. The type was collected on a dead log of *Cecropia insignis*, but also spread over the adjacent leaves and soil.
Distribution. Known only from the type locality in Panama, but will certainly shown to have a wider distribution when more collecting is preformed in Central America.
Remarks. The dense imbricate white basidiocarps, lack of cystidia and the globose to subglobose spores characterize this species. *O. mollis* is a similar white, pileate species, but it has smooth ventricose cystidia in the hymenium besides that the spores are smaller, i.e. 3.5-4.5 x 3.0-4.5 µm.

Oxyporus andinus Iturriaga & Ryvarden,
Synopsis Fung. 27:86, 2010.
Basidiocarps annual, resupinate, effused, up to 3 cm in the holotype, soft when fresh, fragile when dry, pore surface deep ochraceous, pores angular, 5-6 per mm, tubes concolorous with pore surface, up to 1.5 mm deep, context dense, cream coloured, about 100 µm thick.
Hyphal system monomitic; generative hyphae 3-6 µm wide, simple-septate, thin- to thick-walled, with occasional branching,
Cystidia 20-55 µm from septum to apex, abundant, clavate, arising in the subhymenium and bending into the hymenium, thick-walled and with an apical crown of coarse crystals, also present as apically encrusted hyphal ends in the dissepiments.
Basidia 15-22 x 4-6 µm, clavate, with four sterigmata.
Basidiospores 5-6 µm globose, thin-walled.
Substrate. On dead hardwood and on an old, dead polypore.
Distribution. Known only from the type locality in Venezuela.
Remarks. The species is characterised by the angular pores and large globose spores.

Oxyporus brunneus Iturriaga & Ryvarden,
Synopsis Fung. 27:86, 2010.
Basidiocarps annual, resupinate, effused, up to 5 x 3 cm in the holotype, soft when fresh, fragile when dry, pore surface olivaceous brown to deep ochraceous, pores angular, irregular, almost meruloid, 2-3 per mm, pore mouths partly lacerate to dentate, tubes concolorous with pore surface, up to 1 mm deep, context dense, ochraceous, up to 300 µm thick.

Hyphal system monomitic; generative hyphae 3-8 µm wide, simple-septate, thin- to slightly thick-walled, with occasional branching.
Cystidia 20-55 µm from septum to apex, abundant, clavate, arising in the subhymenium and bending into the hymenium, thick-walled and with an apical crown of coarse crystals, also present as apically encrusted cystidia embedded in the trama and partly hyphal ends in the dissepiments.
Basidia 18-25 x 6-8 µm, clavate, with four sterigmata.
Basidiospores 5.5-6.5 µm wide, globose.
Distribution. Known only from the type locality.
Remarks. The species is characterised by the brownish colours, irregular, large and angular pores and large globose spores.

Oxyporus cinnamomeus Núñez & Ryvarden,
Fungal Divers. 3:114, 1999.
Basidiocarp annual to perennial, sessile to effused-reflexed, commonly imbricate, individual pilei up to 2 x 4 x 0.5 cm; pileus surface deep cinnamon, dull, finely adpressed velvety and soft to touch, azonate, pores angular, 6-8 per mm, pore surface, tubes and context concolorous with the pileus surface, tubes stratified, each layer up to 1 mm deep, context up to 3 mm thick at the base, homogeneous.
Hyphal system monomitic; generative hyphae simple-septate, hyaline to faintly brown, thin- to thick-walled, 2-5 µm wide.
Cystidia abundant, arising in the subhymenium and bending into the hymenium, thick-walled, cylindrical to slightly widened apically and coarsely encrusted in the upper part, 30-60 x 5-9 µm measured from the septum from which they arise.
Basidia 15-22 x 4-6 µm, ovoid to broadly clavate, 4-sterigmate, simple-septate at the base.
Basidiospores 4-5 x 3.8-4.5 µm subglobose.
Distribution. Known from Brazil, but was originally described from Japan.
Remarks. The species is clearly related to *Oxyporus populinus* (Fr.) Donk, which however has almost white basidiocarps with numerous strata in the tubes and slightly smaller basidiospores, i.e. 3.5-4.5 x 2.5-4 µm.

Oxyporus fragilis Læssøe & Ryvarden,
Synopsis Fung. 27:50, 2010.
Basidiocarps annual, resupinate, effused, up to 3 cm wide in the holotype, soft when fresh, fragile when dry, pore surface whitish, discoloured when fresh, greyish brown when dry, pores round to angular, invisible to the naked eye, 7-9 per mm, tubes concolorous with pore surface, up to 1 mm deep, context up to 50 µm thick, dense, ochraceous, hardly visible to the naked eye.
Hyphal system monomitic; generative hyphae 3-8 µm wide, simple-septate, thin- to thick-walled, with occasional branching.
Cystidia 12-20 x 4-7 µm, abundant, clavate, arising in the subhymenium, thick-walled, with an apical crown of coarse crystals, but also as apically encrusted hyphal ends in the dissepiments.
Basidia 10-12 x 6-8 µm, clavate, with four sterigmata.

Basidiospores 4-5 µm, globose.
Distribution. Known only from the type locality in Ecuador.
Remarks. The species is characterised by the tiny pores and the globose spores. With more comprehensive collecting in the Amazonas area, will probably be shown to be widespread in the area.

Oxyporus hexaporoides Iturr. & Ryvarden,
Synopsis Fung. 29:74, 2011.
Basidiocarps annual, resupinate, effused, up to 4 x3 cm in the holotype, soft when fresh, fragile when dry, pore surface white, , pores angular to hexagonal, 2-3 per mm, shallow, thin walled, tubes concolorous with pore surface, up to 2 mm deep, context almost absent, whitish, about 200 µm thick.
Hyphal system monomitic; generative hyphae 3-7 µm wide, simple-septate, thin- to thick-walled, with occasional branching.
Cystidia 15-25 µm from septum to apex, abundant, clavate, present in the subhymenium, thin-to slightly thick walled and with an apical crown of coarse crystals.
Basidia 12-18 x 4-6 µm, clavate, with four sterigmata.
Basidiospores 3-4.5 x 2.2-2.5 µm wide, broadly ellipsoid.
Distribution. Known only from the type locality in Venezuela.
Remarks. The species is characterised by the fairly large angular pores and the broadly ellipsoid basidiospores.

Oxyporus lacerus Ryvarden,
Synopsis Fung. 23:45, 2007.
Basidiocarps annual, resupinate, effused up to 8 cm in the holotype, soft when fresh, fragile when dry, pore surface white, pores angular to irregular, strongly split, lacerate and semihydnoid in parts, in regular parts with 1-2 pores per mm, tubes white, up to 3 mm deep, context white and very thin.
Hyphal system monomitic; generative hyphae simple-septate, thin- to thick-walled, with occasional branching, 2-6 µm wide.
Cystidia abundant, clavate, arising in the subhymenium, thick-walled and with an apical crown of coarse crystals, 12-20 x 4-7 µm.
Basidia clavate, 10-15 x 4-5 µm, with four sterigmata.
Basidiospores oblong ellipsoid, hyaline, thin-walled and negative in melzers reagent, 3-4 x 2-2.5 µm.
Distribution. Known only from the type locality in Cayo district, Belize.
Remarks. The lacerate to split hymenophore make this a characteristic species. Superficially it looks like *O. pellicula*, but has far smaller spores than that species.

Oxyporus latemarginatus (Dur. & Mont. ex Mont.) Donk,
Persoonia 4:342. 1966. - *Polyporus latemarginatus* Dur. & Mont., Syll. Crypt. p. 163. 1856.
Basidiocarps annual, resupinate, becoming widely effused, rather soft when fresh, becoming firm and corky or brittle when dried, readily separable; margin usually sterile, white, fimbriate, up to 1 mm wide; pore surface white to ivory when fresh, drying white

to cream coloured, the pores angular, 1-3 per mm, with dissepiments that quickly become thin and lacerate; context white to ivory, azonate, soft-fibrous, up to 1 mm thick; tube layer concolorous and continuous with the context, often drying brittle, up to 7 mm thick; taste mild.
Hyphal system monomitic; subicular hyphae hyaline in KOH, thin-walled, often branched, simple-septate, 3-8 µm in diam; tramal hyphae similar.
Cystidia rare to frequent, in some specimens apparently absent, narrowly clavate to cylindrical, apically encrusted, 20-28 x 4.5-6 µm, simple-septate at the base.
Basidia 16-20 x 5-7 µm; clavate, 4-sterigmate.
Basidiospores 5.5-7 x 3-4 µm, narrowly ellipsoid.
Distribution. Widely distributed in America. Circumglobal species.
Remarks. The clavate to cylindrical cystidia, although sometimes difficult to find, characterize this species.

Oxyporus mollis Gibertoni & Ryvarden,
Nova Hedwigia 94: 176, 2011.
Basidiocarps annual, resupinate to widely effused-reflexed to pileate, dimidiate, pileus glabrous, sulcate in zones, cream-yellow , hymenial surface yellowish, pores round, 5-6/ mm, context homogeneous, concolorous with the abhymenial surface.
Hyphal structure monomitic, generative hyphae simple-septate, thin-walled to slightly thick-walled, 2-5 µm diam.
Cystidia 15- 24 x 5-8 µm, rare and scattered, smooth and ventricose.
Basidia clavate, 10-20 x 4-5 µm.
Basidiospores, 3.5-4.5 x 3-4.5 µm, globose to subglobose.
Substrate. On unidentified living seedlings and litter
Distribution: Known only from the type locality in Brazil.
Remarks. The soft pliable and pileate basidiocarps characterize the species. The cystidia are difficult to find in the type and more collections are desirable to verify whether this is distinct character.

Oxyporus neotropicus Ryvarden,
Synopsis Fung. 18:65, 2004.
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 4-5 x 1.5-2 (2.) µm, cylindrical to oblong ellipsoid.
Distribution. Known only from the type locality.

Remarks. The species looks like any brown resupinate polypore until a microscopical examination reveal the abundant and very conspicuous cystidia and the simple septate hyphae indicating *Oxyporus* as the proper genus.

Oxyporus obducens (Pers.) Donk,
Med. Bot. Mus. Univ. Utrecht 9:202, 1933. - *Polyporus obducens* Pers., Mycol. Europ. 2:104, 1825.
Basidiocarps annual, resupinate, adnate, effused, but usually of rather small dimensions, up to 6 mm thick, soft when fresh, hard when dry; margin white and finely floccose; pore surface pale cream to pale straw coloured, slightly glancing when turned in incident light; pores angular 4-6 per mm, some larger and up to 2 per mm, due to a slight contraction in dry condition; dissepiments thin; context white, thin; tube layer concolorous, up to 4 mm thick.
Imperfect stage absent or present, pulverulent, pale yellow, under or beside the basidiocarp, chlamydospores smooth, thick-walled, ellipsoid to globose, 7-15 x 6-10 µm, negative in Melzer's reagent.
Hyphal system monomitic; generative hyphae hyaline, thin- to thick-walled, simple-septate, 2.5-4.5 µm wide.
Cystidia numerous in most collections, clavate to slightly ventricose, thick-walled, either with an apical crown of crystals or coarsely encrusted in the upper half part, 15-30 x 5-12 µm.
Basidia 10-15 x 4-6 µm, clavate, 4-sterigmate.
Basidiospores 3-4.5 x 2.5-3.5 µm broadly ellipsoid to subglobose.
Substrata. Dead hardwoods.
Remarks. This species can be confused with *O. latemarginatus*, which however, has longer spores. In North America recorded as *O. similis* (Bres.) Ryvarden.

Oxyporus pellicula (Jungh.) Ryvarden,
Prelim. Polypore Fl. East Africa p. 455, 1980. - *Polyporus pellicula* Jungh., Verh. Batav. Genootsch. Kunst. Wetensch. 17:44, 1838.
Basidiocarps resupinate, annual, effused, up to 3 mm thick, somewhat coriaceous when fresh, brittle and hard when dry, adnate, margin narrow, white or pale ochraceous or brown, finely felted, pore surface cream to wood-coloured, pores angular to slightly split or incised, 2-3 per mm, on sloping substrates often more split and elongated, in older specimens almost semi-irpicoid and similar to those of *Schizopora paradoxa*, tubes up to 2 mm deep, tough; context white to pale cream and dense, up to 1 mm thick.
Hyphal system monomitic, generative hyphae with simple septa, thin-walled in subhymenium, otherwise distinctly thick-walled, 3-6 µm wide, often branched in acute angles.
Cystidia abundantly present, encrusted, clavate, elongated and club like with angular crystals, up to 100 µm long from apex to the septum from which they arise 3-7 µm wide, present throughout the basidiocarp.
Basidia 12-20 x 5-7 µm, clavate, 4-sterigmate.
Basidiospores 5-8 x 3-5 µm, ellipsoid.
Distribution. Tropical species, in America known from Brazil.

Remarks. The species is easily recognized because of the clavate cystidia and the large spores. *Irpex lacteus* has similar cystidia, but has cylindrical spores and skeletal hyphae.

Oxyporus populinus (Schumach.:Fr.) Donk,
Med. Bot. Mus. Univ. Utrecht 9:204, 1933. - *Polyporus populinus* Schumach.:Fr., Syst. Mycol. 1:367, 1821. - *Boletus populinus* Schumach., Enum. Pl. Saell. II, p. 384, 1803.
Basidiocarps perennial to annual, sessile, effused-reflexed to strictly resupinate; pilei often imbricate and laterally fused, up to 5 x 12 x 5 cm; upper surface cream coloured to buff or darkening with age, finely tomentose to glabrous, often covered with mosses at the base; pore surface cream coloured to buff, the pores circular to angular, 5-7 per mm; context cream coloured to tawny, corky, faintly zonate to azonate, up to 2 cm thick; tube layers concolorous, distinctly stratified in perennial basidiocarps, separated by a thin layer of context tissue, up to 5 cm deep.
Hyphal system monomitic; contextual hyphae simple-septate, hyaline, thin- to thick-walled, 2.5-4.5 µm in diam; tramal hyphae similar, mostly thin-walled.
Cystidia abundant, thin-walled, cylindrical to capitate, 20-35 x 3-4.5 µm, capitate to entirely encrusted, incrustation dissolving rapidly in KOH, encrusted portion 6-12 µm in diam.
Basidia 8-14 x 5-5.5 µm, ovoid to broadly clavate, 4-sterigmate.
Basidiospores 3.5-4.5 x 2.5-4 µm, subglobose.
Distribution. Circumglobal species, common in the temperate zone of America, rare in tropical America, but specimens have been examined from Meridia in the Andes region of Venezuela.
Remarks. *Oxyporus populinus* is well differentiated from the other species in the genus by its perennial, sessile white to pale ochre basidiocarps with the tube layers separated by thin layers of context.

Pachykytospora Kotl. & Pouzar,

Ceska Mykol. 17:27, 1963.

Basidiocarps perennial to annual, resupinate, adnate; pore surface white to wood coloured, pores medium to small, frequently with a pinkish tint; hyphal system di-trimitic, generative hyphae with clamps, hyaline binding and skeletal hyphae present, very weakly dextrinoid in mass; cystidia none; spores oblong-ellipsoid, ornamented with elongated rounded ridges or echinulae, thick-walled, hyaline and IKI-; on hardwoods or conifers, causing white rots. Small cosmopolitan genus with five species.
Type species: *Pachykytospora tuberculosa* (Fr.) Kotl. & Pouzar.
Remarks. The genus is characterized by the striate basidiospores, a rare characteristic in the Polyporaceae.

Key to neotropical species

1. Basidiocarps pileate ..... **P. pileatea**
1. Basidiocarps resupinate **2**

2. Spores shorter than 8 µm ..... **P. brasilense**
2. Spores longer than 8 µm **3**

1. Pores 4-5 per mm; spores 8.5-12 x 4-6 µm ..... **P. alabamae**
1. Pores 1-4 per mm; spores 10-15 x 5-7.5 µm ..... **P. papyracea**

Pachykytospora alabamae (Berk. et Cke.) Ryvarden,
Norw. J. Bot. 19:233. 1972. - *Polyporus alabamae* Berk. & Cke., Grevillea 6:130. 1878.
Basidiocarps annual, resupinate, adherent, effused up to 8 cm; pore surface ochraceous buff, the pores circular to angular, 4-6 per mm; dissepiments thin, entire; margin pale buff, soft, tomentose, sterile up to 2 cm, with cupulate developing tubes; tube layer pale buff, up to 1 mm thick; context thin, concolorous with tubes.
Hyphal system dimitic; subicular generative hyphae inconspicuous, hyaline, thin-walled, negative in Melzer's reagent, with clamps, 2-2.5 µm in diam; subicular skeletal hyphae thick-walled, nonseptate, slender, with occasional branching, 1.5-3.5 µm in diam, weakly dextrinoid in Melzer's reagent, appearing strongly dextrinoid in mass.
Cystidia and other sterile hymenial elements absent.
Basidia 15-20 x 8-11 µm, broadly clavate.
Basidiospores 9.5-12.5 x 4-5.5 µm, cylindrical to cylindrical-ellipsoid, hyaline, minutely echinulate with echinulae tending to be in longitudinal rows, giving the spores a striate appearance, IKI-.
Substrata. On dead hard wood, often on thin branches still attached to the tree.
Distribution. Tropical and subtropical species.
Remarks. *Pachykytospora alabamae* has smaller pores and spores than *P. papyracea*, a similar species that ranges further north.

Pachykytospora brasilense Georgea & Ryvarden, In sched.
Basidiocarps annual, resupinate, adherent, effused up to 4 cm; pore surface ochraceous buff, the pores 1-3 per mm, dissepiments thin, entire; margin pale ochraceous tube layer pale buff, up to 1 mm thick; context thin, concolorous with tubes.
Hyphal system dimitic; subicular generative hyphae inconspicuous, hyaline, thin-walled, negative in Melzer's reagent, with clamps, 2-2.5 µm in diam; subicular skeletal hyphae thick-walled, nonseptate, slender, with occasional branching, 1.5-2.5 µm in diam, weakly dextrinoid in Melzer's reagent.
Cystidia and other sterile hymenial elements absent.
Basidia 12-15 x 4-6 µm, clavate, tetrasterigmatic with a basal clamp.
Basidiospores 6-8 x 4-5 µm, oblong-ellipsoid, hyaline, distinctly echinulate, IKI-.
Distribution. Known only from the type locality in Brazil.
Remarks. This species has approximately the same spore size as in the African species *P. nanospora* David and Rajchenb., which however has much smaller pores, i.e. 7-8 per mm. It was described from Gabon in Africa. The previously known resupinate species from tropical America, i.e. *P. alabamae* and *P. papyracea* do both have longer spores, i.e. 8.5-15 µm long.

Pachykytospora papyracea (Schw.) Ryvarden,
Norw. J. Botany 19:233, 1972. - *Boletus papyracea* Schw., Natuf. Ges. Leipzig Schrift. 1:99, 1822.
Basidiocarps resupinate, annual or reviving, adherent, effused up to 10 cm; pore surface cream to pale straw-coloured, often with a slight pink tint, pores round to slightly angular, 2-4 per mm, dissepiments thin to thick and entire; margin narrow and white; tubes up to 3 mm deep, pale buff to wood-coloured; context thin and concolorous with tubes.
Hyphal system di- to trimitic; generative hyphae hyaline with clamps, thin-walled, difficult to observe, 2-3 µm in diam; skeletal hyphae thick-walled to solid, hyaline to pale yellow, slightly dextrinoid, 3-4 µm wide; binding hyphae indistinct with short side-branches, twisted and interwoven and tapering, 2-4 µm wide.
Cystidia and other sterile hymenial elements absent.
Basidia 30-40 x 10-13 µm, broadly clavate with a narrow base.
Basidiospores 10-16 x 6-7, 5 µm, ellipsoid to cylindrical-ellipsoid, hyaline, finely ornamented with echinulae tending to be in rows, giving the spores a striate appearance, IKI-,
Distribution. From southern United States to Argentine, also known from Africa.
Remarks. *P. papyracea* has larger spores and pores than *P. alabamae* which otherwise is rather similar.

Pachykytospora pileata Georgea & Ryvarden, in sched.
Basidiocarps annual, pileate up to 4 cm long, 1.5 cm wide and 1 cm thick at the base and triangular in section, pileus sulcate, tuberculate to tufted with erect agglutinate hyphae, reddish brown at the base, cinnamon to ochraceous at the margin, pore surface ochraceous buff, the pores round, 3-4 per mm, tube layer pale cinnamon brown, up to 8 mm thick; context thin, slightly paler than the tubes.

Hyphal system dimitic; generative hyphae inconspicuous, hyaline, thin-walled, with clamps, 2-3 µm wide; skeletal hyphae thin to thick walled, 2-3 µm wide, distinctly dextrinoid in Melzer's reagent, especially in masses..
Cystidia and other sterile hymenial elements absent.
Basidia 14-24 x 5-7 µm, clavate, tetrasterigmatic with a basal clamp.
Basidiospores 9-10 x 4-5 µm, cylindrical, finely ornamented (observe in Melzers reagent) hyaline, IKI-.
Distribution. Known only from the type locality in Brazil.
Remarks. This is a remarkable species being the first one in the genus with a distinct pileate basidiocarp. The spores are not so prominently ornamented as seen in the resupinate representatives of the genus. More collections are most welcome to achieve a more comprehensive view of the variation in this interesting and distinct species.

Panellus P. Karst.,

Bidrag til Känned. Finlands Natur och Folk 32:96, 1879. **–** *Dictyopanus* Pat., Essai taxonomique p. 137, 1900.
Basidiocarps annual, pileate, hymenophore lamellate to poroid, hyphal system monomitic, smooth cystidia present, achantophysoid cells present along the dissepiments (*Mycena* type), basidiospores smooth, amyloid, on dead wood, worldwide distribution.
Type species : *Agaricus stipticus* Bull. :Fr.
Remarks. The genus is characterized by pileate basidiocarps which in most species are lamellate. It is related to *Mycena* by its achantophysoid cells along the dissepiments or pore mouths. One poroid species in tropical America.

Panellus pusillus (Pers. ex Lév.) Burdsall and Miller**,**
Beiheft zur Nova Hedwigia. 51:85, 1975. - *Gloeoporus pusillus* Pers. ex Lév., Ann. Sci. Nat. Ser.3, 2: 195. 1844. - *Polyporus rhipidium* Berk., Hook., London J. Bot., 6: 319. 1847. - *Polyporus subpulverulentus* Berk. et M. A. Curt., J. Linn. Soc. Bot., 10; 306. 1869. - *Polyporus diminutus* Mass., J. Bot., 34: 153. 1896.
Basidiocarps reniform to semicircular with short contracted stipe, convex to planate, nearly white to pale tan when fresh, slightly darker when dry, up to 3 cm wide and long, pileus smooth, pubescent to velvety, azonate, margin concolorous, nearly smooth, pores concolorous with pileus, pore surface irregular with some elongated radially pores, 4-5/ mm tangentially 2-3 /mm radially, sometimes becoming sublamellate, luminescent when fresh, context white, pale cream when dry.
Hyphal system monomitic, generative hyphae with clamps, 3- 10 µm wide with irregularly thickened walls (walls up to 5. µm thick) frequently appearing eroded on surface, smooth and non amyloid
Cystidia 20-35 × 3-4 µm, lacking or present only near the pore edge, cylindrical to lanceolate, hyaline, thin-walled, smooth, clamped at base, protruding up to 1/2 of total length, acanthophysoid cells or cystidia present along the dissepiments, some with reddish-brown crusted granules, pileocystidia present, imbedded in cuticle, 5-6.5 µm diam, cylindrical, flexuous, thin-walled, hyaline, with refractive content.

Basidiospores 4-5.5 × 2-3 µm, ovoid to broadly ovoid, adaxially flattened, hyaline, thin-walled, smooth, amyloid in Melzer's reagent.
Basidia 12-20 × 4-5 µm, clavate, clamped at base, tetrasterigmatic.
Substrate. Hard woods of all kinds.
Distribution. Pantropical and locally common, in America known from Florida and southwards to Argentina.
Remarks. The small basidiocarps with elongated pores, the granular dissepiments (lens) and the amyloid spores, characterize this species.

Perenniporia Murrill,

Mycologia 34: 595, 1942.
Basidiocarps mostly perennial, rarely annual, resupinate to pileate; pileus smooth, ochraceous to blackish by age; pore surface white to cream, pores small to irregular; context white, ochraceous to clay or greyish, often woody hard; hyphal system dimitic (trimitic), generative hyphae thin-walled, hyaline, and with clamps, often difficult to observe; skeletal hyphae dominating in the basidiocarps, solid to thick-walled, unbranched to moderately branched, non-dextrinoid to strongly dextrinoid; cystidia rare, basidiospores thin- to thick-walled, globose to ellipsoid, drop shaped to truncate, hyaline, non-dextrinoid to strongly dextrinoid, often variable within the same basidiocarp. On dead and living hardwoods and conifers causing a white rot. Large cosmopolitan genus.
Type species: *Polyporus medulla-panis* Jacq.:Fr.
Remarks. The genus is above all characterized by the ellipsoid to distinctly truncate spores, usually thick-walled and with a variable dextrinoid reaction combined with a di- to trimitic hyphal system where the vegetative hyphae are dextrinoid in a variable degree. Since all species cause a white rot, this information is not repeated in the species descriptions.

Key to species

1. Basidiocarps pileate ..... **Key A**
1. Basidiocarps resupinate ..... **Key B**

Key A
Basidiocarps pileate

1. Basidiospores longer than 10 µm **2**
1. Basidiospores shorter than 9 µm **3**

2. Basidiospores 13-16 µm long ..... **P. ochroleuca**
2. Basidiospores 10.3-12.5 µm long ..... **P. detrita**

3. Basidiocarp laterally stipitate to pendant **5**
3 Basidiocarp slightly contracted basally, sessile to effused reflexed **4**

4. Basidiocarps laterally stipitate, basidiospores ellipsoid 5-6 x 3-4 µm ..... **P. stipitata**
4. Basidiocarps pendant with dorsally attached stipe, basidiospores subglobose 4.7-6 x 4.4-5 µm ..... **P. pendula**

5. Basidiospores longer than 5 µm **6**
5. Basidiospores shorter than 5 µm, species with globose spores belong here..... **9**

6. Basidiocarps annual, small, effused reflexed, pileus rarely above 1 cm wide, upper surface white to ochraceous ..... **P. tepeitensis**
6. Basidiocarps perennial, 5-15 cm wide, dense and hard, upper surface dirty whitish, reddish to black from the base **7**

7. Spores pip shaped, 5-9 x 3-6 µm, cystidia variably present, chlamydospores absent from trama and context ..... **P. martia**
7. Spores globose to truncate, 7-9 x 4-5.5 µm, cystidia absent **8**

8.Pileus ochraceous, reddish from the base, pore surface reddish, spores distinctly truncate and non-dextrinoid, chlamydospores absent ..... **P. ganodermoides**
8. Pileus cream becoming brownish with age, pore surface greyish cream, spores ellipsoid and dextrinoid, strongly dextrinoid chlamydospores usually present in context and trama . ..... **P. sprucei**

9. Spores 3-4 µm in diam ..... **P. neofulva**
9. Spores 4-6 µm in diam **10**

10. Pileus first velutinate, ochraceous or brown, species with cuticle belong here **11**
10. Pileus glabrous, white to pale tan or pale brown from the base without cuticle, pore surface white to cream, skeletal hyphae non-dextrinoid ..... **P. micropora**

11. Context duplex with dark line between upper tomentum and lower dense part, spores 5-6 µm in diameter ..... **P. duplexa**
11. Context homogenous without black line, spores less than 5 µm in diameter **12**

12. Pileus brown, first velutinate, then glabrous from base, strongly sulcate in narrow zones, basidiocarps light of weight, pore surface bluish ashy in actively growing specimens, later pale brown ..... **P. inflexibilis**
12. Pileus first ochraceous and finely velutinate, later glabrous and with a dark brown to almost black cuticle from the base, pores surface cream to pale brown, never with bluish tints **13**

13. Pores regular 7-8 per mm, margin sharp, skeletal hyphae 2.5-4.0 µm wide .... **P. contraria**
13. Pores irregular, 4-5 per mm, often with a few fused to irregular cavities, margin rounded, skeletal hyphae 4.0-7-0 µm wide ..... **P. subannosa**

Key B

Basidiocarps resupinate

1. Pores surface and/or tube layers dark brown, vegetative hyphae distinctly coloured, yellowish to brown in KOH **2**
1. Pores surface and tube layers differently coloured, vegetative hyphae hyaline to faintly yellowish, no change in KOH **4**

2. Pores surface grey to brown, tube layers chocolate brown, pores 4-6/mm, vegetative hyphae in the tubes distinctly arboriform, basidiospores ellipsoid, 7.3-9.4 x 3.1-4.2 µm.. **3**
2. Pores surface greyish, livid grey, milk-coffee brown, pores 4-6/mm, tubes brown, vegetative hyphae in tubes mainly unbranched, basidiospores ellipsoid, ovoid to subglobose, 4.5-6 x 3.5-4.5 µm ..... **P. tephropora**

3. Skeletal hyphae strongly dextrinoid ..... **P. amazonica**
3. Skeletal hyphae non-dextrinoid ..... **P. gomezii**

4. Pore surface pale to bright yellow or orange to brick red, but can fade on drying,..... **5**
4. Pore surface whitish, cream, cork, greyish orange **7**

5. Pores 4-5/mm, pore surface bright yellow when fresh, can fade to greyish cream, greyish cork on drying, basidiospores 5.6-7.0 x 4.1-5.9 µm ..... **P. chromatica**
5. Pores 6-8 per mm, basidiospores up to 5.5 µm long **6**

6. Pores 6-8/mm, pore surface pale to bright yellow to orange yellow when fresh, fading pale yellow, basidiospores 4.0-5.5 x 3.0-4.0 µm, ... **P. xantha**
6. Pores 7-8/mm, pore surface pale to bright orange to brick red, basidiospores 4.2-5.5 x 3.0-4.0 µm,..... **P. aurantiaca**

7. Basidiospores in average longer to 8 µm, wider than 5-6 µm, dextrinoid..... **8**
7. Basidiospores in average shorter or equal to 8 µm, dextrinoid or non-dextrinoid **10**

8. Basidiospores 11-13 x 7-8 µm ..... **P. isabellina**
8. Basidiospores 7-9 x 5-7 µm **9**

9. Pores 2-3/mm,..... **P. roseo-isabellina**
9. Pores 6-7 per mm ..... **P. subovoidea**

10. Basidiospores in average longer than 6 µm **11**
10. Basidiospores in average shorter or equal to 6 µm long..... **14**

11. Pores angular, irregular, 2-3/mm, pores surface white, drying light corky, basidiospores dextrinoid, ellipsoid, 7-8 x 4-5µm, Southern Andean taxon .... **P. pauciskeletalis** (not treated here)
11. Pores more or less round, 4-6/mm, basidiospores variably dextrinoid to non-dextrinoid, shorter than 7 µm **12**

12. Pore surface cream to orange, often with greyish tints ..... **P. chromatica**
12. Pore surface pale cork to wood-coloured, basidiospores dextrinoid or non-dextrinoid **13**

13. Margin wide, pores 5-6 per mm, skeletal hyphae non-dextrinoid or weakly dextrinoid without an amyloid reaction along the inner hyphal wall, basidiospores 5.5-7-5 x 4.5-6.3 µm ..... **P. albo-incarnata**
13. Marin narrow or lacking, skeletal hyphae dextrinoid (often strongly so) and with an amyloid reaction along the inner hyphal wall, basidiospores 4.5-5 x 4-4-5 µm..... ..... **P. medulla-panis** complex

14. Pores more or round, regular, 5-8/mm, vegetative hyphae usually distinctly arboriform **15**
14. Pores sinuous, 2-3/mm, vegetative hyphae mainly unbranched, dextrinoid, pore surface creamy, basidiospores 4-5 x 3-4 µm..... **P. sinuosa**

15. Vegetative hyphae not dextrinoid..... **P. minutopora**
15. Vegetative hyphae dextrinoid..... **16**

16. Pores round to angular, often irregular, (4) 5-6 per mm ..... **P. nouraguensis**
16. Pores round and regular, 6-8 per mm..... **17**

17. Spores 3-4 x 2-4 µm..... **P. brasilensis**
17. Spores larger **18**
18. Pores tiny, 7-9 per mm, pore surface cork coloured to pale brown ..... **P. guyanensis**
18. Pores 5-8 per mm, pore surface whitish to pale cream..... **19**

19. Pore surface whitish, basidiospores 3.6-4 x 3.0-3.7 µm ..... **P. parvispora**
19. Pore surface whitish to cream, basidiospores larger..... **20**

20. Spores 3.9-4.8 x 3.3-3.7 µm, large and pyramidal crystals absent in trama and hymenium ..... **P. cremeopora**
20. Spores 4.5-5.2 x 3.4-4.7 µm, large and pyramidal crystals present in trama and hymenium ..... **P. paraguyanensis**

Synoptic key to *Perenniporia* (s. lato)

Spores in µm according to falling size

Basidiocarps pileate
13-16 **P. ochroleuca**
10.3-12.5 long **P. detrita**
7-9 x 4-5.5 **P. sprucei** chlamydospores present
6-7 x 4-5, **P. ganodermoides**
5.5 -7 x 5-6.5 **P. tepeitensis**
5 -9 x 3-6 **P. martia** cystidia variably present,
5 - 6 x 3-4 **P. stipitata** stipitate
5-6 µm in diameter **P. duplexa**
4.7- 6.0 x 4.2-5.0 **P. pendula** pendant
4-6 x 3.5-5.5 **P. inflexibilis**
4.5-5 x 4-4.5 **P. micropora**
3.7-4.8 x 3.0-4,0 **P.contraria**
3.5- 4.5 x 2.7--3.8 **P. subannosa**
3-4 µm in diam **P. neofulva**

Basidiocarps resupinate
11-13 x 7-8 **P. isabellina**
11.13 x 7-8 **P. sinuosa**
7.5 -10 × 4.5–6.5 **P. subobvoidea**
7-9 x 5-7 **P. roseo-isabellina**
7.3-9.4 x 3.1-4.2 **P. amazonica**
7.3-9.4 x 3.1-4.2 **P. gomezii**
5.5-7.0 x 4.0-6.0 **P. chromatica**
5.0 - 6.0 × 3.5–4.5 **P. guianensis**
5.5 - 7.5 × 4.5- 6.3 **P**. **albo-incarnata**
5 -6.5 x 3-4 **P. medullapanis**
4.5-6 x 3.5-4.5 **P. tephropora**
4.5–5.2 × 3.4–4.7 **P. paraguyanensis**
4.5-5.0 × 3.3-3.7 **P. nouraguensis**
4.2-4.9 x 3.0-3.7 **P. minutopora**
4.2-5.5 x 3.0-4.0 **P. aurantiaca**
4.0-5.5 x 3.0-4.0 **P. xantha**
3.9-4.8 x 3.3-3.7 **P. cremeopora**
3.6-4 x 3.0-3.7 **P. parvispora**
3–4 x 2–4 µm, **P.brasilense**

NB. Since all spores in the genus are smooth, and all basidia are tetrasterigmatic, this is not repeated for each species. Further, since all species occur on hard wood, substrate is not indicated unless it is different.

Perenniporia albo-incarnata (Pat. & Gaillard) Decock & Ryvarden,
Cryptog. Mycol. 32:14, 2011. - *Polyporus albo-incarnatus* Pat. & Gaillard, Bull. Soc. Mycol. Fr. 4: 35, 1888.
Basidiocarps seasonal to bi-seasonal, resupinate, adnate, effused, confluent, reaching 50–100 mm, up to 30 mm wide, 1–4 mm thick, margin well marked, 0.5–3 mm wide appressed, whitish, pinkish, pale creamy to light greyish orange; pores surface white to pinkish bruising yellowish cream, pale orange white to pale greyish orange to light brown on places sunburn to cinnamon); *pores* round to angular, regular, (4–) 5–6 (–7) / mm, dissepiments thin, entire, smooth, (20–) 25–65 (–72) µm thick; tube layer single, up to 2.5 mm thick pale brown sunburn, pale cinnamon); context thin, up to 1 mm thick, greyish orange, corky.
Hyphal system dimitic, generative hyphae hyaline, with clamps, 1.5–2.3 µm wide; vegetative hyphae of the skeleto-binding type, hyaline, non- to weakly dextrinoid (best seen in mass), arboriform with an unbranched basal stalk, arising from a clamp25–95 µm long thick-walled, lumen visible, progressively widening from 1.7–2.3 µm wide at the basal septum to 2.5–3.5 µm wide at the apex, and several, 1–4, lateral apical branches, thick-walled, 25 µm to 180 µm long, ending in a thin-walled whip like tips.
Basidia 14–18 × 7–8 µm, cystidiols present, fusiform to slightly ventricose, 13–20 × 7–8 µm.
Basidiospores 5.5–7.5 × 4.5- 6.3) µm, subglobose to broadly ovoid, truncate, thick-walled, hyaline, weakly to strongly dextrinoid,
Chlamydospores absent.
Distribution: Known so far only from South America, in Venezuela, Colombia, and Costa Rica.
Remarks. This species is similar to *P. medulla-panis* but differs in having a broad sterile margin, slightly smaller pores (5–6 against 4–5 per mm in *P. medulla-panis*), none to weakly dextrinoid vegetative hyphae, without any amyloid reaction of the inner side of the hyphal wall, and larger basidiospores 6.3 × 5.4 µm in *P. albo-incarnata* versus 4.9 × 3.9 in *P. medulla-panis*).
P. albo-incarnata is also similar to *P. roseo-isabellina* which however has distinctly larger pores and longer basidiospores. *Perenniporia cremeopora*, *P. minutopora*, *P. parvispora* and *P. guyanensis* all differ in having distinctly smaller basidiospores.

Perenniporia amazonica De Jesus & Ryvarden,
Synopsis Fung. 27:74, 2010.
Basidiocarps annual widely effused, resupinate and adnate, woody hard , 4-5 cm in the largest piece, up to 3 mm thick, pore surface dark grey, pores circular and isodiametric, 6-8 per mm, tube layer concolorous with pore surface or violaceus grey, up to 3 mm deep on sloping substrate, subiculum almost invisible, up to 200 µm, whitish to wood coloured.
Hyphal system dimitic; generative hyphae thin-walled and with clamps, 2-5 µm in diam, 2-5 µm wide and hyaline to pale yellow, skeletal hyphae thick-walled, nonseptate, 2-8 µm in diam, thick walled to almost solid, hyaline to pale brown and unbranched, strongly dextrinoid and with an rounded apex, in the dissepiments projecting like cystidia or pseudosetae, smooth the slightly encrusted.
Cystidia absent, but see above.

Basidia 15-20 x 5-7 µm, clavate.
Basidiospores 7.5-8.5 x 2.8-3.5 µm, pip shaped or oblong ellipsoid, truncate, thick-walled, hyaline to very pale yellow and weakly dextrinoid.
Distribution. Known only from the Amazonas basin in Brazil.
Remarks. The species is characterized by the dark grey basidiocarps, tiny pores, strongly dextrinoid skeletal hyphae which project cystidia-like in the dissepiments, and oblong, non dextrinoid, slightly pip shaped basidiospores.
Perenniporia gomezii is undoubtedly the closest relative which however, has branched thick-walled generative hyphae and non dextrinoid skeletal hyphae. The basidiospores in the two species are almost identical.

Perenniporia aurantiaca (David & Rajchenberg) C. Decock and Ryvarden, Mycol. Res. 103:1140, 1999. - *Pyrofomes aurantiacus* David & Rajchenberg, Mycotaxon 22, 312-313, 1985.
Basidiocarp seasonal (to perennial), completely resupinate, thin, effused, adnate, with a distinct to diffuse, fimbriate margin, margin cream-orange to brownish orange pore surface even, orange when fresh turning greyish orange to brownish orange to brick red when dry, pores regular, round to angular, (6)-7-8/mm, dissepiments entire, slightly pruinose under the lens, tube layer 1-(2) concolorous with the pore surface, or whitish, old tubes filled with whitish, cottony mycelium, up to 0.8-1.2 mm thick, context up to 50 µm thick, creamy to pale orange, rhizomorphs absent or present, at the margin, beneath the bark, in the wood or in soil, whitish to bright orange when fresh, turning greyish to orange to brick-red when dry, 0.1-2 mm thick.
Hyphal system dimitic, generative hyphae numerous, clamped, thin to slightly thick walled, hyaline to pale orange, smooth to encrusted with a fine pale orange granulation, turning pinkish to violet in alkali, 2-4 µm wide, in the pore mouth, ending dendrohyphidia-like, with a few apical dendroid branches, vegetative hyphae small arboriform, hyaline, non dextrinoid, sinuous, thick walled, ending thin-walled, rhizomorphs multi-layered, composed of an outer layer made of strongly branched, very narrow binding-like hyphae, similar to those below the subiculum, non dextrinoid, 0.3-0.7 µm wide, a medium layer composed of generative hyphae smooth to finely encrusted, 2-4 µm wide, and skeletal hyphae, thick-walled, 2-4 µm wide, hyaline, non-dextrinoid, and a central core composed mainly of parallel enlarged hyphae mixed or not with skeletal hyphae.
Basidia 12-15 µm, clavate to pear-shaped.
Basidiospores 4.0-5.5 x 3.0-4.2 µm, ellipsoid to ovoid, truncate, thick-walled, non dextrinoid.
Distribution. Brazil, French Guiana.
Remarks. *P. aurantiaca* and *P. xantha* are closely related, and characterized by a resupinate brightly coloured basidiocarp, small pores, truncate basidiospores and small, few developed vegetative hyphae in the tubes. Furthermore, both taxa show a violet or purple discoloration in the alkali (KOH, NAOH, and ammonia), indicating related pigments.

Perenniporia brasiliensis Lira, Soares, Ryvarden & Gibertoni, in sched.
Basidiocarps annual, resupinate, smooth and even, hard to brittle, 10 x 1.5 cm and 0.5 mm thick; pore surface cream grayish to tan; dissepiments smooth; *pores* slightly thick walled, round to angular, mostly 6–7 per mm; tubes concolorous with the pore surface, up 0.5 mm deep; context about 100 mm thick, cottony and concolorous with the pore surface, margin smooth, narrow and concolorous with the pore surface.
Hyphal system dimitic, generative hyphae thin-walled, smooth and with clamps, 2–4 µm wide, skeletal hyphae weakly dextrinoid 2–3/µm.
Cystidia or other sterile elements absent.
Basidia 14–20 x 4–6 µm, clavate with four sterigmata.
Basidiospores 3–4 x 2–4 µm, globose to subglobose, hyaline, thin-walled and dextrinoid.
Remarks. *Perenniporia brasiliensis* is similar to *P. albo-incarnata* (Pat. & Gaillard) Decock & Ryvarden, and *P. guyanensis* Decock & Ryvarden, sharing the same whitish color. However, they are micro-morphologically different

Perenniporia chromatica (Berk. & Cooke) Decock & Ryvarden,
Mycol. Res. 103:1142, 1999. - *Polyporus chromaticus* Berk. & Cooke, J. Linn. Soc. 15: 384, 1876.
Basidiocarp resupinate, effused, adnate, up to 35 mm x 10 mm wide, pore surface bright yellow when fresh greyish cream to orange grey, pores regular, 4-5 mm, tubes 2-3 mm as pore surface, context thin to almost absent, concolorous with the pore surface on dry specimen.
Hyphal system dimitic, generative hyphae with clamps, hyaline, thin-walled to slightly thick-walled, tubes dimitic composed mainly of arboriform skeletal hyphae, thick-walled, apical branches (0-)1-4, few ramified, straight, progressively attenuating at the thin-walled tips.
Basidia not seen.
Basidiospores 5.5-7. 0 x 4.0-6.0 µm**,** sub-globose to broadly ovoid, apically truncate, thick-walled, hyaline, dextrinoid**.**
Distribution. Known from Brazil and Venezuela.
Remarks. The species differ from *P. xantha* by wider basidiospores and longer and wider arboriform skeletal hyphae. *P. chromatica* is related to *P. isabellina* (Pat.) Ryvarden, but is easily separated by larger basidiospores

Perenniporia contraria (Berk. & M. A. Curtis) Ryvarden,
Norw. J. Bot. 19: 233, 1972. - *Fomes contrarius* Berk. & M. A. Curtis, Grevillea 15:21, 1886.
Basidiocarp perennial pileate to effused-reflexed, semicircular, up to 10 cm wide and long and 2 cm thick at the base, woody hard when dry, but rather light in weight, pileus first velvety and ochraceous and then with a thin dark line below the tomentum, soon weathering and partly with dark tomentum in some zones, partly glabrous, reddening and darkening to almost black in other zones, dull, shallowly concentrically sulcate and sometimes radially cracked with age acute, thin to rather thick, pore surface cream to pale fulvous, pores round, 7-8 per mm, dissepiments thin to rather thick, entire and slightly farinose, tubes up to 1 cm deep, distinctly stratified, each layer up to 3 mm, sterile margin

up to 2 mm broad, context pale cork to wood-coloured, 0.3-0.5 mm thick, pileus cortex as a dark line above, about 0.5 mm thick.
Hyphal system in the context and dissepiments di-trimitic, generative hyphae sparingly present, clamped, hyaline and thick-walled, 2-2.5 µm in diameter, skeletal hyphae abundant, thick-walled with a distinct lumen, hyaline to yellow, 2-4,5 µm wide, reddish-brown in Melzer's reagent, randomly oriented, some hyphae are weakly branched appearing as binding hyphae, hyaline, thick-walled and dextrinoid.
Basidia 10-14 x 4-5 µm, clavate.
Basidiospores 3.7-4.8 x 3.0-4,0 µm, broadly ellipsoid to subglobose, often angular to almost cylindrical, often partly collapsed, hyaline to pale yellow, smooth and thick-walled, non-dextrinoid.
Distribution. Known from Brazil, Belize, Cuba and Jamaica and is probably widespread throughout tropical America.
Remarks. The species is characterized by the sulcate and brown, first velutinate, then glabrous pileus with a distinct cuticle (reminding slightly of *G. applanatum*), the very small pores and the small thick-walled spores and strongly dextrinoid skeletal hyphae.

Perenniporia cremeopora Decock & Ryvarden,
Mycologia 92:355, 1999.
Basidiocarp annual, resupinate, effused, adnate, up to 35 x 18 mm large, 1 mm thick, margin very narrow abrupt, pore surface even, whitish to creamy, pale greyish orange on bruising, pores even, round, 6--8/mm, tubes non-stratified, up to 1 mm thick, concolorous with the pore surface or slightly darker (pale greyish orange), corky, fibrous, context almost absent, up to 50 µm thick, concolorous with the tube layer.
Hyphal system dimitic in the context and the trama of the tubes, generative hyphae hyaline, thin-walled, sparingly branched, clamped, 1.5-2.5 µm wide, vegetative hyphae hyaline, dextrinoid, especially close to the subiculum, less dextrinoid close to the pore surface, trama of the tubes composed mainly of short arboriform skeleto-binding hyphae or, occasionally, intercalary skeleto-binding hyphae, with apical branches, rarely with 1(-2) basal branches, from 1.5 to 6 µm wide from apex to base.
Basidia 11.5-19.0 x 6.5-8.5 µm, pedunculate to pyriform.
Basidiospores 4.0 -5.0 x 3.2-3.8 µm, ellipsoid to ovoid, apically truncate, thick-walled, non- to strongly dextrinoid.
Cystidia and **chlamydospores** absent.
Distribution. Known only from the type locality in Dominican Republic.
Remarks. The species is separated from *P. minutopora* by its whitish pore surface and non-dextrinoid skeletal hyphae (dextrinoid in *P. minutopora*).

Perenniporia detrita (Berk.) Ryvarden,
Preliminary polypore flora East Africa p. 467, 1980. - *Polyporus detritus* Berk. Hook. J. Bot. 8:197, 1856.
Basidiocarp perennial, pileate, dimidiate to semicircular, applanate to effused reflexed with several rather narrow pilei from a common decurrent pore surface, variable in size, up to 20 cm wide, 30 cm long and 3.5 cm thick at the base, but usually smaller, when effused reflexed single pilei usually up to 2-3 cm wide and then with and oblique surface,

woody hard when dry, pileus first white-ochraceous to wood-coloured, dull and soft to touch, then becoming darker and more smooth or slightly tuberculate to warted, spot wise, with reddish spots or streaks that become bay and spread from the base as the upper hyphae agglutinate, finally black and with a thin, but distinct cortex, usually azonate, but frequently knobbly and tuberculate, often in an irregular pattern, pore surface white to ochraceous, pores round and small, 4-5 per mm, more irregular on effused specimens growing on oblique substrate, tubes as pore surface, up to 8 mm deep, context white to pale cream, woody hard, up to 3 cm thick at the base.
Hyphal system trimitic, generative hyphae with clamps, hyaline, thin-walled and 2-4 µm wide, often difficult to observe, skeletal hyphae dominating in the basidiocarp, in the context straight, thick-walled and strongly dextrinoid, 3-8 µm wide, in KOH swelling to 11-12 µm, in the dissepiments more narrow and mixed with more branched hyphae, either binding hyphae as such, or upper part of arboriform skeletal hyphae, down to 2 µm at the outer ends.
Basidia 15-25 x 6-12 µm, bottle-shaped to clavate, more rarely ventricose.
Basidiospores 5.5-9 x 5-6 µm, globose to truncate, thick-walled and variably dextrinoid.
Chlamydospores usually present, both in the trama and the context, strongly dextrinoid, mostly globose 9-13 µm in diameter or more oblong and 8-17 x 9-12 µm.
Distribution. Brazil (type locality) and Venezuela.
Remarks. When old and well-developed, the dark pileus with a thin cortex is a good field characteristic. However, young specimens are white and can easily be confused with an *Antrodia* sp. or a badly developed *Trametes* sp. The dextrinoid reaction of the spores and skeletal hyphae will reveal it as a *Perenniporia* sp. The chlamydospores are diagnostic for the species, and the basidiospores are larger than those found in *P. medulla-panis* and related species.

Perenniporia duplexa Ryvarden,
Synopsis Fung. 35: 40, 2016.
Basidiocarps annual, pileate, imbricate in the holotype, semicircular and broadly attached, 1 cm wide, 2 cm long and 2 mm thick at the base, flexible when fresh, slightly tougher when dry, , upper surface finely adpressed tomentose in sulcate concentrically zones, ochraceous to cream coloured in younger marginal part, greyish white in older parts towards the base, margin sharp and wavy, pore surface white to pale cream coloured, pores round, 7-8 per mm and almost inviable to the naked eye, tubes concolorous, up to 1 mm deep, context 1 mm thick, duplex, lower part pale cinnamon, darker than the tubes, separated from the pileus tomentum by a thin dark distinct line
Hyphal system dimitic; generative hyphae with clamps, hyaline, thin- to distinctly thick walled, 2-4 µm wide, skeletal hyphae 3-6 µm wide, thick-walled, sinuous and mostly unbranched, strongly dextrinoid.
Cystidia absent.
Basidia 12-14 x 3-5 µm, clavate.
Basidiospores 5-6 µm in diameter, globose, smooth, hyaline and negative in Melzers reagent.
Distribution. Known only from the type locality in Vera Cruz in Mexico, but do certainly have a wider distribution.

Remarks. The duplex context, tomentose to velutinate pileus, tiny pores and globose non dextrinoid spores characterize this species.

Perenniporia ganodermoides Gibertoni & Ryvarden,
Synopsis Fung. 35:58, 2016.
Basidiocarps annual, pileate, dimidiate to sessile, 5 cm wide and 10 cm long, 1 cm thick at the base, applanate, semicircular, probably flexible when fresh, bony hard when dry as in the type, pileus glabrous, smooth to tuberculate, azonate, ochraceous towards the marking, in older parts reddish dark brown and more and irregularly warted and tuberculate, margin sharp, pore surface reddish brown, pores round and invisible to the naked eye, 10-12 per mm, tubes concolorous, up to 6 mm deep, evenly reddish brown, context light ochraceous, dense homogenous, up to 3 mm thick and strongly contrasting the dense reddish brown tubes..
Hyphal system dimitic; generative hyphae thin-walled and with clamps, 2-3 µm in diam, skeletal hyphae arboriform and strongly branched in upper part, up to 6 µm wide in main stem ending in thin wip like branches, hardly more than 0.5 µm thick in the apex, all hyphae without reaction Melzer's reagent.
Cystidia absent.
Basidia not seen in the type.
Basidiospores 6-7 (8) x 4-5 µm. truncate and strikingly like the *Ganoderma* spores in shape, thick-walled, IKI-.
Distribution. Known only from the type locality in Brazil .
Remarks. This is striking species, partly by the ochraceous glabrous warted surface, the dense reddish pore surface, tubes with invisible very smaller pores and the ganodermatoid spores.

Perenniporia gomezii Rajchenberg & Wright,
Mycotaxon 15:306, 1982.
Basidiocarps annual widely effused, resupinate and adnate, but sometimes narrowly reflexed on vertical surfaces, tough-hard and fragile, up to 10 x 17 cm in size and1.5 cm thick, pore surface chocolate brown with cinnamon greyish tints in places, the pores circular and isodiametric in horizontal parts, on sloping substrates more variable, 4-8 per mm tube layer concolorous with pore surface or violaceous grey, up to 1.5 cm deep, subiculum up to 1.5 mm ochraceous to wood coloured.
Hyphal system dimitic; generative hyphae thin-walled and with clamps, 2-5 µm in diam, in the trama and context also thick-walled, 2-8 µm wide and yellow to chest nut-brown wit apical branching, easily mistaken for binding hyphae if broken, skeletal hyphae thick-walled, nonseptate, 2-8 µm in diam, thick walled to almost solid, pale brown and apically branched, and thus may be termed arboriform skeletal hyphae, all hyphae non-dextrinoid.
Cystidia absent.
Basidia 14-18 x 4-6 µm, clavate and with two (?) or four sterigmata.
Basidiospores 8-11 x 3-4.5 µm, oblong ellipsoid, truncate and some slightly tapering, thick-walled, hyaline to very pale yellow and IKI-.
Substrata. Known only from branches of living *Melia azederach*.

Distribution. Known only from the type locality in Argentina.
Remarks. The species is characterized by the dark brownish basidiocarp and non dextrinoid, oblong, slightly pip shaped basidiospores. *P. tephropora* may have almost the same dark colour in maturity, but has shorter spores.

Perenniporia guyanensis Decock & Ryvarden,
Cryptog. Mycol. 32:21, 2011.
Basidiocarps seasonal, resupinate, effused, adnate, individual basidiocarps up to 50 × 30 mm, merging to form larger patches, up to 1–1.2 mm thick; margin narrow, almost absent, or spreading, then forming wide sterile patches, up to 4 mm wide, white when fresh, whitish to greyish cream when dried, contrasting the pore surface which is cork coloured to pale brown, greyish orange or café au lait, pores round to slightly ellipsoid, (7–) 8–9 / mm, dissepiments entire, agglutinated, tubes layer single, up to 1 mm thick, whitish to pale cork-coloured to pale greyish orange with a corky consistency; context thin, up to 0.2 mm thick.
Hyphal system dimitic, generative hyphae hyaline, clamped, sparingly branched, 1.5–2.5 µm wide; vegetative hyphae of the skeleto-binding type, strongly dextrinoid, 2-5 µm wide.
Basidia hyaline, with 4 sterigmata;
Basidiospores 5.0–6.0 × 3.5–4.5 µm, broadly ellipsoid to broadly ovoid and truncate, thick-walled, hyaline, faintly to moderately dextrinoid.
Chlamydospores absent
Distribution. Known so far only from French Guyana.
Remarks. The species is characterized by the combination of a cork coloured to greyish brown (milk-coffee) pore surface, small pores, dextrinoid basidiospores, and dextrinoid vegetative hyphae.
In the Neotropical areas, *P. guyanensi*s could be compared to *P. minutopora* or *P. cremeopora*. It differs from the former in having smaller pores and slightly larger basidiospores and strongly dextrinoid vegetative hyphae (not dextrinoid in *P. minutopora*). *Perenniporia cremeopora* has a distinctly whitish to pale cream pore surface.

Perenniporia inflexibilis (Berk.) Ryvarden,
Norw. J. Bot. 19:233, 1972. - *Polyporus inflexibilis* Berk., Hook. J. Bot. 8:199, 1856.
Basidiocarps perennial, pileate to effused resupinate, often with an elongated rounded pileus along the margin of an otherwise resupinate basidiocarp, solitary or fused to more compound basidiocarps, more rarely distinctly pileate and then ungulate and in rare cases almost pendant and attached only by the upper part of the pileus, resupinate basidiocarps up to 10 cm in diameter, pileus as such, rarely above 4 cm wide, but up to 6 cm thick at the base, hard, but light in weight when dry, pileus first finely adpressed velutinate, but soon becoming glabrous and concentrically sulcate in numerous narrow rounded to sharp zones with distinct furrows, especially towards the margin, the tomentum will often persist in such furrow or along the margin. margin distinctly delimited towards the substratum, rounded and frequently steep to almost vertical, up to 5 mm high, pore surface whitish grey to ashy blue in growing specimens, pale brown in old specimens, in some basidiocarps the pore surface recedes and leaves an uneven surface with rounded or smaller areas with fresh pores or tubes on the older brownish parts, pores very small and round, 6-10 per mm, almost invisible to the naked eye, dissepiments rather thick, even and

slightly farinose, tubes tan to pale brown totally up to 6 cm thick, distinctly to indistinctly stratified, each stratum, 0.5-3 mm thick, context very thin to almost lacking, pale brown.
Hyphal system trimitic, generative hyphae delicately thin-walled, hyaline and with clamps, 1-2.5 µm in diameter, binding hyphae prominent, moderately branched, thick-walled but with a distinct lumen, almost hyaline or very pale yellowish-brown individually, dominating both in tubes and context, often with long segments without branching looking like skeletal hyphae dextrinoid in Melzer's reagent.
Basidia 14-18 x 4-7 µm, clavate.
Basidiospores 4-6 x 3.5-5.5 µm, broadly ellipsoid to truncate, hyaline to pale yellowish-brown, mostly thick-walled, abundantly present in all specimens examined, weakly dextrinoid.
Distribution. Pantropical, in America seen from Brazil, Venezuela, Cuba,
Remarks. The species is recognized by its glaucous to pale brown fine-pored pore surface, the stratified pale, brown tubes, the almost lacking context and the abundantly present, small truncate spores and the dextrinoid vegetative hyphae.

Perenniporia isabellina (Sacc.) Ryvarden,
Occas. Pap. Farlow Herb. 18:22, 1983. - *Poria isabellina* Sacc., Syll. Fung. 9:192, 1891.
Basidiocarps annual, resupinate, effused, up to 3 mm deep, tough-corky; pore surface pale cocoa brown to buff or tan coloured, pores angular, 4-5 per mm, tube layers concolorous, subiculum thin, up to 0.5 mm thick, lighter than the tubes, ochraceous.
Hyphal system dimitic; subicular generative hyphae thin-walled, nodose-septate, 2-4 µm in diam; subicular arboriform skeletal hyphae, thick-walled, 2.-5 µm in diam; negative in Melzer's reagent.
Cystidia none.
Basidia not seen.
Basidiospores 11-13 x 7-8 µm, oblong truncate, thick-walled, hyaline, slightly dextrinoid.
Distribution. Known from the type locality at Puerto Zamuro in Venezuela besides French Guyana.
Remarks. The species is characterized by the large thick walled dextrinoid spores, the resupinate basidiocarp and the moderately large pores.

Perenniporia martia (Berk.) Ryvarden,
Norw. J. Bot. 19:143, 1972. - *Polyporus martius* Berk., Hook. J. Bot. 8:198, 1856.
Basidiocarp perennial, solitary, pileate, semicircular to dimidiate, mostly broadly attached, up to 15 cm long, 10 cm wide and 8 cm thick, consistency very hard and heavy when dry, pileus applanate to ungulate, glabrous, usually irregularly concentrically sulcate, dark bay, dirty brown to black with a distinct crust up to 2 mm thick, cracking with age, margin obtuse, usually cream to dirty white, pore surface cream to dirty ochraceous, pores round, 4-5 per mm, dissepiments thick and entire, almost as thick as the pore- openings, tubes totally up to 6 cm deep, distinct to indistinctly stratified, each layer up to 8 mm long, the younger layers often cream to cork-coloured, the upper layer pale ochraceous, snuff brown to dark brown, sterile margin 1-2 mm broad, context cream, wood-coloured, dark ochraceous to pale greyish-black in old parts, up to 3 cm thick.

Hyphal system in tubes and context trimitic, generative hyphae hyaline, clamped and thin-walled, 1.5-3 µm in diameter, often collapsed and difficult to find, skeletal hyphae abundant, dominating in the whole basidiocarp, strongly dextrinoid, 2-6.5 µm wide, binding hyphae few, thick-walled, dextrinoid, 2-4 µm wide.
Cystidia 30-70 x 6-12 µm and arising from skeletal hyphae, common to apparently absent, ventricose to clavate, thick-walled, non dextrinoid to dextrinoid, with an apical encrusted crown, or encrusted in the upper part, mostly embedded and often difficult to observe.
Basidia not seen.
Basidiospores 5-9 (10) x 3-6 µm, pip shaped to weakly truncate with a distinct tapering end, thick-walled, variably dextrinoid, smooth, often of considerably variable size within the same specimen.
Distribution. Pantropical, but nowhere common.
Remarks. The species is distinct microscopically with its pip shaped or tapering spores. The cystidia seem to be more common in African and Asian specimens than in American ones. Reid (1973:168) accepts *Fomes latissimus* Bres. (from Africa and Asia) as a species of its own based on the cystidia. He indicated that the paleotropical collections could belong here, even if there were three collections from this area where he could not demonstrate cystidia.

Perenniporia medulla-panis (Jacq.:Fr.) Donk,
Persoonia 5:76. 1967. - *Boletus medulla-panis* Jacq., Miscel. Austr. 1:141, 1778. - *Polyporus medulla-panis* Jacq.: Fr., Syst. Mycol. 1:380, 1821.
Basidiocarps annual to perennial, becoming widely effused, usually resupinate but sometimes narrowly reflexed on vertical surfaces, tough-corky; pore surface highly variable in colour, cinereous, cream colour to cream-buff or bright yellow, the pores circular, 4-5 per mm, with thick dissepiments; subiculum thin, cream coloured to yellowish; tube layers concolorous with subiculum, distinctly stratified, each layer up to 1 mm thick.
Hyphal system trimitic; subicular generative hyphae thin-walled, nodose-septate, 2-4 µm in diam; subicular skeletal hyphae thick-walled, 2.5-4 µm in diam; binding hyphae thick-walled, much-branched, 1.5-2 µm in diam; skeletal and binding hyphae dextrinoid in Melzer's reagent; tramal hyphae similar.
Cystidia none; fusoid cystidiols present, not projecting, 15-22 x 7-8 µm with a basal clamp; hyphal pegs ofen present.
Basidia 19-27 x 7-11 µm, broadly clavate, tetrasterigmatic with a basal clamp.
Basidiospores 4.5-5 x 3.5 -4 µm, broadly ellipsoid to ovoid, usually truncate, thick-walled, hyaline, weakly to strongly dextrinoid in Melzer's reagent.
Distribution. Cosmopolitan species, often in open and sunny localities.
Remarks. *Perenniporia medulla-panis* (described from Europe) as circumscribed here includes probably a complex of related species which need accurate studies and DNA sequencing to elucidate. However, it is characterized by the thick walled dextrinoid spores and rather thin dextrinoid skeletal and binding hyphae. Macroscopically, the tough, perennial or persistent basidiocarps with the typical pale wood- or cork-coloured pore

surface are distinctive. Reflexed basidiocarps are occasionally found on vertical surfaces, such as the sides of stumps and poles.

Perenniporia micropora Ryvarden,
Mycotaxon 28:532, 1987.
Basidiocarps pileate, annual, effused reflexed, up to 1.5 cm wide and 6 cm long, 1-3 mm thick, coriaceous; pileus semicircular, upper surface strongly zonate, slightly sulcate to smooth as the margin, glabrous, ochraceous at the margin becoming darker as a thin cuticle starts to develop from the base, pore pale isabelline or cream to wood-coloured, pores tiny and invisible to the naked eye, 8-10 per mm; tubes wood-coloured, up to 2 mm deep; context concolorous, 1 mm thick.
Hyphal system dimitic, generative hyphae with clamps, thin-walled, hyaline and 2-3 µm wide, skeletal hyphae flexuous, unbranched to rarely dichotomously branched, solid to thick-walled and non-dextrinoid, 2-3 µm wide.
Cystidia or other sterile hymenial elements absent.
Basidia not seen.
Basidiospores 4.5-5 x 4-4.5 µm, globose to subglobose, hyaline, thick-walled and weakly dextrinoid.
Distribution. Known from the type locality in Tingo Maria Nat. park, in Peru and from French Guiana.
Remarks. The species is recognized by its minute pores and small, globose, thick-walled and slightly dextrinoid spores. *P. stipitata* has a stipitate basidiocarp and truncate oblong basidiospores while *P. tepeitensis* has larger pores and spores respectively.

Perenniporia minutopora Decock & Ryvarden,
Mycologia 92:356, 1999.
Basidiocarp resupinate, individual pieces up to 45 x 28 mm and 1-1.2 mm thick, seasonal, effused, adnate, margin absent in the fragments pore surface even, greyish orange to pale brownish orange, light brown when bruised (cinnamon), pores even, round, (5) 6-7 / mm, dissepiments entire, smooth, tubes layer unique, non-stratified, up to 1 mm thick, concolorous with the pore surface or slightly darker (greyish orange), brittle when dried, subiculum thin up to 150-200 µm thick, concolorous with the tube layer or slightly lighter (creamy to pale greyish orange).
Hyphal system dimitic in the subiculum and the trama of the tubes, generative hyphae clamped, sparingly branched, hyaline, thin-walled, 1.5-3 µm diam, vegetative hyphae hyaline, not dextrinoid, slightly swelling in KOH, tubes composed skeleto-binding hyphae mainly distinctly arboriform or, more rarely, as intercalary skeleto-binding hyphae, basal part usually straight, thick-walled but with a distinct lumen, with branching in the upper third with 1--5(--6) branches, thick-walled but with a distinct lumen, narrow,
Basidia not seen.
Basidiospores 4.0-5.0 x 3.0-4.0 µm, ellipsoid to slightly ovoid, apically truncate, thick-walled with an apical germ pore and with a small to inconspicuous apiculus, 0-1 guttulate, hyaline, non- to strongly dextrinoid.
Distribution. Known only from the type locality in French Guiana.

Remarks. *P. minutopora* is well characterized by its resupinate, pale brown, hard and brittle basidiocarp, small pores and small, dextrinoid, truncate basidiospores. The arboriform skeleto-binding hyphae are negative in Melzer´s reagent.

Perenniporia neofulva (Lloyd) Ryvarden,
Mycotaxon 38:93, 1990. - *Polyporus neofulvus* Lloyd, Lloyd Mycol. Writ. 4:60, 1915. - *Perenniporia piperis* (Rick) Rajchenb., Nord. J. Bot. 7:555, 1987. - *Fomes piperis* Rick, Iheringia Bot. 7:202, 1960. - *Perenniporia albida* Rajchenb. & Wright, Mycotaxon 15:309, 1982.
Basidiocarps pileate, annual, sessile to slightly flabellliform, semicircular, up to 4 cm wide and 1cm thick at the base, coriaceous; pileus surface azonate, smooth to tuberculate or sulcate, glabrous, cream to tan-coloured, sometimes with a slight orange tint, pore surface concolorous, pores round to angular, 5-7(9) per mm; tubes concolorous, up to 8 mm deep; context concolorous or slightly paler, 1-3 mm thick.
Hyphal system dimitic, generative hyphae with clamps, thin-walled, hyaline and 2-3 µm wide, skeletal hyphae flexuous, unbranched to rarely dichotomously branched, solid to thick-walled and not dextrinoid, 1-3 µm wide, in the context up to 5 µm.
Cystidia or other sterile hymenial elements absent.
Basidia not seen.
Basidiospores 3-4 µm in diam, globose to subglobose, hyaline, thick-walled and weakly dextrinoid (observed in masses).
Distribution. Known from Rio Grande do Sul in Brazil and Iguazu nat. Park in Northern Argentine.
Remarks. The species is recognized by its pileate condition and the small globose, thick-walled and slightly dextrinoid spores. *P. micropora* has a similar basidiocarp, but has smaller pores and larger spores.

Perenniporia nouraguensis Decock,
Plant. Ecol. Evolut. 149:234, 2016.
Basidiocarps resupinate, adnate, effused, up to 20--40 mm long, 5--20 mm wide and up to 2 mm thick, corky consistency; pores surface white, whitish to very pale orange white on drying, discoloring to pale corky on bruising; margin 0.5--1 mm wide, white, well delimited; pores round to angular, irregular (4) 5--6 per mm, in parts elongated, ellipsoid to rectangular, up to 200 × 150 µm; dissepiments entire, tubes 1--2 mm deep, whitish to very pale greyish orange, context whitish, less than 0.5 mm thick,.
Hyphal system dimitic, generative hyphae with clamps, hyaline, clamped, 1.5--2.0 µm wide; vegetative hyphae as skeleto-binding type, of the arboriform type, hyaline, dextrinoid, skeleto-binding hyphae with an poorly developed arboriform branching pattern, 1.3--1.8 µm diam.
Basidia club-shaped to slightly pyriform with a basal clamp.
Basidiospores 4.5-5.0 × 3.3-3.7 µm, ellipsoid to slightly ovoid with a truncate apex, thick-walled, hyaline, dextrinoid.
Distribution. So far known only from French Guiana.

Remarks. The combination of a resupinate basidiocarp, a whitish pore surface with 5-6 pores pr. mm, distinctly arboriform, narrow and dextrinoid vegetative hyphae and ellipsoid, dextrinoid basidiospores averaging 4.8 ´ 3.5 µm, make this species distinct. *P. nouraguensis* may remind one of *P. minutopora* and, at a lesser degree, to *P. guianensis*. The former has however, a cork-colored to light brown pore surface with 6--7 pores / mm and non-dextrinoid vegetative hyphae.
Perenniporia guyanensis differs from *P. nouraguensis* in having a cork- to milk-coffee colored pore surface and slightly larger basidiospores, mostly 5--5.5 × 4-4.5 µm. *Perenniporia subovoidea* differs by having ovoid elongated to sub-oblong and larger basidiospores, 7.5-10.0 × 4.5-6.0 µm. *Perenniporia parvispora* differs in having distinctly smaller pores (6-) 7-8 /mm, and smaller basidiospores, 3.5--4.5 × 3-3.5 µm.

Perenniporia ochroleuca (Berk.) Ryvarden,
Norw. J. Bot. 19:233, 1972. - *Polyporus ochroleucus* Berk., Hooker's London Jour. Bot. 4:53, 1845.
Basidiocarp perennial, solitary or imbricate, sessile or attached with a narrow base rather small, up to 7 cm broad and 5 cm wide, 0.3-2.5 cm thick, corky when fresh, but woody hard when dry, pileus glabrous applanate, dimidiate to ungulate, cream-ochraceous, with age discoloured, often zonewise from pale yellowish brown to pale, purplish brown, dull to weakly shiny, distinctly concentrically zoned, sulcate to smooth, finely radiantly striate, margin thick, round, entire or slightly lobed, usually light-coloured, pore surface white, cream, ochraceous to discoloured, pale brownish in older specimens, pores round, 2-4 per mm, dissepiments thick and entire, tubes single-layered or weakly stratified 3-10 mm long, straw to wood-coloured, sterile margin very narrow, context 1-3 mm thick, upper surface as a distinct horny cuticle, the flesh itself white to ochraceous, weakly zoned.
Hyphal system trimitic, generative hyphae thin-walled, hyaline, with irregular and few clamps, 1.5-4 µm wide, often collapsed and distorted, skeletal hyphae hyaline, thick-walled with a distinct lumen, diameter rather variable, up to 2-6 µm wide, often with secondary simple septa straight to slightly tortuous, binding hyphae or arboriform skeletal hyphae?, hyaline, thick-walled with distinct lumen, irregularly and sparingly branched, 2-5 µm in diameter, not forming dense complexes, but appearing as individual scattered elongated kinked hyphae, both types of vegetative hyphae more or less dextrinoid.
Cystidia none, but sometimes slightly projecting cystidiols are present.
Basidiospores 12-17 (20) x 7-10 (11) µm, abundant, ellipsoid and truncate at the apex, hyaline to golden, thick-walled, weakly to strongly dextrinoid.
Distribution. Cosmopolitan species, noted from all 5 continents.
Remarks. The species can be identified by the small, usually rather thick, ochraceous glabrous pilei and the large truncate spores. The pores are also larger than in most other species in the genus.

Perenniporia paraguyanensis Lira & Gibertoni, in sched.
Basidiocarps perennial, resupinate, 5–12 cm long, 1.5–5.5 cm wide, 1–4 mm thick, strongly adnate to the substrate and hard when dry, pore surface cream, 6–8 pores/mm, round to angular, dissepiments thin and entire; context reduced to a thin layer above the

substrate, less than 1 mm thick, homogeneous and concolorous with the pore surface, tubes thin, stratified and concolorous with the pore surface.
Hyphal system dimitic, generative hyphae hyaline, clamped, but difficult to observe think–walled, 1–2 µm wide and branched, skeletal hyphae hyaline to pale yellow, with 1–2(3) branches, thick–walled, narrow, 1.0–2.3 µm diam., non to strongly dextrinoid, often variable in the same basidiocarp, large and pyramidal crystals present in the trama and hymenium. **Cystidia** absent.
Basidia with 4 sterigmata, clavate with a narrow base, 17–25 × 6–10 µm.
Basidiospores 4.5–5.2 × 3.4–4.7 µm, subglobose to broadly ellipsoid, slightly truncate at the apex, slightly thick-walled, smooth, hyaline, non to weakly dextrinoid.
Remarks. *P. paraguyanensis* is similar to *P. guyanensis*, but the latter has thinner basidiomata (1–1.2 mm), strongly adhering to the substrate and smaller pores.

Perenniporia parvispora C. Decock & Ryvarden,
Mycologia 92:357, 1999.
Basidiocarp seasonal, resupinate, effused, adnate, up to 40 x 20 mm, margin narrow, 200--500 µm wide, white, slightly pruinose under the lens, pore surface even, whitish to pale orange white, pores more or less round, even, ellipsoid elongated on sloped part, (6--)7-8/mm, tube layer non-stratified, up to 500 µm thick, concolorous with the pore surface, or slightly darker (pale greyish orange) with a corky consistency, subiculum absent.
Hyphal system dimitic, generative hyphae with clamps, 2-4 µm wide, branched skeleto-binding hyphae present, hyaline, mostly strongly dextrinoid, thick-walled but with a distinct lumen, from 1.5- 3.0 µm wide.
Basidia not seen.
Basidiospores 3.5-4.0 x 3.0-3.7 µm, ellipsoid to slightly ovoid, apically truncate, thick-walled, 0-1 guttulate, hyaline, non to dextrinoid.
Cystidia absent.
Distribution. Known only from the type locality in Venezuela.
Remarks. The species is characterized by its whitish pores surface, small pores (7--8/mm), small dextrinoid, mostly subglobose basidiospores, in average shorter than 4 µm, and dextrinoid, narrow, skeleto-binding hyphae, often densely intertwined and difficult to separate and easily broken.

Perenniporiella pendula C. Decock & Ryvarden,
Mycol. Res. 107: 99, 2003.
Basidiocarp annual, pileate, solitary or 2-3 pilei laterally fused, pendant, attached by a small discoid base, flabelliform, lobed, up to 22 mm long, 25 mm large, 4-5 mm thick, smooth to faintly concentrically sulcate, glabrous to faintly velutinous (lens), dull, white near the margin, progressively changing to cream coloured, greyish orange to light brown, cinnamon) near the base, with a few very narrow light brown to brick red concentric zone, margin even or lobed, thick, obtuse, white to pale cream, pore surface whitish to pale cream, pores round, 7-(8)/mm, tubes cream to pale greyish orange, up to 1.5 mm long, context homogeneous, 2-3 mm thick, concolorous with the tubes, corky to fibrous, no cuticle present in sections.

Hyphal system dimitic, generative hyphae difficult to observe, with clamps, hyaline, thin-walled, 2-3 µm diam, vegetative hyphae hyaline, non-dextrinoid in the context, weakly to strongly dextrinoid in the trama, slightly swelling in KOH. Context mainly composed of non-branched to sparingly branched vegetative hyphae, straight to sinuous, thick-walled but with a wide lumen, 2.5-4 µm wide, trama mainly composed of more branched arboriform hyphae, 3-8 µm wide thick-walled, straight to sinuous.
Basidia 14-16 x 7-8 µm, tetrasterigmatic.
Basidiospores 4.7-6.0 x 4.2-5.0 µm, subglobose to globose, thick-walled, hyaline, weakly dextrinoid (seen in masses).
Cystidia and **Chlamydospores** absent.
Distribution. Known only from the type locality in Colombia.
Remarks. The species is above all characterised by a pendant basidiocarp, vegetative hyphae being non-dextrinoid in the context, and dextrinoid in the trama of the tubes and subglobose to globose, slightly dextrinoid basidiospores.
P. neofulva differs by having smaller basidiospores and non-dextrinoid vegetative hyphae in the trama. *P. micropora* differs by possessing a thinner, flexible basidiocarp and smaller pores.

Perenniporia roseoisabellina (Pat. & Gaillard) Ryvarden,
Occas. Pap. Farlow Herb. 18:32, 1983. - *Poria roseoisabellina* Pat. & Gaillard, Bull. Soc. Mycol. Fr. 4:35, 1888.
Basidiocarps annual, resupinate, effused, up to 5 mm deep, tough-corky; pore surface isabelline to cafe au lait coloured, pores angular,2-3 per mm, tube layer cork coloured subiculum thin, ochraceous.
Hyphal system dimitic; subicular generative hyphae thin-walled, with clamps, 2-4 µm in diam; subicular skeletal hyphae thick-walled,1.5-3 µm wide, occasionally branched tapering to whip-like ends, not dextrinoid.
Cystidia none.
Basidia not seen.
Basidiospores 7-9 x 5- 7 µm, truncate, thick-walled, smooth, hyaline, dextrinoid.
Distribution. Known only from the type locality at Puerto Zamuro in Venezuela.
Remarks. The species is characterized by the large subglobose, but still truncate thick walled dextrinoid spores, the resupinate basidiocarp and the large angular pores.

Perenniporia sinuosa Ryvarden,
Mycotaxon 28:535, 1987.
Basidiocarps annual, resupinate to nodulose, effused, separable, 10 x 6 cm in the holotype, up to 8 mm thick measured vertically, rather light of consistency and friable, pore surface cream to ochraceous, pores angular, 2-3 per mm on horizontal parts of the basidiocarps, sinuous and split on sloping parts, tube layers concolorous, context very thin to almost absent, ochraceous.
Hyphal system dimitic; generative hyphae thin-walled, nodose-septate, 2-4 µm in diam; skeletal hyphae thick-walled, 2-3 µm in diam; straight to sinuous, occasionally dichotomously branched, strongly dextrinoid in Melzer's reagent.
Cystidia none.

Basidia not seen.
Basidiospores 11-13 x 7-8 µm, subglobose to truncate, thick-walled, smooth, hyaline, dextrinoid.
Distribution. Known from the type locality in Brazil ad Guyana.
Remarks. The species is characterized by the large thick walled dextrinoid spores, the resupinate to nodulose basidiocarp and the large, angular to sinuous pores.

Perenniporia sprucei Decock & Ryvarden,
Mycologia 91:388, 1999.
Basidiocarp pileate, up to 30 mm wide (base to margin) and 10-12 mm thick at the base, pileus semicircular, applanate, slightly convex, azonate, slightly to distinctly warted, warts round to elongated, dull, main colour cream to greyish orange, turning light brown to brown , margin acute, thin, regular, cream , pore surface greyish cream, pores round, regular, 7-9/mm, Dissepiment entire, context up to 7 mm thick at the base, woody, greyish orange to light brownish orange, with a thin, dense, clearer band separating the tubes from the context, tube up to 3 mm thick, brownish-orange to light brown, pileus surface "hymeniderm", composed of a palisade of cylindrical to slightly clavate cells, thin to slightly thick-walled, hyaline, agglutinated.
Hyphal system dimitic, generative hyphae hyaline, thin-walled, clamped, 3-5 µm wide, vegetative hyphae hyaline to pale yellowish in KOH, non to slightly dextrinoid (in mass), slightly swelling in KOH, skeletal hyphae arboriform with intercalary skeletal hyphae 2.3-4.7 µm wide apical branching coralloid-like.
Basidia not seen.
Basidiospores 7.0-9.5 x 4-5.5 µm, ellipsoid to ovoid elongated, sometime with an apical constriction (bottle-like), with a truncate apex, thick-walled, slightly to strongly dextrinoid.
Chlamydospores numerous in the context and dissepiments, globose, elliptical, terminal or intercalate (bi-apiculate), thick-walled, dextrinoid.
Distribution. Hitherto known only from the type locality in Brazil
Remarks. *P. sprucei* is separated from *P. detrita* by smaller basidiospores and a different hyphal system. The construction of the dissepiments with tortuous and densely interwoven arboriform skeletal hyphae with numerous coralloid-like short processes is remarkable for the species. A notable feature is also the development of a hymenoderm on the surface of the pileus made of slightly clavate, agglutinated, thin- to thick-walled cells. *P. isabellina* has a similar hyphal system and similar basidiospores, but has a completely resupinate basidiocarp.

Perenniporia stipitata Ryvarden,
Mycotaxon 28:535, 1987.
Basidiocarps laterally stipitate, pileus semicircular to flabelliform or spatulate, up to 15 mm wide and long and 1-2 mm thick, decurrent part up to 10 cm, coriaceous; pileus surface finely zonate, smooth, glabrous, ochraceous to pale brown, pore surface pale isabelline or wood-coloured, pores minute, scarcely visible to the naked eye, 8-10 per mm; tubes isabelline 1 mm deep; context concolorous, 1 mm thick.

Hyphal system dimitic, generative hyphae with clamps, thin-walled, hyaline and 2-3 µm wide, skeletal hyphae flexuous, unbranched to rarely dichotomously branched, solid to thick-walled and strongly dextrinoid, 3-7 µm wide.
Cystidia or other sterile hymenial elements absent.
Basidia not seen.
Basidiospores 5-6 x 3-4 µm, subglobose to truncate, hyaline, thick-walled and dextrinoid.
Distribution. Brazil, Colombia, Trinidad and Panama and will probably be found to have a wide distribution in the neotropics.
Remarks. The species is recognized by its stipitate basidiocarp and the minute pores.

Perenniporia subannosa (Bres.) Decock, Herrera & Ryvarden,
Mycologia 93:199, 2001. – *Fomes subannosus* Bres., Stud. Trent II, 7:5, 1926.
Basidiocarp perennial, pileate to broadly effused-reflexed, pileus solitary, or laterally fused, applanate, flabelliform to semicircular to broadly attached, up to 40 mm long, 68 mm wide, from 8-23 mm thick at the base to 1-3 mm at the margin, dull, faintly to distinctly concentrically zonate, cream to greyish orange to brown cinnamon) to more dark or reddish brown near the base, leather, cocoa, with the development of a crust, concentrically sulcate with narrow to large, faint to sharp or rough growing zone, occasionally slightly radially cracked leaving the cream context visible, smooth or slightly glabrous or slightly voluminous at first, soon glabrous, margin thin, acute, regular, enrolled on drying or not, dark "café au lait" to light brown, pore surface whitish to cream to pale greyish orange, pores round, regular, (5-)6-8 per mm, context thin, 1.3-3 mm thick at the base, occasionally with a thin layer between 2 tubes layers, pale cream to cream, with a hard corky consistency, a fibrous (cottony) texture, velutinous on touch, tubes distinctly stratified, up to 6 layers, 0.75-1.2 mm each, up to 7--8 mm in total, locally with a very thin intercalate layer of context, cream coloured , cuticle slightly glossy, dark brown, 100--200 µm thick.
Hyphal system dimitic, generative hyphae difficult to find, clamped, hyaline, thin-walled, 2-3 µm wide, vegetative hyphae hyaline to faintly yellowish near the cuticle, strongly dextrinoid, KOH, 2.5-4.5 µm wide in the larger part
Basidia not seen.
Basidiospores 3.5-4.5 x 2.7-3.8 µm, ellipsoid to ovoid, often angular to almost cylindrical, with a rounded or flattened apex, regularly thick-walled, 0--1 oil drops, hyaline, non dextrinoid.
Distribution. Known from Brazil, French Antilles, Peru and Nicaragua.
Remarks. *Perenniporia subannosa* differs from *P. contraria* by larger pores (4-5/mm and 6-8/mm, respectively).

Perenniporia subovoidea Decock & Ryvarden,
Plant Ecol. Evol. 146:234, 2013.
Basidiocarps resupinate, effused, adnate, 40 × 30 mm in the type, up to 4(–5) mm thick; pores surface mostly white, whitish, but in places, cork-coloured; pores mostly round, regular, (6–)7 / mm, entire, 45–110 µm thick, tubes 1–4 mm deep, whitish to greyish orange, cork-coloured, greyish orange, with a hard, horny consistency when dry; context

less than 0.5 mm thick, mostly whitish faintly to yellowish white, contrasting with the tube layer.
Hyphal system dimitic, generative hyphae with clamps, hyaline, 1.5–2.5 µm wide; vegetative hyphae mostly of the skeleto-binding type, hyaline, non-dextrinoid, 3.5–4.5 µm diam.
Basidia clavate.
Basidiospores 7.5–10 × 4.5–6.5 µm, ovoid to oblong ellipsoid, truncate, thick-walled, hyaline and strongly dextrinoid
Distribution. So far known from Costa Rica only.
Remarks. *Perenniporia subovoidea* is characterized by the combination of a resupinate, basidiocarp, white pore surface, 6–7 pores / mm, arboriform, non-dextrinoid skeleto-binding hyphae and ovoid-elongated, strongly dextrinoid basidiospores. *P. subovoidea* can be compared to *P. isabellina* and *P. chromatica, w*hich both have a similar hyphal system with distinctly arboriform skeleto-binding hyphae. The former differs in having larger pores (3–4 / mm) and larger basidiospores [11–13×6.5–7.5 µm. P. *chromatica* differs in having a yellow pore surface when fresh, larger pores (4–5 / mm), and smaller, more globose basidiospores 5.5–7 × 4–6 µm. *Perenniporia sprucei* has similar skeleto-binding hyphae and basidiospores. It differs in having pileate basidiocarps.

Perenniporia tepeitensis (Murrill) Ryvarden,
Mycotaxon 23:174, 1985. - *Coriolus tepeitensis* Murrill, Bull. New York Bot. Gard. 8:142, 1912.
Basidiocarps pileate, annual, effused reflexed, up to 5 mm wide and 10 cm long, 1-3 mm thick, decurrent part up to 10 cm, coriaceous; pileus surface azonate, smooth, glabrous and white to cream, margin white and narrow; pore surface white, pale isabelline or cream, pores round to angular, 4-5 per mm; tubes cream, up to 2 mm deep; context concolorous, 1 mm thick.
Hyphal system dimitic, generative hyphae with clamps, thin-walled, hyaline and 2-3 µm wide, skeletal hyphae flexuous, unbranched to rarely dichotomously branched, solid to thick-walled and slightly dextrinoid, 1.5-3 µm wide.
Cystidia or other sterile hymenial elements absent.
Basidia not seen.
Basidiospores 5.5-7 x 5-6.5 µm, globose to subglobose, hyaline, thick-walled and weakly dextrinoid.
Distribution. United States, Mexico and Costa Rica.
Remarks. The species is recognized by its pileate condition and the almost globose, thick-walled and slightly dextrinoid spores.

Perenniporia tephropora (Mont.) Ryvarden,
Norw. J. Bot. 19:233, 1972. - *Polyporus tephroporus* Mont., Ann. Sci. Nat. Ser 3 vol. 4:358, 1845.
Basidiocarps perennial, usually more or less resupinate or with a small, obliquely reflexed dark portion up to 1 cm broad, very often on vertical or almost vertical surface, effused, forming irregular areas up to 20 x 8 cm, consistency woody hard; pileus, if present, slightly developed, the reflexed portion very finely tomentose to glabrous, dirty

greyish to black, often somewhat cracked and sulcate, in section with a dark crust, margin thick and round; pore surface clay, buff or grey to milky coffee or pale umber, pores round to angular, 4-6 per mm, dissepiments thin to fairly thick, entire and farinose; tubes distinctly stratified, each strata 2-4 mm thick; sterile margin thinning out, up to 3 mm broad; context 0.5-2 mm thick, snuff brown to even dark brown, blackening in KOH.
Hyphal system trimitic, generative hyphae thin-walled, often collapsed, with clamps, hyaline and thin-walled, 2-4 µm in diam; skeletal hyphae abundant, thick-walled with a distinct lumen, ochraceous to pale brown, becoming pale olive in KOH, straight to slightly flexuous, 3-5.5 µm in diam, wider in KOH, often with secondary simple septa; binding hyphae rather rare, thin to thick-walled, not dominating, hyaline to pale yellowish, 1.5-3.5 µm in diam, moderately branched, tapering towards the ends; both types of vegetative hyphae dextrinoid to a variable degree.
Cystidia or other sterile hymenial elements absent.
Basidia 12-15 x 4-6 µm, clavate, 4 sterigmata, with a basal clamp.
Basidiospores 4.5-6 x 3.5-4.5 µm, ellipsoid to truncate, thick-walled, hyaline to slightly yellowish, dextrinoid.
Distribution. Pantropical species.
Remarks. The greyish to dark ochraceous or clay- coloured pore surface immediately distinguishes this species from all other species with resupinate basidiocarps treated in this manual.

Perenniporia xantha C. Decock and Ryvarden, Mycol. Res. 103:1139, 1999.
Basidiocarps annual, completely resupinate, effused, with a distinct margin, adnate, thin, up to 1 mm thick, margin fibrillate, cream to pale yellow, up to 1.5 mm wide, pore surface even, yellow to greyish orange to brownish yellow when dry, "yellowish" coloured when fresh, turning light brown to cinnamon brown on bruising, pores regular, round to slightly angular, 6-7/mm, dissepiments thin, entire, slightly pruinose, 25-40 µm thick, subiculum thin to almost absent, pale yellowish, up to 100 µm thick.
Hyphal system dimitic, generative hyphae thin to slightly thick-walled, with clamps, 2-4 µm in diam, context monomitic composed of thin to commonly thick-walled, few branched generative hyphae, not dextrinoid, in sub-parallel orientation, µm wide, trama dimitic, slightly incrusted, incrustation turning pinkish to violet in KOH, vegetative hyphae few, arboriform-like, not dextrinoid, 22-54 µm long, 2-4 µm wide at the upper part, with local swelling up to 5, bearing several 1-5 lateral sub-apical or apical processes, short, straight to tortuous, up to 45 µm long, narrow, 1-1.5 µm in diam.
Basidia 12.5-16 x 7-8 µm, pedunculate to pear shaped, with four sterigmata.
Basidiospores 5.0-6.5 x 3.2-4.4 µm, ellipsoid to slightly ovoid, truncate, thick-walled, not to slightly dextrinoid.
Dendrohyphidia present in the mouth of the dissepiments, thin-walled, hyaline, up to 35 µm long.
Substrata. On bark of decaying hard wood twig on ground, partly on old basidiocarps of *Hymenochaete* sp.
Distribution. Known only from French Guyana in moist forest.
Remarks. The yellow pore surface, the small pores and spores characterize this species.

Phaeolus (Pat.) Pat.,

Essai Taxon. Hym., p. 86. 1900.

Basidiocarps annual, sessile to stipitate; upper surface orange at first, becoming brown, strigose to fibrillose; pore surface orange to greenish brown, pores daedaleoid to circular, up to 2 mm in diam; context orange to brown, fibrous to spongy; hyphal system monomitic; contextual hyphae simple-septate, thin- to thick-walled; cystidia cylindrical, thin-walled, not incrusted; gloeoplerous hyphae also present in hymenium; basidia clavate, simple-septate at the base; basidiospores ellipsoid to cylindrical, hyaline, smooth, IKI-, causes a brown cubical rot both in hard woods and conifers. Cosmopolitan genus.

Type species: *Phaeolus schweinitzii* (Fr.) Pat.

Remarks. The type species is widespread, but rare in the tropical zones. It may easily be mistaken for an *Inonotus* species with its brown basidiocarp and simple septate hyphae. However, the brown rot and presence of cystidia will immediately exclude this genus.

Key to species

1. Basidiocarps usually large and massive, over 10 cm in diameter, spores 6-9 µm long, cystidia rather common ..... **P. schweinitzii**
1. Basidiocarps small, less than 5 cm in diameter, spores 5-6 µm long, cystidia rare .... **P. amazonica**

Phaeolus amazonicus De Jesus & Ryvarden,

Synopsis Fung. 27:73, 2010.

Basidiocarps annual, laterally stipitate on the ground from roots (?), stipe lateral, short and stout and tapering towards the base, up to 4 cm long and 2 cm in diam, pale yellowish brown; pileus circular to slightly spatulate, up to 6 cm long, 5 cm wide and 1 cm thick, rather soft, pale yellowish brown becoming patch wise brown when the upper hyphae agglutinate by age, but no cuticle as such, slightly tuberculate, glabrous and azonate, pore surface yellowish brown becoming darker where touched and finally light brown when dry, pores thin-walled, round to angular, 2-4 per mm, tubes up 3 mm deep, pale yellowish brown, context fibrous and dense, whitish yellow becoming red with KOH, up to 6 mm thick; tube layer decurrent, distinct from context, greenish to rusty brown, up to 1.5 cm thick.

Hyphal system dimitic; contextual hyphae dark brown to yellowish-brown in KOH, thin- to thick-walled, simple-septate, 3-6 µm in diam, skeletal hyphae (?) present, thick-walled and dark brown, apparently without septa.

Cystidia only one single seen, 60 x 12 µm pale brown, smooth and clavate.

Basidia 18-20 x 5-7 µm 4-sterigmate.

Basidiospores 5-6 x 4-4.3 µm, ellipsoid to ovoid, hyaline, smooth, negative in Melzer's reagent.

Substrata. Probably on the ground, no information on label.

Distribution. Known only from the type locality in Amazonas, Brazil.

Remarks. Superficially this species looks like an *Inonotus* species even if the light yellowish context is unusual in the genus. To ascertain its status it was sequenced and it

was clear that the species do not belong in Hymenochaetaceae. The only alternative is then *Phaeolus* given the colour, the partly stipitate basidiocarps and the simple septate generative hyphae. Even if the characteristic cystidia seen in *P. schweinitzii* (the type species) are missing, it seems for the time being better to keep it in *Phaeolus* until more specimens will be found.

Phaeolus schweinitzii (Fr.) Pat.,
Ess. Taxon. Hym., p. 86. 1900. - *Polyporus schweinitzii* Fr., Syst. Mycol. 1:351. 1821.
Basidiocarps annual, stipitate on the ground from roots or occasionally effused-reflexed or sessile on the base of living trees, stumps or logs; stipe central or lateral, short and stout, simple or branched, up to 5 cm in diam; pilei solitary or imbricate, circular or irregularly lobed, up to 25 cm in diam; upper surface orange at first, becoming yellowish-brown at maturity, drying to dark reddish-brown, tomentose to hirsute, faintly zonate; pore surface orange at first, becoming greenish- brown, then yellowish brown to rusty brown with age, the pores angular, 1-2 per mm, dissepiments thick, becoming lacerate; context yellowish-brown, becoming dark rusty brown with age, soft-fibrous, azonate, up to 1.5 cm thick; tube layer decurrent, distinct from context, greenish to rusty brown, up to 1.5 cm thick.
Hyphal system monomitic; contextual hyphae dark brown to yellowish-brown in KOH, thin-walled, simple-septate, 3-17 µm in diam, some with frequent branching.
Cystidia frequent, yellowish, cylindrical, not incrusted, 20-90x7-13 µm, projecting up to 75 µm; slender gloeoplerous hyphae with dark brownish contents present in the hymenium, 3-6 µm in diam.
Basidia 20-25 x7-8 µm, clavate.
Basidiospores 6-9 x 2.5-5 µm ellipsoid to ovoid, hyaline, smooth, IKI-,
Substrata. In the boreal and temperate zone usually at the base of living conifers or on stumps, in the tropical zones on different hard woods.
Distribution. Cosmopolitan species, but much more common in the conifer zone than in the other vegetation zones. Distribution in the neotropics unknown.
Remarks. *Phaeolus schweinitzii* remind one in the field of a species in the Hymenochaetaceae because of the dark rusty brown colour of mature basidiocarps and a darkening reaction in KOH. However, it is a brown rot fungus and has cystidia, which indicate that it is not related to this family.

Physisporinus P. Karst.,

Basidiocarps resupinate, annual, soft to ceraceous, often changing colour on bruising or drying; hyphal system monomitic; generative hyphae with clamps or simple septa; cystidia not present; spores globose to ovoid, negative in Melzer's reagent. Causes a white rot in rotten wood, one species in tropical America.
Type species: *Polyporus vitreus* Pers.:Fr.
Remarks. *P. sanguinolentus* has thin ephemeral basidiocarps, quite different from that of *Rigidoporus* species which has similar spores and hyphae. Thus, their microscopical similarity is superficial.

Physisporinus sanguinolentus (Alb. & Schwein.:Fr.) Pilat,
Atlas Champ. Europe 3:247, 1940. - *Boletus sanguinolentus* Alb. & Schwein., Consp. Fung., p. 257, 1805. - *Polyporus sanguinolentus* Alb. & Schwein.:Fr., Syst. Mycol.. 1:383, 1821.
Basidiocarps annual or reviving a second year, effused up to 20 cm, soft to tough, cartilaginous and crisp when fresh, drying rigid, readily separable; margin fertile or narrowly sterile, then drying pale tan, fimbriate, up to 1 mm wide; pore surface white or ivory when fresh, quickly showing bright rusty red blotches after collecting, eventually becoming brown, greyish to blackish on drying, the pores circular to angular, 8-10 per mm, with thick, entire dissepiments; context white when fresh, pale tan when dried, cartilaginous, less than 1 mm thick; tube layer ivory to pale tan, brittle when dry, up to 5 mm thick; taste mild.
Hyphal system monomitic, all hyphae simple-septate; subicular hyphae hyaline in KOH, agglutinated and not easily separable on drying, rarely branched, thick- to thin-walled, , 3.5-6.5 µm in diam; tramal hyphae similar, 2-4 µm in diam.
Cystidia none; fusoid cystidiols present, 15-27 x 5-6 µm, simple-septate at the base.
Basidia 12-23 x 6.5-8 µm, broadly clavate, 4-sterigmate, simple-septate at the base.
Basidiospores 6-7 x 5-6 µm ovoid to subglobose, hyaline, smooth, negative in Melzer's reagent,.
Substrata. Dead wood of conifers and hardwoods besides debris of ferns.
Distribution. Scattered and specimens have been seen from Costa Rica, Venezuela and Brazil. Because of the dark colour when dry, it is easily overlooked. Circumpolar in the boreal- temperate forest zone.
Remarks. The distinctive colour change by bruising and after collecting, facilitates identification of *P. sanguinolentus* in the field.

Piloporia Niemelä,

Karstenia 22:13, 1982.

Basidiocarps pileate, effused-reflexed to resupinate; upper surface tomentose, dark brown; pore surface whitish to cork-coloured; tubes concolorous; context duplex with a black line separating the lower cork-coloured part from the upper rusty brown part; hyphal system dimitic; generative hyphae with clamps; skeletal hyphae hyaline to brown in upper part of context, finely encrusted in the dissepiments; cystidia none; basidiospores allantoid, hyaline, thin-walled and negative in Melzer's reagent; causing a white rot in conifers and hardwoods, small genus with two species one of which is pantropical species.

Type species: *Antrodia sajanensis* Parmasto.

Remarks. The genus has characters from *Datronia* by its typical duplex consistency with a black line in the subiculum or context, but has far smaller spores than seen in this genus. *Skeletocutis* is probably the closest relative sharing the same small allantoid spores and the encrusted skeletal hyphae. The duplex consistency described above is, however, unknown in this genus.

Piloporia albomarginata (Lév.) Nunez,

Mycotaxon 68: 288, 1998. - *Polyporus albomarginatus* Lév., Ann. Sci. Nat. Ser. 3, Vol. 2:191. 1844.

Basidiocarps annual to perennial, effused-reflexed and orbicular to distinctly pileate and then mostly imbricate, elongated, semicircular to dimidiate, up to 8 cm wide to 20 cm long in laterally fused specimens, 2-4 cm thick at the base, coriaceous to hard when dry, pileus surface first reddish golden, azonate to zonate with a few slightly sulcate zones, appressed velutinate or slightly scrupose, with age the upper tomentum is agglutinated and a distinct dark brown to black cuticle is developed, margin often paler than the inner parts of the pileus, pore surface pale orange, glancing when turned in incident light, with age and in old specimens brick-red with brownish tints, in old basidiocarps the pore surface frequently recedes, leaving zones of sterile areas along the margin, pores 4-5 per mm, angular, tubes whitish, single-layered to stratified, single layers up to 3 mm thick, together up to 1.5 cm long, dissepiments farinose, context bright orange to brick-red, dense with age, more soft in the upper part in young specimens, frequently with thin, black lines reflecting earlier growth, purplish with KOH.

Hyphal system dimitic, generative hyphae with clamps, hyaline and 2-4 µm wide, often difficult to find, skeletal hyphae reddish brown, distinctly more cherry-red when mounted in KOH, thick-walled to solid, straight, up to 6 µm wide, in the trama parallel and more thin-walled than in the context where they are randomly oriented.

Cystidia absent; hyphoid cystidiols common in the tubes in sterile specimens.

Basidia 6-8 x 2.5-3.5 µm, clavate, 4-sterigmate.

Basidiospores 3-4 x 0.5-0.8 µm, allantoid, hyaline, smooth and difficult to find.

Distribution. Pantropical, but rare in tropical America.

Remarks. The species is easy to recognize because of the reddish to orange colours, especially in the context.

Piptoporus P. Karst.,

Medd. Soc. Fauna Flora Fenn. 6:9, 1881.

Basidiocarps annual, pileate, dimidiate to broadly attached, often substipitate or with a narrowed base, light in weight when dry; pilei applanate, dimidiate or reniform; upper surface with or without a thin, papery cuticle, white to ochraceous salmon or pale brownish, azonate; pore surface white to pale buff, pores regular, 3-6 per mm; context white to pinkish buff, azonate, soft-fibrous, spongy to corky when dry; hyphal system di-trimitic; generative hyphae with clamps; skeletal hyphae sinuous or straight, persistent or dissolving in KOH; basidiospores cylindrical or ellipsoid, hyaline, smooth, negative in Melzer's reagent. Causing brown rot of dead hardwoods.

Type species: *Polyporus betulinus* Bull.: Fr.

Remarks. The genus is characterized by its dimitic hyphal system correlated with a brown rot. The hyphal system is close to that of *Polyporus*, some species of which also have fanshaped basidiocarps, but they all have a white rot. For the time being, only one species is reported from the neotropics.

Piptoporus americanus Ryvarden comb nov.,

Basionym: *Buglossoporus americanus* D. A. Reid, Mem. New York Bot. Gard, 28:179, 1976. Index Fungorum no 552564.

Basidiocarps annual, effused reflexed with smaller spatulate pilei, up to 4 cm wide and long, up to 5 mm thick at base, pileus chocolate brown, minutely velutinate, pores circular to angular, 4-5 µm per mm, with thin fimbriate dissepiments; pore surface greyish ochraceous, tubes 1 mm long, concolorous with pore surface, context up to 55 mm thick, soft and cheesy and light of weight when dried, but may be watery when fresh.

Hyphal system rudimentary dimitic; contextual generative hyphae thin to slightly thin walled with clamps, up to 8 µm wide, gloeopleurous hyphae present with brownish content more thick walled and refractive hyphae also present, in the dissepiment generative hyphae up to 3 µm wide, skeletal hyphae also present up to 5 µm wide.

Cystidia or other sterile hymenial elements absent.

Basidia 10-15x 3-5 µm, clavate, tetrasterigmatic.

Basidiospores 3.2-4.0 x 1.2-1.5 µm, cylindrical to almost allantoid, hyaline, smooth, negative in Melzer's reagent.

Substrata. On dead hardwood.

Distribution. Known only from Costa Rica.

Remarks. This species are characteristic by its small cylindrical spores and coloured gloeopleurous hyphae in the trama and context.

Polyporoletus Snell,

Mycologia 28:467. 1936.

Basidiocarps annual, terrestrial, centrally to laterally stipitate; pileus circular to reniform or lobate; pilear surface tomentose-fibrillose to glabrous, purplish gray to pale buff, darkening on drying; pore surface yellowish tan to pinkish buff, becoming pale olivaceous on dried specimens, the pores circular to angular, 1 -2 per mm; tubes decurrent on stipe; context pale pinkish buff, azonate; hyphal system monomitic; hyphae with clamps and simple septa; basidia clavate, 4-sterigmate; cystidia absent; basidiospores globose to subglobose, with a double wall separated by interwall pillars or partitions, hyaline, appearing slightly rough, negative in Melzer's reagent. Small genus with two species, restricted to America. Type of rot unknown, possibly mycorrhizal.

Type species: *Polyporoletus sublividus* Snell.

Remarks. *Polyporoletus* is probably phylogenetically near *Albatrellus*, but is distinguished by its unique basidiospores, quite unlike those of any other polypore.

Polyporoletus neotropicus M. Mata & Ryvarden,

Synopsis Fung. 23:54, 2007.

Basidiocarps annual, centrally stipitate, terrestrial; pileus solitary, circular, about 10 cm in diameter and 1 cm thick; pileus surface glabrous and sub-shiny, evenly brown with some paler spots, smooth when fresh, wrinkled concentrically after drying, pore surface brown, pores circular to angular, variable in size, mostly 1-2 per mm but some up to 2 x 1 mm and elongated radially, tube walls thin and wavy, tubes concolorous up to 5 mm deep and fragile, context white and strongly contrasting with the tubes, in the centre up to 5 mm thick, probably soft when fresh, hard when dry, but easily indented with a nail,

Stipe cylindrical, pale brown and almost grey-ochraceous towards the pileus, slightly widened towards the base, dull and with a very fine adpressed cover of fine fibres (hand lens), 6 cm high and up to 1 cm in diameter towards the base, context as in the pileus.

Hyphal system monomitic; contextual hyphae mostly hyaline, thin-walled, with clamps and simple septa, with occasional branching, 5-10 µm in diam; also some larger hyphae with unevenly thickened walls, up to 20 µm in diam; tramal hyphae thin-walled, 2.5-5 µm in diam, with clamps; gloeoplerous hyphae also present in trama, 5-15 µm wide, dark in KOH and not reacting in Melzer's reagent.

Cystidia absent.

Basidia clavate, 30-45 x 11-14 µm, with a basal clamp and 4 sterigmata, up to 6 µm long.

Basidiospores subglobose to broadly ellipsoid, 8-10 x 7-8 µm, hyaline, appearing slightly rough, with a double wall with vesicles or small lacunae separated by interwall pillars or partitions, negative in Melzer's reagent, with a large spherical drop.

Substrata. On the ground in a tropical forest.

Distribution. Known only from the type locality at San Jose in Costa Rica.

Remarks. *Polyporoletus neotropicus* is undoubtedly close to *P. sublividus* from United States, sharing above all the unique spores with the internal vesicles or lacunae in the spore walls.

Polyporus Fr.,

Syst. Mycol. 1:134. 1821.

Basidiocarps annual or biannual, centrally to laterally stipitate or substipitate, pileus circular to dimidiate, convex to infundibuliform, smooth to scaly, glabrous to finely tomentose, white to deep brown or black, tough when fresh, leathery or brittle when dry, pore surface white to cream, or dark brown when dry, pores entire, round to angular, small to large, decurrent or not on the stipe, context white to light brown, stipe cream to black, glabrous to finely tomentose, with or without cuticle, smooth to longitudinally wrinkled, in some species arising from a sclerotium, in other cases transformed into rhizomorphs. Hyphal system dimitic, generative hyphae hyaline, mainly with clamps, two species with simple septa, in the pileus and stipe surfaces the generative hyphae are brown, thick-walled, forming either a palisade or a cutis, skeleto binding hyphae hyaline to brown, solid or with a lumen, cystidia none, cystidiols in one species, hyphal pegs present or absent, basidia clavate, 4-sterigmate, basidiospores cylindrical to ellipsoid, straight to slightly bent, thin-walled, smooth, hyaline and negative in Melzer's reagent.

On living and dead hardwoods, rarely on conifers, or developing from sclerotia buried on the ground or immersed in the wood with a white rot. Cosmopolitan genus.

Type species: *Polyporus tuberaster* Jaq.:Fr.

Remarks. The genus is circumscribed here in a rather wide sense, although many authors in the later years have accepted the infrageneric groups mentioned below as genera. It is quite well defined by the centrally to laterally stipitate basidiocarps and the dimitic hyphal system with arboriform binding hyphae of a type often called skeleto binding hyphae to separate them from the tortuous binding hyphae seen in *Trametes* and related genera. *Dichomitus* may be related, separated in principle only by its sessile to resupinate basidiocarps and slightly different vegetative hyphae.

The genus has been split into smaller groups out of which the following is present in the neotropics. Some of the groups have been given rank of genera and their type species is indicated in parentheses.

Polyporus Fr., s. str. (*P. tuberaster*). The group is characterized by its large spores and a fleshy consistency of the basidiocarps.

Melanopus Pat. (*P. melanopus*) The group is characterized by a black to deep brown, smooth to velutinate stipe and a coriaceous consistency of the basidiocarp

Polyporellus P. Karst. (*P. brumalis*) The group has centrally stipitate basidiocarps, a stipe without a black cuticle and relatively short spores.

Favolus Fr. (*P. tenuiculus*). The basidiocarps are flabelliform.

Key to the groups and species

1. Basidiocarps fleshy, more than 1 cm thick group ..... **Polyporus**
1. Basidiocarps leathery, up to 1 cm thick, with or without a black cuticle at least on the stipe basis **2**

2. Basidiocarps with a black cuticle at least on the stipe basis group ..... **Melanopus**

2. Basidiocarps without a black, endured cuticle on the stipe (a thin cuticle may be present in old specimens) **3**

3. Basidiocarps centrally stipitate group ..... **Leucoporus**
3. Basidiocarps laterally stipitate group ..... **Favolus**

Group Polyporus

1. Basidiocarp developing from a buried sclerotium **2**
1. Basidiocarp growing on dead wood **3**

2. Surface cream, glabrous; pores 3-4 per mm; spores 5-6 x 3.5-4 µm ..... **P. indigenus**
2. Surface scaly, cream to brown by drying; pores 1-2 per mm; spores 9-11 x 4-5 µm ..... **P. sapurema**

3. Context up to 1 cm thick; pileus with rose to purple tints ..... **P. udus**
3. Context up to 4 mm thick; pileus ochraceous to deep tan ..... **P. craterellus**

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

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

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

4. Pileus velutinate ..... **P. nigrovelutinus**
4. Pileus glabrous **5**

5. Pileus infundibuliform; spores 9-12.5 5 um long **6**
5. Pileus mostly applanate; spores shorter than 9 um **7**

6. Pileus striate pale brown becoming chestnut; pores 2-4 per mm; spores 9-12 x 4-5 um ..... **P. virgatus**
6. 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 um ..... **P. puttemansii**

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

Group Leucoporus

1.Basidiocarps evenly cinnamon brown, chlamydospores present ..... **P coltricioides**
1. Basidiocarps differently coloured, chlamydospores absent **2**

2. Less than 4 pores per mm; pileus pale brown, often discoloured in patches..... ..... **P. arcularius**
2. More than 4 pores per mm **3**

3. Pileus white to cream with marginal cilia ..... **P. tricholoma**
3. Pileus pale brown, margin almost without cilia ..... **P. ciliatus**

Group Favolus

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

2. Pileus white when fresh, darker when dry **3**
2. Pileus leather coloured, orange to brown, radially striate or with small hydnoid processes or squamules, at least at the base; spores shorter than 9 µm **4**

3. Pileus laterally tapering, tessellate to smooth, pores large and irregular; spores 9-12 um long, common species ..... **P. tenuiculus**
3. Pileus smooth, stipe distinct, pores small, 6-7 per mm, spores 6-7 µm long. **P. albostipes**

4. Pores 2-5 per mm 5
4. Pores 1-2 per mm or larger 7

5. Pileus pale reddish brown with minute black squamules ..... **P. minutosquamosus**
5. Pileus differently coloured and without dark squamules, but often with radial lines **6**

6. Pileus vinaceous to pale brown, smooth; pores consistently round; spores 5-6 µm long . ..... **P. ianthinus**
6. Pileus ochraceous, smooth or with minute hyphal tufts at base; pores often slightly elongated; spores 6-8 µm long..... **P. grammocephalus**

7. Pores 1-2 per mm, angular; pileus cream to tan, smooth, but often with radial lines..... ..... **P. philippinensis**
7. Pores elongated 2-4 x 0.5-0.7 mm; pileus whitish with hydnoid protuberances .... **P. biskeletalis**

NB. The spores of all species are smooth, thin walled and non-amyloid, thus, this information is not repeated for each species. Further, since hard woods is the totally dominant hosts for all species, this is not indicated unless other substrates are involved.

Description of species

Polyporus albostipes Ryvarden & Iturriaga,
Mycologia 95:1071, 2003.
Basidiocarp annual, growing in a cluster, laterally stipitate, pileus round to slightly spatulate, up to 6 cm wide and long, 2-4 mm thick, soft when fresh, flexible when dry, upper surface white, drying very pale ochraceous, smooth, glabrous, dull, azonate, margin sharp and wavy, pore surface white drying ochraceous, pores round, 6-7 per mm, tubes up to 2 mm deep and white to pale cream, context white and dense, up to 2 mm thick at the base.
Stipe white, round, glabrous and smooth, up to 3 cm long and 4 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 mm.
Basidiospores cylindrical, hyaline, IKI-, 6-7 x 2-2.2 mm.
Distribution. Known from the type locality in Venezuela and the Dominican republic.
Remarks. This is a conspicuous species by the clustered laterally stipitate whitish basidiocarps where the stipe even in dry condition is white contrasting the distinct ochraceous pore surface. The closest relative seems to be *P. grammocephalus* Berk., which however has radial veins or lines on a darker pileus and wider basidiospores (2.5-3 mm wide).

Polyporus arcularius Batsch: Fr.,
Syst. Mycol. 1:342, 1821. - *Boletus arcularius* Batsch, Elench. Fung., p. 97, 1783.
Basidiocarps. annual, centrally stipitate; pilei circular, solitary, up to 2.5 cm in diam and 3 mm thick; surface of the pileus straw-coloured to dark brown, azonate, glabrous, smooth to squamulose; margin ciliate, acute, sterile below; pore surface cream coloured to buff, dull, rough, the pores large, hexagonal, radially aligned, 1-2 per mm, the dissepiments thin, becoming lacerate; context whitish to buff, azonate, tough, less than 1 mm thick; tube layer concolorous and continuous with context, up to 2 mm thick; stipe central, concolorous with pileus, glabrous, up to 3.5 cm long and 0.4 cm thick
Hyphal system dimitic; generative hyphae hyaline, thin-walled, often branched, with abundant clamps, 2.5-5 µm in diam; skeleto-binding hyphae thick-walled with dendroid branching to tapering with narrow tips, 2-11 µm in diam; hyphae on pileus surface slender, thin-walled, with clamps, 1-1.5 µm in diam; tramal hyphae similar, not readily separable.
Basidia 25-35 x 5-6 µm, clavate, 4-sterigmate, with a basal clamp.
Basidiospores 7-9 x 2.5-3 µm, cylindrical, straight or slightly curved.
Distribution. Cosmopolitan species except in north temperate zone.
Remarks. The large, radially elongated pores are the distinguishing feature of *P. arcularius.*

Polyporus biskeletalis Corner,
Beiheft Nova Hedw. 78:57, 1984.
Basidiocarps annual, pileus flabelliform to spatulate, up to 4 cm in radius, 4 mm thick, upper surface white then pale ochraceous to beige, covered with minute conical or flattened erect hydnoid processes up to 6 mm long, becoming more crowded towards the margin, lateral stipe whitish to sand coloured without a black base, 5-9 x 3-4 mm densely villose to semi hispid, pore surface whitish with large elongated pores, 2-4 x 0.5-07 mm long and 3 mm deep, with denticulate to almost semi hydnoid dissepiments, especially close to the bent margin, context white to cream up to 1 mm thick.
Hyphal system dimitic; generative hyphae with scattered clamps, 2-5 µm wide, skeleto-binding hyphae hyaline and of two kinds, 60-400 x 4-9 µm with few branching becoming whip like in the ends, more rarely also giant skeletal cells, 200-1100 x 8-17 µm thick walled without apical branching, but with numerous short side branches some of which is abortive and spike-like
Basidia 33-40 x 6-7 µm, clavate.
Basidiospores 5.5-8 x 2.7-3.3 µm, oblong ellipsoid to subellipsoid.
Distribution. Known only from type locality at Chavantina in Mato Grosso, Brazil.
Remarks. The species is easy to recognize because of the slightly hydnoid to warted white pileus and the large elongated pores. Microscopically the giant abortive binding hyphae should be diagnostic. The description is taken from Corners publication and fresh specimens are desirable to verify its morphological variation.

Polyporus ciliatus Fr. ,
Syst. Mycol. 1:349. 1821.
Basidiocarps annual, centrally stipitate; pileus circular, up to 10 cm in diam and 7 mm thick; upper surface light brown, then umber, glabrous or squamulose, azonate; margin glabrous to ciliate; pore surface light cream to tan, pores circular, 5-7 per mm, slightly decurrent on the stipe; context hard, white, 1-3 mm thick; tube layer concolorous with pore surface, distinctly darker and more dense than the context, up to 2 mm thick; stipe up to 7 cm long and 8 mm thick, light ochraceous to dirty brownish, with a fine tomentum that disappears with age.
Hyphal system dimitic; generative hyphae thin-walled, hyaline, with conspicuous clamps, inflated to 10 µm in the context, weakly amyloid in the stipe, indistinct in the stipe and pilear cuticles; skeleto-binding hyphae hyaline to light brown, thick-walled, nonseptate, up to 8 µm in diam.
Basidia 16-22 x 4-6.5 µm, clavate.
Basidiospores 5-7 x 2 µm, allantoid to cylindrical.
Distribution. Widespread in the temperate zone, but rare in tropical America and specimens have only been seen from Venezuela.
Remarks. The specimens from tropical America are identical in all aspects with those of the temperate zone, even if it is surprising to find a so common temperate species in this climate.

Polyporus coltricioides Fonseca & Ryvarden, in sched.
Basidiocarps annual, centrally stipitate; pilei circular, solitary, up to 8 cm in diam and 3 mm thick; surface of the pileus dark brown, azonate, glabrous, smooth and even, margin acute, thin, smooth and deflexed when dry; pore surface evenly dark brown, slightly

darker where touched or eaten by insects when fresh, partly decurrent on the stipe, pores thin walled and angular, 5-7 per mm, the dissepiments thin, tube layer fragile, concolorous with pore surface, up to 2 mm deep, context deep cinnamon, but paler than the tubes, up to 3 mm thick at the centre, stipe round, smooth, dull, 6 mm in diameter, up to 4 cm high, homogenous in section.
Hyphal system dimitic; generative hyphae hyaline, thin-walled, and with rare clamps, very difficult to find, 2.5-4 µm in diam; skeleto-binding hyphae thick-walled, aseptate, with arboriform branching to tapering with narrow tips, 2-8 µm in diam;
Basidia not seen.
Basidiospores 5-6 x 2-2.3 µm, cylindrical, straight, thin-walled and negative in Melzers solution,.
Chlamydospores globose to subglobose**,** 4-8 µm in diameter, thick walled, abundantly present in most parts of the basidiocarps.
Substrata. On the ground probably on buried roots.
Distribution. Known only from the type locality in Amazonas, Brazil.
Remarks. This is a remarkable species in many respects, especially because of its even cinnamon colour a characteristic totally unknown among the other representatives of the genus. The same goes for the thick walled chlamydospores which are present throughout the basidiocarps.

Polyporus craterellus Berk. & M. A. Curtis,
J. Linn. Soc. Bot. 10:305. 1868.
Basidiocarps annual, centrally stipitate; pileus flat to usually depressed, fleshy when fresh, light of weight and brittle when dry, up to 12 cm in diameter, 2-8 mm thick, upper surface first whitish, but soon ochraceous to deep tan or brown, glabrous or with some small tufts of hairs that disappear when dry, and then with a wrinkled, papery cuticle; pore surface whitish to straw-coloured, pores angular, 1-3 per mm, brittle when dry, decurrent on the stipe; context white, strongly contrasting with the darker tubes, up to 4 mm thick; stipe up to 6 cm long and 3-8 mm thick, ochraceous to pale brown, with darker tufts of hyphae.
Hyphal system dimitic; generative hyphae with clamps hyaline, in the trama thin-walled, up to 6 µm in diameter, inflated in the context up to 15 µm, forming a cutis both in the stipe and pilear surface; skeleto-binding hyphae usually with a lumen, hyaline, inflated in the context up to 15 µm.
Basidia 10-14 x 4-6 µm, clavate with 4 sterigmata.
Basidiospores 10-14 x 4-6 µm, oblong ellipsoid.
Distribution. Sub-tropical to tropical America.
Remarks. *P. craterellus* seems to be close to *P. udus*, which however has violet-pinkish tones on the pileus and stipe and also usually thicker (up to 2 cm).

Polyporus dictyopus Mont.,
Ann. Sci. Nat. Ser. II, 3:349. 1835. - *Polyporus blanchettianus* Berk. & Mont., Ann.. Sci. Nat. Ser. 3, 11:238. 1849. - *P. atro-umbrinus* Berk., Hooker London J. Bot. 8:154, 1856. - *P. decolor* Berk., Hooker London J. Bot. 8:195, 1856. - *P. diabolicus* Berk., Hooker . Lond. J. Bot. 8:174, 1856. - *P. nephridius* Berk., Hooker London J. Bot. 8: 195, 1856. - *P.*

vernicosus Berk., Hooker London J. Bot. 8:175, 1856. - *P. rhizomorphus* Mont., Ann. Sci. Nat. Ser. II, 13:202, 1840.
Basidiocarps annual or biannual, laterally to centrally stipitate; pileus circular to flabelliform, up to 12 cm in diameter and 5 mm thick, upper surface first white in young specimens but soon darkening to chestnut and purplish black in old ones, finely tomentose to glabrous, often slightly radially striate; pore surface ochraceous to dark umber, pores round to angular, 5-7 per mm, slightly decurrent but sharply limited towards the stipe; context straw-coloured, dense, up to 5 mm thick; stipe up to 3 cm long and 1 cm thick, dark brown and velutinate when young, developing a black cuticle, glabrous when old.
Hyphal system dimitic; generative hyphae clamped, 2-6 µm wide, brown, forming a palisade on the stipe surface and a cutis on the pilear surface; skeleto-binding hyphae yellowish to dark brown, solid and tortuous, up to 10 µm wide in the context, in some specimens such as in the type specimen of *P. diabolicus*, swollen to cystidia like organs with lateral branches where the swollen central part can be up to 15 µm in diameter
Basidia 18-26 x 5.4-8 µm, clavate, 4-sterigmate,.
Basidiospores (6)7-8.5(9) x 2.5-4 µm, elliptical, often variable within the same basidiocarp.
Distribution. Pantropical and rather common.
Remarks. There is a strong variation in pore and spore size and apparently there are many incompatibility groups or sibling species within the taxonomic complex described above. Some of the South American collections have strongly swollen sections of skeleto binding hyphae making the reminiscent of cystidia. *P. rhizomorphus* seems to be a rhizomorphic variant of this species.

Polyporus grammocephalus Berk.,
Hooker London J. Bot. Lond. J. Bot. 1:148. 1842. - *Laschia spatulata* Jungh., Praem. Fl. crypt. Java Insulae 1:75, 1838, non *Polyporus spathulatus* Fr. 1830.
Basidiocarps annual, laterally stipitate; pileus flabelliform, up to 7 cm wide and 4 mm thick, upper surface cream to tan or pale brown, radially fibrillose, usually with darker squamules towards the base; pore surface straw-coloured to pale brown, pores 2.5 to 7 per mm, round when young, elongated with age and then partly split, decurrent on the stipe; context cream to ochraceous, up to 4 mm thick; stipe short, up to 1 cm long and 4 mm thick, concolorous with the pileus, glabrous, usually attached to the substratum by a mycelial mat.
Hyphal system dimitic; generative hyphae with scattered clamps, up to 4 µm wide, forming a cutis both in the stipe and pilear surfaces; skeleto-binding hyphae hyaline to yellowish, solid or with a lumen up to 10 µm, usually with straight walls.
Basidia 18-25 x 5-8 µm, clavate, 4-sterigmate.
Basidiospores .5) 6-8 (10) x 2.5-3 µm, oblong ellipsoid to subellipsoid, varying in size within the same basidiocarp.
Distribution. Pantropical.
Remarks. *P. philippinensis* differs by having larger pores, up to 2 per mm.

Polyporus guianensis Mont.,
Ann. Sci. Nat. Bot. II, 13:201. 1840.
Basidiocarps annual to biannual, centrally to laterally stipitate; pileus flabelliform, spatulate or infundibuliform, up to 5 cm wide and 2 mm thick, tan to beige, glabrous to slightly radially striate; pore surface tan to greyish brown, pores angular, often radially elongate, 1-2 per mm, slightly decurrent on the stipe which first is dark brown and finally tomentose, but soon becoming black and glabrous, context cork-coloured, coriaceous, up to 1 mm thick; stipe up to 3 mm thick, sometimes developing as black, glabrous rhizomorphs up to 10-12 cm long.
Hyphal system dimitic; generative hyphae clamped, up to 3.5 µ wide, in the stipe surface forming a palisade, in the pilear surface as a cutis; skeleto-binding hyphae yellowish to dark brown, solid and tortuous, up to 5 µm wide.
Basidia 21-27 x 8-10 µm.
Basidiospores (7)8-12 x 2.5-4 µm, cylindrical.
Distribution. Tropical Asia and South America, apparently not common.
Remarks. *P. leprieurii* is closely related, but the pores are smaller, i.e. 3 or more per mm.

Polyporus ianthinus Gibertoni & Ryvarden,
Synopsis Fung. 18: 53. 2004.
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, hard when dry, upper surface vinaceous to brown, azonate, very finely lined radially, smooth, glabrous, dull, azonate, margin sharp and wavy, pore surface white drying ochraceous, pores round, 5-6 per mm with rather thick dissepiments, 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, lighter than the tubes, dense, up to 5 mm thick at the base.
Stipe lateral, concolorous 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 15-17 x 4-5 mm clavate.
Basidiospores 5-6 x 3-3.5 mm, ellipsoid cylindrical.
Distribution. Known from Guyana, Venezuela and Brazil.
Remarks. The species is characterized above all by the vinaceous, glabrous and smooth pileus. In shape it is reminiscent of *P. grammocephalus* Berk., which however has radial veins or lines on an ochraceous pileus, besides having spores 6-8 mm long.

Polyporus indigenus I.J. Araujo & M.A. de Sousa,
Acta Amazônica 11: 450, 1981.
Basidiocarps annual, stipitate with an evenly expanded stipe from the ground making it funnel like, up to 5 high; pileus circular and 5 cm in diameter; pileus surface zonate pale cream, glabrous and rugulose as if have contracted under drying, light of weight; margin hymenial surface poroid, pores angular, 3-4 per mm, dissepiments thin and entire, white to

pale cream; context 5 mm thick, homogenous, soft and cheesy, tubes concolorous with the pore surface, 1 cm measured vertically; stipe white, glabrous, cylindrical, about 1 cm in diameter up to 1 cm in the type.
Sclerotium present, semi spherical in the type as coming from an originally spherical shaped sclerotium, about 8 cm in diameter, very dense and bone hard, outer surface irregularly brown, inner part marmorated with 1-3 mm large spots of semi translucent cartilaginous material in a whitish hyphal matrix.
Hyphal system dimitic; generative hyphae with clamps, difficult to find in the context, abundant in the trama and subhymenium, 2-4 µm wide, skeletal hyphae evenly thick-walled and with a wide lumen, pale yellow, rare dichotomously branched, distinct but not neither dextrinoid nor amyloid in Melzer's reagent, gelatinized and irregular in 3% KOH, 4-10 µm wide. In the sclerotium, mostly solid sclerids or twisted hyphal sections without any discernable structure, up to 15 µm wide.
Cystidia absent from the hymenium.
Basidia 18-24 x 4-6 µm, obconical with 4 rather blunt and short sterigmata.
Basidiospores 5-6 x 3.5-4 µm, oblong ellipsoid.
Substrata. From a buried sclerotium.
Distribution. Known only from the type locality.
Remarks. *Polyporus indigenus* was described in 1981 by I.J. Araujo and M.A. Sousa, who cultivated fragments of the sclerotium in culture and was able to grow basidiocarps. This sclerotium is known as "pão do índio" (Indian bread) and is used as food by local tribes. We prefer to keep this species in *Polyporus* s. str. even if it lacks the typical dichotomously branched solid arboriform binding hyphae as seen in the other species of *Polyporus* s. str. A sclerotium as such is also known in the temperate boreal *P. tuberosus* Jacq. Fr. which however has much longer cylindrical spores (10-16 x 4-7 µm) and a scaly upper surface.

Polyporus leprieurii Mont.,
Ann. Sci. Nat. II, 13:203. 1840.
Basidiocarps annual to biannual, centrally to laterally stipitate; pileus flabelliform to spatulate, often partly imbricate, 2-5 cm wide, up to 2 mm thick, coriaceous when fresh, hard when dry, upper surface pale tan when fresh, isabelline to tobacco brown when dry, glabrous, azonate to radially striate; pore surface tan to typically greyish brown, pores round to angular, small, 5-8 per mm, strongly delimited towards the stipe; context ochraceous to beige, less than 1 mm thick; stipe up to 2 cm long and 2-3 mm wide, round, black and glabrous, usually elongating to form rhizomorphs.
Hyphal system dimitic; generative hyphae clamped, up to 3 µm wide, forming a palisade on the stipe surface and a cutis on the pilear surface; skeleto-binding hyphae yellowish to dark brown, solid and tortuous, and very abundant, up to 5 µm wide.
Basidia 20-30 x 8-10 µm, clavate and 4-sterigmate.
Basidiospores 4.5-7(9) x 2-2.5(3) µm, ellipsoid to subellipsoid, often of different sizes in the same basidiocarp.
Distribution. Tropical species from America and Eastern Asia.

Remarks. The species is commonly found on hanging branches in rain forests in form of rhizomorphs that are able to develop a pileus under favourable conditions. The closest species seems to be *P. guianensis*.

Polyporus minutosquamosus Runnel & Ryvarden,
In sched.
Basidiocarps annual, laterally stipitate; pileus flabelliform, up to 4 cm wide and 4 mm thick; upper surface cream to tan or cinnamon brown with numerous minute black scales or tufted agglutinated hyphae, especially at the centre, towards the margin the scales are lighter to almost hyaline at the very edge of the pileus; stipe round, lateral to eccentric, up to 1 cm long and 4 mm in diameter, ochraceous and with decurrent pores in upper part; pore surface deep ochraceous pores 3-4 per mm, angular and thin walled; tubes concolorous with the pore surface, up to 1 mm deep; context homogenous, white, up to 5 mm thick at the centre (Fig. 2).
Hyphal system dimitic; generative hyphae with clamps, 3-8 µm wide, hyaline, rather thin walled with large lumen; those of the pileus scales, pale brown, thin-walled and 4-10 µm wide; binding hyphae seen only in upper part of context, hyaline, dichotomously branched with long whip like thin branches, almost solid towards the apex (Fig. 3).
Basidia. 18-25 x 5-8 µm, clavate, tetrasterigmatic.
Basidiospores. 4.0-5.5 x1.5-2 µm, cylindrical, smooth, thin walled, hyaline and negative in Melzers reagent.
Distribution. Known only from the type locality in French Guiana.
Remarks. This is a remarkable species by the small numerous black scales on the pileus, reminding one of a down sized pileus of the more common and temperate species *P. squamosus*, hence the specific epithet.

Polyporus nigrovelutinus Ryvarden & Iturriaga,
Synopsis Fung. 18:72, 2004.
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 mm.
Basidiospores 6-8 x 3.5-4 mm, oblong ellipsoid.
Distribution. Only known from the type locality in Venezuela.

Remarks. This is a conspicuous species by the dark brown, velutinate pileus with a black cuticle below the tomentum, the black cuticle also covering the margin of the pore surface. The closest relatives seems to be 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 covering also part of the pore surface is also a characteristic never seen in *P. melanopus*.

Polyporus philippinensis Berk.,
Hooker London J. Bot. Lond. J. Bot. 1.:148. 1842.
Basidiocarps annual, laterally stipitate; pileus flabelliform, up to 7 cm wide and 4 mm thick, upper surface cream to tan or pale brown, radially fibrillose, usually with darker squamules towards the base; pore surface straw-coloured to pale brown; pores 1-2 per mm; round when young, elongated with age and then partly split, decurrent on the stipe; context cream to ochraceous, up to 4 mm thick; stipe short, up to 1 cm long and 4 mm thick, concolorous with the pileus, glabrous, usually attached to the substratum by a mycelial mat.
Hyphal system dimitic; generative hyphae with scattered clamps, up to 4 µm wide, forming a cutis both on the stipe and pilear surfaces; skeleto-binding hyphae hyaline to yellowish, solid or with a lumen up to 10 µm, usually with straight walls.
Basidia 18-25 x 5-8 µm, clavate, 4-sterigmate,.
Basidiospores (4.5)6-8 (10) x 2.5-3 µm, oblong ellipsoid to subellipsoid, varying in size in the same basidiocarp.
Distribution. Tropical and subtropical zones, rare in Africa.
The species differs from *P. grammocephalus* Berk. by having larger pores. The group of species around *P. philippinensis* is problematic since there are a continuous variation in pore and spore size and a change of colour in the drying of the basidiocarp. Spore prints from fresh material in the group is very desirable.

Polyporus puttemansii Henn.,
Hedwigia 43: 200, 1904.
Basidiocarps annual, centrally to laterally stipitate; pileus infundibuliform, seldom spatulate, up to 10 cm in diam and 2-5 mm thick, upper surface finely velutinate under the lens, but becoming glabrous, ochraceous to beige, pore surface beige, pores circular to angular, 1-2 per mm, elongated towards the stipe and there up to 1.5 cm long, but not decurrent; ; stipe up to 3 cm long, 4 mm to 1 cm thick, finely velutinate, dark brown to dark chestnut, tubes and context pale ochraceous and 2 mm thick.
Hyphal system dimitic; generative hyphae clamped, 3-6.5 µm wide, forming a cutis in the stipe and pilear surfaces; skeleto-binding hyphae with abundant branching, 2-6 µm wide.
Basidia 20-25 x 6-10 µm.
Basidiospores 8-10 x 3-4 µm, cylindrical.
Distribution. Described from Brazil, but also reported from French Antilles.
Remarks. Undoubtedly, this species is related to *P. virgatus,* but is separated by a paler pileus, larger pores and more narrow spores. This description has been taken from David

& Rajchenberg 1985:308 and a picture of the type deposited in Kew. More collections is necessary to ascertain whether this is a just a young and immature specimen of *P. virgatus.*

Polyporus sapurema Møller,
In Engler & Prantl, Nat. Plazenfamilien 1:172, 1900.
Basidiocarps annual, stipitate with an evenly expanded stipe from the ground making it funnel like, up to 10 cm high; pileus circular and 5 cm in diameter; pileus surface azonate, scaly, cram to brown when dry; margin obtuse, pore surface yellow to cream, pores angular, 1-2 per mm, dissepiments thin and entire, white to pale cream; context up to 8 mm thick, homogenous, soft yellow to cream, tubes concolorous with the pore surface, 2 mm measured vertically.
Stipe yellow, velutinate, round and up to 10 cm in diameter.
Sclerotium present, spherical 11 cm in diameter, very dense,, outer surface irregularly brown.
Hyphal system dimitic; generative hyphae with clamps, hyaline, 1.5-2 µm wide, skeletal hyphae evenly thick-walled and with a wide lumen, pale yellow, rare dichotomously branched, 4-6 µm wide. In the sclerotium, mostly solid sclerids or twisted hyphal sections without any discernable structure, up to 15 µm wide.
Cystidia absent from the hymenium.
Basidia not seen.
Basidiospores 9-11 x 4-5 µm, cylindrical.
Substrata. From a buried sclerotium.
Distribution. Known from a few localities in Brazil.
Remarks. The scaly pileus, large spores and large pores separate the species from *P. indigenus*, the other Neotropical species arising from a buried sclerotium.

Polyporus subpurpurascens (Murrill) Ryvarden,
Mycotaxon 23:181, 1985. - *Hexagonia subpurpurascens* Murrill, North Am. Flora 9:51, 1907.
Basidiocarps annual, laterally stipitate; pileus infundibuliform, up to 2 cm in diam and 1-2 mm thick, upper surface glabrous, finely tessulate, chestnut to deep bay, pore surface white to pale ochraceous, pores decurrent, angular, 1-2 mm wide, elongated towards the stipe, the latter up to 2 cm long, 2-3 mm in diameter, white to ochraceous, glabrous and smooth, tubes concolorous with pore surface, 1-2 mm deep, context white and very thin.
Hyphal system dimitic; generative hyphae clamped, 3-5 µm wide, forming a cutis in the stipe and pilear surfaces; skeleto-binding hyphae with abundant branching, 2-6 µm wide.
Basidia 20-25 x 6-10 µm.
Basidiospores 8-10 x 3.5-4 µm, cylindrical,
Distribution. Known only from the type locality in Jamaica.
Remarks. The purplish to bay, glabrous upper surface and the large, white decurrent pores should be good diagnostic characters for this rare species.

Polyporus tenuiculus (Beauv.) Fr.,
Syst. Mycol. 1:344. 1821. - *Favolus tenuiculus* Beauvois, Fl. Oware Benin Afriq. 1:74. 1806. - *Daedalea brasiliensis* Fr. Syst. Mycol. 1:332, 1821, non *Polyporus brasilensis* Spegazzini.
Basidiocarps annual, solitary, imbricate or caespitose, centrally to laterally stipitate; pileus flabelliform, or infundibuliform, 2-10 cm in diameter, up to 6 mm thick at the base and thinning towards the margin; upper surface white when fresh, drying deep tan to purplish bay, glabrous except for the basal part of the pileus, smooth or distinctly tessellate reflecting the pores below, light and brittle when dry; pore surface concolorous with the pileus, pores hexagonal to radially elongated, 1-2 per mm, rather shallow, decurrent along the whole stipe; context white to pale ochraceous, up to 2 mm thick. Stipe up to 1 cm long and 5 mm thick, concolorous with the pileus.
Hyphal system dimitic; generative hyphae hyaline, mostly clamped but also with simple-septa, 2-4.5 µm wide, forming a cutis in the stipe and pilear surfaces; skeleto-binding hyphae with rather straight walls, usually solid, hyaline, up to 7 µm wide.
Basidia 20-30 x 4-7 µm.
Basidiospores (8)9-12 x 2-3.5 µm, cylindrical to subnavicular.
Distribution Pantropical.
Remarks. *P. tenuiculus* as described here is probably a species complex. Before mating tests among the different morphological forms with different pore sizes, have been performed, they will all be treated as one very variable species. In a wide sense it is a common species and often occurs in large numbers and are quickly attacked by insects. In Africa it is commonly used for food.

Polyporus tricholoma Mont.,
Ann. Sci. Nat. Ser. II, 8:365. 1837.
Basidiocarps annual, centrally stipitate, solitary to caespitose; pileus circular, flat to infundibuliform, up to 4 cm in diameter and 2 mm thick, upper surface cream, drying pale tan to pale brown, smooth, glabrous, usually ciliate along the margin; pore surface ochraceous, pores round to angular, up to 9 per mm, not or slightly decurrent on the stipe; context whitish to tan, up to 1 mm thick; stipe up to 4 cm long, 1-3 mm thick, pale tan to dirty brownish, longitudinally wrinkled when dry, mostly glabrous.
Hyphal system dimitic; generative hyphae clamped, hyaline, 2-5 µm wide, weakly amyloid in the stipe, forming a cutis both in the stipe and pilear surface; skeleto-binding hyphae hyaline, abundant, solid or with a lumen up 10 µm.
Basidia 15-20 x 6-7.5 µm, clavate, 4-sterigmate.
Basidiospores 6-7 x 2-3 µm, cylindrical.
Distribution. Widespread in the neotropics, rare in the paleotropical zone.
Remarks. The species is characterized by its light colours and the mostly prominent cilia along the margin of the pileus.

Polyporus udus Jungh.,
Tidschr. v. Nat. Gesch. Phys. 7:289. 1840.
Basidiocarps annual, laterally to centrally stipitate; pileus circular to fan-shaped, flat to strongly infundibuliform, up to 12 cm in diameter and 2 cm thick, upper surface greyish-

brown often with pinkish to violet tints when fresh, sometimes with adpressed small squamules or tufts of brown hairs; surface glabrous when dry, covered by a wrinkled papery cuticle; pore surface white to ochraceous, pores irregular to angular, brittle, 1-2(3) per mm, context white, distinctly paler that the pore layer, brittle when dry, up to 2 cm thick; stipe up to 6 cm long and 2 cm thick, light brown or concolorous with the pileus, even or with tufts of brown hairs, often with shallow decurrent pores in the upper part.
Hyphal system dimitic; generative hyphae clamped, up to 10 µm wide, forming a cutis in the stipe and pilear surface; skeleto-binding hyphae hyaline to yellowish, up to 10 µm wide, almost absent in the trama.
Basidia 35-38 x 8-10 µm, clavate, 4-sterigmate.
Basidiospores 10-15 x 4-6 µm, cylindrical to broadly ellipsoid, often variable in single preparations.
Distribution. Pantropical but in Japan found also in the temperate zone.
Remarks. The species belongs in the group *Squamosus*, and is recognized by its smooth, greyish-brown papery cuticle with rose tints and small squamules or raised hairs when fresh. The stipe is often partly villose with dirty brown hairs which may disappear by age. The colour variation in this species is often bewildering as it changes from one collection to another, some being distinctly more pinkish than other brown to grey ones. It may be that more than one species is involved. Careful studies on fresh specimens are desirable to see whether this variation only is a matter of age and climate or is genetically fixed.

Polyporus varius Fr. ,
Syst. Mycol. 1:352, 1821.
Basidiocarps annual, centrally to laterally stipitate; pilei dimidiate to circular, sometimes flabelliform or infundibuliform, up to 8 cm wide and 4 mm thick, solitary; upper surface pale buff to pale leather coloured with occasional radially aligned darker lines, becoming white in specimens surviving the winter, azonate, glabrous, margin concolorous; pore surface pale buff, the pores circular to angular, 7-9 per mm, dissepiments entire; context buff, corky, azonate, up to 2 mm thick; tube layer concolorous with context, up to 5 mm thick, usually decurrent to black portion of stipe; stipe black and minutely tomentose at base, but soon becoming glabrous and smooth, upper portion usually pale cream and covered by decurrent tubes, up to 2 cm long and 7 mm thick, the stipe keeps its colour over the winter.
Hyphal system dimitic; contextual generative hyphae hyaline, thin-walled, with clamps, 2.5-4 µm in diam, difficult to find in mature specimens; contextual skeleto-binding hyphae thick-walled, much branched, 1.5-6 µm in diam; tramal hyphae similar.
Basidia 18-30 x 7-9 µm, clavate, 4-sterigmate, with a basal clamp.
Basidiospores 8.5-11 x 3-3.5 µm cylindrical, slightly curved.
Distribution. Widespread and common in the temperate zone, rare in the tropics. Specimens have been examined from Venezuela.
Remarks. Basidiocarps of *P. varius* are usually easy to recognize because of the pale ochraceous to leather coloured pileus, often radially striate, and a smooth blackish stipe base. Within the same basidiocarp, spore width varies from 2.5 to 4 µm. Some specimens of the tropical species *P. leprieurii* resemble *P. varius* because of the pilear colour. While the pore surface is ashy brown in the former species, it is cream in the latter.

Polyporus virgatus Berk. & M. A. Curtis,
Jour. Linn. Soc. Bot. 10:304. 1868.
Basidiocarps annual, centrally to laterally stipitate; pileus infundibuliform, seldom spatulate, up to 10 cm wide and 2-5 mm thick, upper surface sienna, umber becoming chestnut, usually with red tints, first finely velvety, soon glabrous, the surface breaks radially exposing the lighter context; pore surface umber to dark brown when dry, pores circular to angular, 3-4 per mm, decurrent on the stipe; context pale yellow to ochraceous, distinctly lighter than the tubes, hard, 1-3 mm thick; stipe up to 3 cm long, 4 mm to 1 cm thick, dark brown, finely wrinkled and with a black cuticle covered by brown tomentum that soon disappears.
Hyphal system dimitic; generative hyphae clamped, 3-5 µm wide, forming a cutis in the stipe and pilear surfaces; skeleto-binding hyphae abundant, with a lumen, up to 9 µm in diameter.
Basidia 20-25 x 6-10 µm.
Basidiospores 9-12.5 x 4-5 µm, cylindrical.
Substrata. On dead hardwoods.
Distribution. Pantropical to subtropical, but not common.
Remarks. The striate, usually infundibuliform pileus and large spores make the species easily recognizable.

Porodisculus Murrill,

N. Am. Flora 9:47, 1907.
Basidiocarps pileate, pendent from a stalk-like base, 1-3 mm wide; upper surface and dissepiments farinaceous, ashy white to pale brown; pore surface concave, pores 8-10 per mm; hyphal system monomitic, hyphae simple-septate; much branched trichocyst hyphae on pilear surface and dissepiments; basidia in a compact palisade, 3-4 µm in diam, 4-sterigmate; cystidia absent; basidiospores allantoid, 3-4 x 1 µm. Associated with a white rot of dead hardwoods. Monotypic, cosmopolitan genus.
Type species: *Porodisculus pendulus* (Schw.) Murrill.
Remarks. This genus has no apparent close relatives among the other polypores in this book. The small pendent basidiocarps and the distinctive coralloid trichocyst hyphae suggest relationships with the pleurotoid agarics or perhaps cyphellaceous fungi.

Porodisculus pendulus (Schw.) Murrill,
N. Am. Flora 9:47, 1907. - *Peziza pendula* Schw., Schr. Nat. Ges. Leipzig 1:92, 1822. - *Polyporus cupulaeformis* Berk. & M. A. Curtis, Grevillea 1:38, 1872.
Basidiocarps annual, pileate, single, but usually fruiting in large numbers, usually pendent from a dorsal or lateral narrowed stalk-like base developing from a lenticel, or a mass of mycelium that ruptures the bark, circular to elliptical in outline, 1-3 mm in diam; upper surface ashy-white, farinaceous, azonate, margin pale brown, also farinaceous, rounded, fertile below; pore surface convex, the pores 8-10 per mm, almost obscured by the thick, farinaceous and sugary looking dissepiments; context cream coloured with a pale brown upper layer composed of the surface tomentum, azonate, up to 1.5 mm thick, firm-corky; tube layer distinct and appearing cartilaginous in dried specimens, pinkish

buff, up to 1 mm thick; dorsal or lateral stalk-like part with surface characters like pileus surface.
Hyphal system monomitic; contextual hyphae hyaline, thin-walled, simple-septate, 2-3 µm in diam, hyphal walls swelling greatly in KOH and lumen staining brightly in phloxine; tramal hyphae similar; vesicular, chlamydospores-like structures present in trama, ellipsoid to spherical, moderately thick-walled, 15-20 x 12-15 µm; pilear surface and dissepiments with much branched trichocyst hyphae, branching heads covered with minute dichotomously branched projections and often with coarse crystalline material, those on the pilear surface strongly amyloid so that the entire layer turns blue-black in Melzer's reagent.
Cystidia or other sterile hymenial elements absent.
Basidia 12-17 x 3-4 µm, packed in a dense palisade, difficult to separate, narrowly clavate to cylindrical, 4-sterigmate, simple-septate at the base.
Basidiospores 3.5-4.5 x 1 µm allantoid.
Substrata. Dead branches of trees in several hardwood genera.
Distribution. Hardwood forests of the eastern U.S. from Florida to New York and southwards to Argentine. Apparently rare, but is easily overlooked by its small size and dark brown colour.
Remarks. This species has the smallest basidiocarps of any of the polypores described in this book. They commonly develop in large numbers on recently killed branches or logging slash.

Porogramme Pat.,

Essai Tax. p. 63, 1900.
Basidiocarps resupinate, adnate, bluish grey, reddish to almost blackish, pores angular and irregular, in parts labyrinthine or consisting of irregular plates, hymenium whitish and restricted to the base of the pores, context dark and resinous hard, old tubes filled with white mycelium, substrate reddened in zones, hyphal system monomitic, generative hyphae with clamps, first hyaline, later thick-walled and tinted brownish, and then darker in KOH and dextrinoid, densely intertwined and agglutinated, clamps often difficult to observe, cystidia and dendrohyphidia absent or present, spores ellipsoid, smooth, thin-walled and non-amyloid.
Type species: *Porogramme dussii* (Pat.) Pat.
Remarks. The genus is easy to recognize because of the extremely tiny pores and its bluish colour. The hyphal system may be mistaken to be dimitic, but an examination of the thick-walled hyphae demonstrated clamps, thus, they must be interpreted as sklerified generative hyphae.

Porogramme albocincta (Cooke. & Massee) Lowe,
Lloydia 21:102, 1958. - *Poria albocincta* Cooke & Massee, Grevillea 20:106, 1892.
Basidiocarp resupinate, widely effused, adnate and hard, up to 2 mm thick in mature specimens, smooth in young specimens, with deep polygonal cracks in older specimens, substratum distinctly reddened by the fungus, often in several zones or bands, in some specimens a distinct pocket rot has been observed deeper in the substratum, but whether

this belongs to this species has not been confirmed, pore surface dark bluish grey to brownish grey when older, margin wide to narrow and shiny, pores very small, 8-20 per mm and variable, mostly angular and thin-walled, entire or sinuous to labyrinthine or even consisting of isolated, sinuous vertical plates, under a lens the walls appear as being almost black, while the bottom of the pores is filled to variable heights with a white mycelium, in old and dry specimens often shrunken to more dense and loose granules, in sections the basidiocarp appears dark-coloured with white spots where old pores have been filled with these mycelial masses.
Hyphal system monomitic, generative hyphae with clamps, at first hyaline and thin-walled, the subhymenium at the top of the tubes consists of such hyphae, developing thicker walls and scattered clamps in the dissepiments. The hyphae in the sterile parts of the basidiocarp are olivaceous brown in KOH and water, dextrinoid in Melzer's reagent, strongly agglutinated and the clamps are difficult to find. There are all types of intermediate hyphae from thin-walled, hyaline ones in the subhymenium to moderately thick-walled or very thick-walled ones in the sterile dark tissue. They seem to be intricately branched and with irregular thickened walls, hymenium restricted to bases of the tubes and consisting of a palisade of hyphal ends mixed with scattered basidia. In fresh, actively growing specimens there is a distinct subhymenium, up to 35 µm deep with vertical and highly branched hyphae.
Cystidia lacking, but some hyphae may project above the hymenium and may be interpreted as cystidiols.
Basidia 20-28 x 4-7 µm, clavate with four curved sterigmata, 4-5 µm long.
Basidiospores 4-6 (6.5) x 3-3.5 µm, broadly ellipsoid.
Substrata. On hard wood trees, mostly on exposed surfaces.
Distribution. A pantropical species and quite common.
Remarks. The species is easy to recognize in the field because of its dark bluish-blackish surface when old, more ashy-blue when young and with the white bases of the pores. Further, red irregular zones or bands ae developed below the basidiocarps. The only other species doing the same is *Tinctoporellus epimiltinus*, which, however, is a true polypore with distinct poroid surface and a more reddish-buff colour.

Protomerulius A. Møller,

Protobasidiomyceten p. 129, 1895.
Basidiocarps resupinate to pileate, annual; hyphal system dimitic; generative hyphae with clamps; skeletal hyphae with a wide lumen and dominant in the basidiocarp; basidia longitudinally septate and 4-celled; basidiospores hyaline, allantoid and negative in Melzer's reagent; causes a white rot in dead hardwoods. Cosmopolitan genus, with four species in tropical America.
Type species: *Protomerulius brasiliensis* A. Møller.
Synonym*: Aporpium* Singer 1944 (*Poria canescens* P. Karst.).
Remarks. The genus is unique among the poroid fungi with its longitudinally septate basidia, and it belongs in the Tremellaceae. The generative hyphae are often very difficult to find and basidia seem to collapse rather rapidly after spore discharge.

Key to species

1. Basidiocarps resupinate **2**
1. Basidiocarps pileate **3**

2. Spores cylindrical to oblong ellipsoid, gloeocystidia absent ..... **P. caryae**
2. Spores broadly ellipsoid, gloeocystidia present ..... **P. brasiliensis**

3. Pores 6-8 per mm, basidiocarps woody hard ..... **P. dimidiatum**
3. Pores 1-3 per mm, basidiocarps fragile ..... **P. substuppeus**

Protomerulius brasiliensis Møller,
Protobasidiomyceten p. 129, 1895.
Basidiocarps annual, resupinate, consistency soft when fresh, brittle when dry, pore surface first whitish, drying sordid light brownish, pores angular, elongate to irregular, 1-2 per mm, dissepiments first thick, later thin and lacerate, tubes up to 5 mm long, brownish, lighter towards the context, margin up to 4 mm wide, finely felted, white to cream.
Hyphal system dimitic, generative hyphae thin-walled, hyaline and clamped, 1.5-3.5 µm in diameter, skeletal hyphae dominating, hyaline, thick-walled, straight to slightly sinuous, 3-6 (8.5) µm in diameter, those of the context of the same kind, but completely dominated of skeletal hyphae basidia globose to ellipsoid, up to 15 µm in diameter and with four large sterigmata up to 10 µm long and 3 µm wide.
Basidia longitudinally septate, the septa only visible as thin dark lines along the basidium, unripe basidia very numerous in the hymenium, mature basidia almost globose and capitate with a stalk like base, sterigmata or epibasidia up to 9 µm long.
Gloeocystidia up to 35 µm long, arising in the subhymenium and bending into the hymenium and with a yellow and oily content.
Basidiospores 6.-7 x 4-5 µm, broadly elliptical, non-amyloid, but often with oil drops.
Substrate. On dead hardwood.
Distribution. Described from Brazil. *P. africanum* Ryvarden is rather similar and may ultimately be regarded a synonym. If so, then the species is also widespread in tropical Africa.
Remarks The larger pores, the presence of gloeocystidia and the wider spores separate the species from *P. caryae.*

Protomerulius caryae (Schwein.) Ryvarden,
Synopsis Fung. 5:212, 1991. - *Polyporus caryae* Schwein., Trans. Am. Phil. Soc. II 4:159, 1832.
Basidiocarps poroid, annual, resupinate; pore surface pale pinkish brown, often spotted, turning light reddish brown when bruised; pores regular, circular, 3-5 per mm; margin whitish to pale buff, usually less than 1 mm wide, tomentose; context less than 0.5 mm thick, pale buff; tube layer concolorous with context, up to 3 mm thick.
Hyphal system dimitic; generative hyphae inconspicuous, thin-walled, hyaline, with clamp connections, 2-3 µm in diam; skeletal hyphae conspicuous, thick-walled but with a rather wide lumen, nonseptate, 2-4 µm in diam.

Cystidia or other sterile hymenial elements absent; hyphal pegs present.
Basidia longitudinally septate, broadly clavate when immature, 4-spored, 5-7.5 µm in diam, 10-15 µm long, with a basal clamp, epibasidia up to 12 µm long at maturity.
Basidiospores 5.5-7 x 2-2.5 µm, allantoid.
Substrata. Dead hardwoods, rarely on conifers. It has also been found on old polypores, for example *Inonotus* spp. and *Polyporus* spp.
Distribution. This is a rather rare species but is widespread in America. It is replaced by similar species in Europe and Africa.
Remarks. The septate basidia make the species distinct. The generative hyphae are often difficult to observe and the only slightly thick-walled skeletal hyphae may initially be taken as generative hyphae until one understand their true identity by their complete lack of septation. Unless the cruciate basidia are observed, *P. caryae* is easily mistaken for an *Antrodia* or *Diplomitoporus* species.

Protomerulius dimidiatum (A. David) Ryvarden comb. nov.,
Basionym: *Aporpium dimidiatum* A. David, Bull. Soc. Mycol. Fr. 90:180, 1974.
Index Fungorum no 552570.
Basidiocarps annual, effused to nodulose pileate, often in imbricate clusters, very hard when dry, individual pilei slightly dimidiate to broadly attached, convex up to 2 cm wide, 4 mm thick at the base, woody hard, upper surface glabrous, azonate, finely tuberculate, with some scattered warts, reddish brown from the base and here with a thin cuticle, towards the base pale greyish brown to almost whitish at actively growing margins, pore surface first pale ochraceous, drying pale brown, pores round and almost invisible, 6-8 per mm, tubes concolorous, up to 2 mm deep, context cream to pale cinnamon, up to 2 mm thick.
Hyphal system dimitic; generative hyphae with clamps, hyaline, thin-walled, 2-4 µm wide and often very difficult to observe, skeletal hyphae dominant, 2-6 µm wide thin- to thick-walled, hyaline, normally with a wide lumen and may easily be mistaken for wide generative hyphae.
Cystidia absent.
Basidia 7-12 x 5-8 µm longitudinally septate with four sterigmata, difficult to find in well developed stage.
Basidiospores 5-6 x 3.5 - 5 µm ellipsoid, not seen repetitive in microscopical preparations.
Distribution. Described from Guadeloupe, but we have also seen specimens from Brazil and it is probably widespread in the neotropics.
Remarks. The basidiocarps of this species may in the field easily be mistaken for small *Fomitella supina* which has similar pilei with a dark cuticle developing from the base and small to almost invisible greyish brown pores. It is my guess that several specimens of *P. dimidiatum* are hidden under other names. The tiny pores will separate this species from all other species of the genus.

Protomerulius substuppeus (Berk. & Cooke) Ryvarden**,**
Synopsis Fung. 5: 212, 1991. - *Polyporus substuppeus* Berk. & Cooke, Linn. Soc. J. Bot. 15:380, 1876.

Basidiocarps annual, effused pileate, often in large imbricate clusters, covering several meters on standing dead trees, individual pilei, convex to applanate, up to 6 cm wide and 10 cm in long fused specimens, 1-2 cm thick at the base, sappy and fleshy when fresh, dries light of weight and brittle, upper surface whitish and finely velutinate when fresh, dries pale brown or cinnamon with agglutinated hyphae, azonate, pore surface first white, then cream, ochraceous to brown, pores angular on horizontal part of the basidiocarp, 2-3 per mm, on sloping parts larger and often irregular, up to 3 mm x 2 mm long; tubes concolorous, up to 10 mm deep, fragile when dry, context first white then drying cream to pale cinnamon, up to 10 mm thick, often with a black line separating the context from the tubes.
Hyphal system dimitic; generative hyphae with clamps, hyaline, thin-walled, 2-4 µm wide and often very difficult to observe, skeletal hyphae dominant, 3-7 µm wide thin- to thick-walled, hyaline, normally with a wide lumen and may easily be mistaken for wide generative hyphae.
Cystidia absent.
Basidia 15-25 x 7.12 µm and longitudinally septate, with four sterigmata, often difficult to find in well developed shape.
Basidiospores 5-7.5 x 3-4.5 µm, cylindrical to broadly ellipsoid, often with oil drops, hyaline, negative in Melzer´s reagent, often seen repetitive in microscopical preparations.
Distribution. Specimens have been seen from Puerto Rico, Costa Rica, Colombia and Brazil and probably widespread in the neotropics and many specimens may be filed as *Tyromyces* spp. if the characteristic basidia are overlooked.
Remarks. The often large number of white, fleshy and watery basidiocarps when fresh, may easily be taken as an ample collection of a *Tyromyces* sp. However, a microscopical examination will reveal its identity.

Pseudofavolus Pat.,

Essai. Tax. Hymen. p. 80, 1900.
Basidiocarps annual or reviving for a second season, solitary or imbricate, flabelliform to spatulate, narrowing behind to a like base; pileus glabrous, smooth or tessellated, sometimes radially striate; context thin; pores large to rather small, angular to hexagonal, dissepiments thin to moderately thick, frequently covered with whitish to grey granular crystals; tubes short; hyphal system dimitic; generative hyphae with clamps; binding hyphae arboriform and thick-walled, hyaline and with a variable dextrinoid reaction, almost non-dextrinoid in the context and lower part of tube walls, more pronounced dextrinoid towards the dissepiments; cystidia none, but dendrohyphidia may be present among the basidia, especially towards the dissepiments, moderately branched with a few conical protuberances, apparently arising in the subhymenium, but some branches of the binding hyphae also penetrate into the hymenium; spores cylindrical, smooth, non-dextrinoid and large; causes a white rot.
Type species: *Polyporus miquelii* Mont.

Remarks The genus is undoubtedly related to *Polyporus* s. str. by its large cylindrical spores and strongly arboriform binding hyphae, characters also seen in the type species of *Polyporus, P. squamosus*. The branched hyphidia seen in the dissepiments and partly in the hymenium are not observed in *Polyporus* neither is the slight dextrinoid reaction in the binding hyphae. The basidiocarps are in general much smaller than seen in *Polyporus* and the pores often only shallow depressions. For the time being the genus is kept separate.

Key to species

1. Pores 1-2 per mm, pileus reddish-brown to bay, tessulate and with a distinct resinous cuticle ..... **P. miquelii**
1. Pores 2-5 per mm, pileus whitish, tan to dirty brownish or black, smooth, with or without a thin cuticle **2**

2. Pores 2-3 per mm, context 1-2 mm thick, pantropical species ..... **P. cucullatus**
2. Pores 4-5 per mm, context 0.3-0.5 mm thick, tropical American species **3**

2. Pileus smooth, pale reddish-brown to tan ..... **P. orinocensis**
2. Pileus and pore surface black ..... **P. nigrus**

Pseudofavolus cucullatus (Mont.) Pat.,
Ess. Tax. 1900, 81. - *Favolus cucullatus* Mont., Ann. Sci. Nat. Ser. Vol. 2, 17:125, 1842.
Basidiocarps annual, pileate, up to 8 cm wide and 3-4 mm thick, laterally attached with a small disc or a diminutive stipe, dimidiate to flabelliform, consistency rigid when dry; upper surface glabrous and smooth, sometimes finely radiate-striate, whitish, ochraceous to pale dirty umber, often with a dark reddish tint along the margin, which is entire to weakly incised, often wavy and depressed in dried specimens; stipe reduced, a few mm long, often attached to the substrate with a small disc up to 1 cm in diameter; pore surface dark ochraceous to umber or dirty fuscous, pores angular to hexagonal, regular to irregular, (1)2-3 per mm, dissepiments moderately thick, often white to grey or granular, entire to weakly incised; tubes about 2 mm long, concolorous with the pore surface, hymenium as a fine white lining both on the bottom and along the walls, context straw-coloured to pale ochraceous, 1-2 mm thick.
Hyphal system dimitic, generative hyphae thin-walled, hyaline and clamped,2-4 µm in diameter, often collapsed in dried specimens; binding hyphae thick-walled and hyaline, 3-5 µm wide, dominating in the context and the trama, moderately branched to strongly arboriform with tapering branches, variably dextrinoid, usually strongest dextrinoid reaction in the dissepiments.
Cystidia none, but with numerous cystidiols or moderately branched dendrohyphidia, these hyaline, unbranched or with a few lateral protuberances, often difficult to observe, most common towards the dissepiments.
Basidia 60-100 x 12-20 µm, clavate with 4 large and stout sterigmata, lining the tubes both on the bottom and along the walls.
Basidiospores , (11.5-) 13-16 x 4-6 µm, cylindrical, often with a grainy content.
Substrata. Hardwoods of many genera.

Distribution. Widespread in the tropics throughout the world.
Remarks. Superficially the basidiocarps resemble small ones of some *Polyporus* species, but are separated by the shallow, large and hexagonal pores and thin basidiocarp. There is no other *Polyporus* species with such a small and dimidiate to almost substipitate basidiocarp.

Pseudofavolus miquelii (Mont.) Pat.,
Essai Tax. Hymen. p. 81, 1900. - *Polyporus miquelii* Mont. Ann. Sci. nat. III, 4:357, 1845
Basidiocarps annual, solitary, pileate, usually laterally to more rarely dorsally attached, when grown on the underside of a log, 2-10 cm wide and 2-5 mm thick, flexible when fresh, fragile and indurate when dry, upper surface sessile reniform to semicircular, upper surface flat to convex when dry, reddish-brown, umber to chestnut to purplish-black, glabrous, usually tessulate reflecting the bottoms of the pores due to the thin context, often also radially wrinkled or striate especially near the point of attachment, a thin dark cuticle is present, margin very thin and often darker reddish-brown and pointing downwards, slightly wavy and lobed, pore surface darker buff than the context, pores angular, 0.5-2 mm in diameter, dissepiments thin to more thick-walled, entire to fimbriate, tubes often whitish to grey and strongly granular to coralloid (lens) 1-3 mm long, concolorous with the pore surface, hymenium lining the whole tube, context very thin to almost lacking, 0.1-0.4 mm thick, straw-coloured to buff.
Hyphal system dimitic, generative hyphae with clamps, thin-walled and hyaline, 2-5 µm wide, often collapsed in dried specimens, binding hyphae dominating the whole fruit body, strongly arboriform with tapering branches solid to thick-walled, pale yellow to golden up to 8 µm at base and 1-2 µm at the tips, variably dextrinoid, usually mostly dextrinoid towards the dissepiments.
Cystidia none, but cystidiols and dendrohyphidia present.
Basidia up to 100µm long with 4 sterigmata.
Basidiospores (14.5)16-20 x 6.5-8 µm, cylindrical to broadly elliptical, pale yellow, often with several small oil drops.
Distribution. Pantropical, widespread in tropical America but exact distribution unknown.
Remarks. The tessulate and dark reddish-brown pileus, the very thin context, the large angular pores and the spores, more than 15 µm long, make this species characteristic.

Pseudofavolus nigrus Ryvarden,
Mycotaxon 28:537, 1987.
Basidiocarp annual, pileate, dimidiate with a contracted base, cupulate, up to 15 mm in diam, brittle when dry; upper surface black, glabrous, dull and azonate; pore surface black to greyish black with finely grainy dissepiments; pores angular 4 per mm; tubes concolorous with pore surface, up to 300 µm deep; context dense, ochraceous with a black cuticle.
Hyphal system dimitic; generative hyphae with clamps, 2-6 µm in diam, binding hyphae moderately branched, solid, gelatinized in KOH, weakly dextrinoid, 3-6 in diam.
Cystidia. Not seen.
Basidia 30-40 x 10-14 µm, clavate with 4 sterigmata and basal clamp.

Basidiospores 5-8 x 5-7 µm, cylindrical**.**
Distribution. Known only from the type locality in Venezuela.
Remarks. The species is easy to recognize by its small cupulate black basidiocarps and the small spores.

Pseudofavolus orinocensis (Pat. & Gaillard) Ryvarden,
Norw. J. Bot. 19:236, 1972. - *Polyporus orinocensis* Pat. & Gaillard, Bull. Soc. Myc. Fr. 4:31, 1888.
Basidiocarps annual pileate with a contracted tapering base or a very small stipe with a mycelial disc at the point of attachment, 1-2 mm thick and 1-3 cm wide, upper surface flabelliform to conchate, upper surface smooth to slightly radially wrinkled towards the base, glabrous, fuscous to pale chestnut, or reddish-brown, margin entire, wavy and weakly depressed in dried specimens, stipe very short to missing, glabrous, 1-2 mm in diameter, colour as on the pileus, solid, mycelial disc flat, up to 6 mm in diameter, pore surface greyish to fulvous, (3)4-5 pores per mm, pores angular to almost hexagonal, shallow, dissepiments entire, towards the margin covered with crystals giving the pore-walls a granular appearance, context pale ochraceous, about 0.5-1 mm thick.
Hyphal system dimitic, generative hyphae thin-walled, usually collapsed and difficult to observe, hyaline smooth and thin-walled, binding hyphae thick-walled and yellow, strongly branched up to 8 µm in diameter with tapering branches, dominating the whole basidiocarp, variably dextrinoid, strongest reaction in hyphae towards the dissepiments.
Cystidia none, but dendrohyphidia and cystidiols present among the basidia.
Basidia
Basidiospores 14-15.2 x 5.5-6.6 µm, cylindrical, hyaline to pale yellow, with a granular content.
Distribution. Seems to be very rare, specimens have only been examined from Venezuela (type locality) and Uganda.
Remarks. The smooth fulvous to chestnut pileus, the small greyish pores separate the species from the similar P. *cucullatus*.

Pycnoporus P. Karst.,

Rev. Mycol. 3(9):18. 1881.
Basidiocarps annual, sessile to effused-reflexed, dimidiate, pileus surface and pore surface orange-red to cinnabar, colour fading on weathering; pores regular, circular to angular, 3-4 per mm; context reddish orange, coriaceous; hyphal system trimitic; generative hyphae with clamps; tramal hyphae with dextrinoid contents; cystidia absent; basidiospores cylindrical, hyaline, smooth, negative in Melzer's reagent. Causing a white rot of dead hardwoods, rarely on conifers. Cosmopolitan genus with one species in tropical America.
Type species: *Pycnoporus cinnabarinus* (Fr.) P. Karst.
Remarks. *Pycnoporus* is very similar to *Trametes* in all characters except the bright reddish-orange colour.

Pycnoporus sanguineus (L.:Fr.) Murrill,
Torrey Bot. Club Bull. 31:421. 1904. - *Boletus sanguineus* L., Sp. Plant. 2nd ed., p. 1646. 1763. - *Polyporus sanguineus* L.:Fr., Syst. Mycol. 1:371, 1821.
Basidiocarps annual, sessile to effused-reflexed, single or in imbricate clusters, dimidiate, thin and applanate, up to 8 x 5.5 x 0.4 cm, pileus surface orange-red, colour quite persistent but fading to salmon-buff in some old specimens, finely tomentose at the growing margin, becoming scrupose to glabrous on older portions, azonate, pore surface dark red, the pores circular, 5-6 per mm, with thick dissepiments, context tough-fibrous, orange buff and azonate in some specimens, strongly concentrically zonate in others with alternating zones of pale buff and pale orange, up to 3 mm thick, tube layer orange-red, up to 2 mm thick.
Hyphal system trimitic, contextual skeletal hyphae thick- walled, hyaline, non-septate, with infrequent branching, 2-7 µm in diam; contextual binding hyphae thick-walled, non-septate, much branched, 2-4 µm in diam; contextual generative hyphae thin-walled, hyaline, with frequent clamps, rarely branched, 2.5-4 µm in diam; tramal hyphae similar, tramal binding hyphae more conspicuous, mostly 1.5-2.5 µm; hyphal contents in some areas of tramal tissue strongly dextrinoid in Melzer's reagent.
Cystidia absent, hyphal pegs present and usually conspicuous.
Basidia 11-16 x 5-6 µm, clavate, 4-sterigmate, with a basal clamp.
Basidiospores 5-6 x 2-2.5 µm, cylindrical, slightly curved.
Substrate. Dead wood of numerous hardwood genera, usually in open and sunny localities such as poles, stored timber etc.
Distribution. Very common from the south-eastern U. S. throughout subtropical and tropical regions of the world.
Remarks. *Pycnoporus sanguineus* is the only Neotropical polypore with a sharp orange-red colour and a trimitic hyphal system and is among the easiest to recognize.

Pyrofomes Kotl. & Pouzar,

Feddes Rep. 69:140, 1964.
Basidiocarps perennial to annual, pileate to resupinate, pileus smooth to pubescent, ochraceous pink to brick-coloured, pore surface orange pink to red, context concolorous, hyphal system dimitic, generative hyphae with clamps, skeletal hyphae slightly tinted, thick-walled to solid, rarely branched, basidiospores smooth, thick-walled, truncate and slightly dextrinoid to non-dextrinoid. On both living and dead coniferous and deciduous wood with a white rot. Cosmopolitan genus with three species in tropical America.
Type species: *Polyporus demidoffii* Lev.
Remarks. The genus is easy to recognize by its coloured basidiocarps and truncate spores. In the field the basidiocarps easily can be taken for a *Phellinus* sp., but they are usually more reddish than species in this genus. Microscopically the clamped generative hyphae will immediately rule out any relationship to *Phellinus*. The truncate spores clearly point towards *Perenniporia* as the closest relative, which, however, has basidiocarps of a lighter colour with weakly dextrinoid vegetative hyphae and variably dextrinoid spores. Thus, it is mainly a chemical characteristic that separates the two genera.

Key to species

1. Basidiocarps resupinate ..... **P. fulvo-umbrinus**
1. Basidiocarps pileate **2**

2. Pores 2-3 per mm ..... **P. perlevis**
2. Pores 7-9 per mm ..... **P. lateritius**

Pyrofomes fulvo-umbrinus (Bres.) David & Rajchenb.,
Mycotaxon 22:313, 1985. - *Fomes fulvo-umbrinus* Bres., Hedwigia 35:280, 1896.
Basidiocarps annual to perennial, resupinate, effused, up to 1.5 cm thick, pore surface pale brown when fresh becoming darker and brownish with cinnamon or violaceous tints, pores round, 4-8 per mm, tubes up to 1.5 cm long, concolorous with pore surface and variably stratified, context wood-coloured, thin, almost invisible.
Hyphal system dimitic, generative hyphae hyaline and with clamps, thin to slightly thick-walled, 1.5-6 µm wide, in the dissepiments thin-walled while in the context and upper part of dissepiments also with strongly thickened walls and yellow to chestnut, up to 8 µm wide, skeletal hyphae arboriform, pale rusty-red, thick-walled and 3-5 µm wide, all hyphae without reaction in Melzer´s reagent.
Cystidia none.
Basidia 14-16 x 5-7 µm, clavate with 2 (?) sterigmata.
Basidiospores 7.5-10 x 3-4.5 µm, ellipsoid to truncate, thick-walled, hyaline to pale yellowish.
Distribution. Southern Brazil and Northern Argentine.
Remarks. The species may be confused with *Perenniporia aurantiaca*, which has brighter colours and larger spores. This species make the distinction between the genera rather vague.

Pyrofomes lateritius (Cooke) Ryvarden,
Norw. J. Bot. 19:236, 1972. - *Polyporus lateritius* Cooke, Grevillea 9:12, 1880.
Basidiocarps perennial, solitary, applanate, broadly attached to dimidiate with a tapering base, semicircular to flabelliform, up to 15 cm long and 5 cm thick, woody hard when dry, pileus first finely tomentose, pale brown to brick red, soon becoming glabrous and then reddish brown with small warts and pits, pore surface yellowish brown, pores round, 7-9 per mm, tubes concolorous with pore surface and lighter and more brownish than the context, up to 5 mm thick, variably stratified, context bright red to orange-brown, up to 3 cm thick at the base, cherry-red in KOH.
Hyphal system trimitic, generative hyphae hyaline and with clamps, thin to slightly thick-walled, 1.5-4 µm wide, skeletal hyphae dominating, pale rusty-red, thick-walled and 3-6 µm wide, some binding hyphae seen in the type, sparingly branched, yellow 2-3 µm wide.
Cystidia none.
Basidia not seen.
Basidiospores 5-6 x 4.5-5.5 µm, truncate to globose, thick-walled, and with germ pore, pale yellowish to rusty-red, negative in Melzer´s reagent.

Distribution. Brazil, Ecuador and Venezuela.
Remarks. The species is recognized by its small pores. *P. perlevis* is separated by larger pores.

Pyrofomes perlevis (Lloyd) Ryvarden,
Norw. J. Bot. 19:236, 1972. - *Fomes perlevis* Lloyd, Lloyd Mycol. Writ. 4, Lett. No 39:2, 1912.
Basidiocarps perennial, solitary, semi ungulate to applanate, broadly attached to dimidiate with a tapering base, semicircular to flabelliform, up to 15 cm long, 10 cm wide and 7 cm thick, woody hard when dry, pileus brownish-brick-red or cinnamon with orange tints, greyish-brown with age, first velutinate, soon more glabrous as the hyphae agglutinate, often in a finely warted or scrupose pattern, azonate or with rather broad sulcate zones, margin rounded and persistently velutinate, pore surface whitish to fulvous with orange tints, sterile margin usually broad, tan to pale brown, pores round, 2-3 per mm, tubes concolorous with pore surface and lighter and more brownish than the context, up to 5 cm thick, variably stratified, context bright red to orange-brown, radially fibrous, up to 6 cm thick at the base, cherry-red in KOH.
Hyphal system di (tri?)mitic, generative hyphae hyaline and with clamps, thin to slightly thick-walled, 1.5-4 µm wide, skeletal hyphae dominating, pale rusty-red, thick-walled and 3-8 µm wide, a very few slightly branched hyphae also observed, pale yellowish and thick-walled, they may represent true binding hyphae or apically branched skeletal hyphae.
Cystidia none.
Basidia not seen.
Basidiospores 5-7 x 4-5.5 µm, truncate to globose, thick-walled, and with germ pore, pale yellowish to rusty-red.
Distribution. Specimens have been examined from Brazil and Colombia. Also known from Africa.
Remarks. *P. lateritius* is separated by much smaller pores.

Rigidoporus Murrill,

Bull. Torrey Bot. Club 32:478, 1905.

Basidiocarps annual to perennial, coriaceous to bony hard when dry, resupinate to pileate, reddish orange to pinkish, isabelline or ochraceous; pileus tomentose to glabrous, usually zonate; pore surface concolorous, in some species becoming grey to almost black on drying; context dense and fibrous; hyphal system monomitic to apparently dimitic; generative hyphae with simple septa, variable in width and wall thickness, in some species skeletal or strongly sklerified; generative hyphae present, thick-walled to solid and without septa; encrusted cystidia absent or present, mammillate, smooth cystidiols present among basidia in most species; spores ovoid to globose, thin-walled and IKI-. Causes a white rot in hardwoods, rarely in coniferous wood. Cosmopolitan genus.
Type species: *Polyporus micromegas* Mont. - a synonym of *R. microporus* (Fr.) Overeem.
Remarks. Microscopically the genus comes close to *Oxyporus* Donk, which has the same type of generative hyphae and in which most species do have cystidia. However, all species in *Oxyporus* are light coloured, and the cystidia are hymenial and not tramal as in *Rigidoporus*. Furthermore, the mammillate cystidiols of the latter genus are unknown in *Oxyporus*.

Key to species

1. Basidiocarps pileate ..... **Key A**
1. Basidiocarps resupinate ..... **Key B**

Key A

1. Basidiocarps up to 6 cm thick, spores 7-10 x 6.5-10 µm ..... **R. ulmarius**
1. Basidiocarps rarely above 1 cm thick, spores shorter than 7 µm **2**

2. Thick-walled cystidia present **3**
2. Thick-walled cystidia absent **6**

3. Basidiocarps tiny, less than 7 mm wide, pendant ..... **R. micropendulus**
3. Basidiocarps different and larger, stipitate or sessile **4**

4. Basidiocarps laterally stipitate ..... **R. biokoensis**
4. Basidiocarps sessile to dimidiate **5**

5. Pore surface cream to orange, basidiospores ellipsoid ..... **R. andinus**
5. Pore surface reddish to buff when dry, basidiospores globose ..... **R. lineatus**

6. Basidiocarps pendant, first as individual basidiocarps up to 15 mm wide, later fused to larger basidiocarps, upper surface greyish to pale brown ..... **R. concrescens**

6. Basidiocarps laterally stipitate to sessile or dimidiate, upper surface ochraceous to reddish orange when fresh **7**

7. Pore surface bright to deep orange without a reddish tint, basidiocarps often large and 0.5-2 cm thick at the base, growing in clusters ..... **R. aurantiacus**
7. Pore surface distinctly reddish, basidiocarps small to medium, rarely >1 cm thick..... **8**

8. Basidiocarps sessile to dimidiate ..... **R. microporus**
8. Basidiocarps laterally stipitate **9**

9, Spores 6-7 µm in diameter ..... **R. grandisporus**
9. Spores smaller **10**

10. Pileus ochraceous, finely tomentose and context with a dark line under the tomentum ..... **R. amazonicus**
10. Pileus first twhite becoming brown to grey with age or drying, glabrous and without black line in the context **11**

11. Pileus white when fresh becoming grey to reddish brown when dry, stipe finely adpressed velutinate, ochraceous, spores globose, 3-4 µm in diameter ..... **R. mutabilis**
11.Pilesu cinnamon to snuff brown, stipe almost black and glabrous, spores subglobose, 3.5-5 x 3.5-4 µm ..... **R. mariae**

Key B

1. Cystidia absent ..... **R. crocatus**
1. Cystidia present..... **2**

2. Strongly encrusted cystidia present, basidiocarps often pink when fresh becoming almost black when dry, common species..... **R. vinctus**
2. Smooth or only apically encrusted cystidia present, pores surface isabelline to ochraceous more or less unchanged when dry, rare species ..... **R. undatus**

NB Since the spores of all species in the genus are hyaline, smooth and non-amyloid, this information is not repeated for each species.

Rigidoporus amazonicus Ryvarden,
Mycotaxon 28:537, 1987.
Basidiocarps annual, pileate, laterally stipitate to dimidiate, single or in clusters and then often fused, consistency brittle and hard when dry; pileus dimidiate to flabelliform, up to 5 cm long and wide, upper surface adpressed velutinate, azonate, ochraceous, with some olivaceous tints, smooth, but wrinkled in dry condition, stipe up to 4 cm long and 1 cm wide, tapering towards the base, pore surface isabelline, pores round to angular, 6-9 per mm, dissepiments very thin; tubes up to 2 cm long, translucent and dense when dry,

context white to wood-coloured, radially fibrous, up to 3 mm thick and delimited towards the tomentum with a thin dark line.
Hyphal system monomitic; generative hyphae with simple septa, thin- to slightly thick-walled, 3-5 µm wide;, in the context and trama thick-walled up to 8 µm wide with few scattered septa.
Cystidia not present, but smooth, pointed, thin-walled cystidiols present among the basidia, 12-15 µm long.
Basidia 12-15 x 7-10 µm, tetrasterigmatic.
Basidiospores 4-4.5 x 3-3.5 µm, ellipsoid to drop-shaped, thin-walled.
Distribution. Known from Brazil, Venezuela and Bolivia.
Remarks. The lateral stipe makes this species reminiscent of *R. biokoensis*, which however has thick-walled cystidia and large, more globose spores.

Rigidoporus aurantiacus Ryvarden & Iturriaga,
Mycologia 95:1071, 2003.
Basidiocarps annual, more seldom perennial, pileate, sessile or broadly attached, often imbricate and growing in large clusters, consistency hard when dry; pileus dimidiate to flabelliform, up to 22 cm long and 10 cm wide, up to 3 cm thick in individual pilei, upper surface first orange-reddish -brown, first dull, then smoother and glabrous and fading to pale reddish brown, concentrically zonate-sulcate, pore surface deep orange, fading to ochraceous, pores round to angular, 6-9 per mm, dissepiments very thin; tubes single-layered but sometimes stratified and up to 1 cm long, tubes reddish-brown near the pore mouth at least; context white, cream to wood-coloured in some specimens with a distinct horizontal dark line or zone slightly above the bottom of the tubes, , radially fibrous, up to 2 cm thick.
Hyphal system pseudodimitic; generative hyphae with simple septa, thin- to slightly thick-walled, 3-5 µm wide;, present are also thick-walled hyphae, especially in the context where septa are difficult to observe and which are reminiscent of ordinary skeletal hyphae, up to 8 µm wide.
Cystidia not seen.
Basidia 12-15 x 7-10 µm, tetrasterigmatic.
Basidiospores -4(4.5) µm, globose, thin-walled.
Distribution. Tropical America.
Remarks. This species is microscopically identical with the wide spread and very common *R. microporus* (Fr.) Overeem. However, the bright orange pore surface and the often massive basidiocarps make it easy to identify it in the field. The dark resinous line in the context seen in the type and a few other specimens, have not been seen in basidiocarps of *R. microporus*. This species has usually rather small basidiocarps and a distinct reddish pore surface when fresh.

Rigidoporus biokoensis (Lloyd) Ryvarden,
Norw. J. Bot. 19:236, 1972. - *Polyporus biokoensis* Lloyd, Lloyd Mycol. Writ. 3:131, 1912.
Basidiocarps annual, pileate and laterally stipitate, pileus dimidiate to flabelliform, up to 4 cm long and 3 cm from margin to attachment and 2-4 mm thick, upper surface smooth

with a fine adpressed tomentum, concentrically zoned, tan to dark ochraceous with pinkish tints, probably more so in fresh condition, dull to slightly shining; pore surface and tubes tan to reddish-brown, fading to ochraceous, pores round to angular, 6-9 per mm, dissepiments very thin; context cream to wood-coloured, radially fibrous, up to 1 cm thick, stipe up to 3 cm long, 2-3 mm wide, often a little bent or twisted, concolorous with the upper pileus surface and without cuticle.
Hyphal system pseudodimitic; generative hyphae with simple septa, thin- to slightly thick-walled, 3-5 µm wide;, present are also thick-walled hyphae, especially in the context where septa are difficult to observe and which are reminiscent of ordinary skeletal hyphae, up to 10 µm wide.
Cystidia numerous, smooth or with a few apical crystals, thick-walled, also present are pointed, thin-walled cystidiols, 20-25 x 10-12 µm.
Basidia 12-15 x 7-10 µm, tetrasterigmatic.
Basidiospores 4.5-5 µm, subglobose, thin-walled.
Distribution. Widely distributed in the tropical zone.
Remarks. The small stipitate basidiocarps combined with the globose spores and cystidia make this to a distinct species. It may be looked upon as a stipitate counterpart to *R. lineatus*.

Rigidoporus concrescens (Mont.) Rajchenb.,
Boln. Soc. argent. Bot. 28: 165, 1992. - *Polyporus concrescens* Mont., Ann. Sci. Nat. Ser. 2, vol 3:350, 1835. - *Rigidoporus umbonatipes* Rajchenb., Mycotaxon 28:116, 1987.
Basidiocarps annual, usually pendant and then discoid to cup-shaped or substipitate and flabelliform to spatulate solitary to caespitose in smaller group, soft when fresh, cartilaginous and hard when dry, up to 15 mm in diameter, and 2 mm thick, in spatulate specimens up to 2 x 5 cm and fused to more compound basidiocarps, upper surface pale brown, grey to umber b y age, glabrous, dull, often finely radially striate; margin thin, often split and curled when dry, pore surface cream to tan or ochraceous, pores round angular to round, tiny, 6-10 per mm, dissepiments usually finely crested or split into tiny teeth, tube layer concolorous with pore surface, up to 1 mm thick, context grey to pale brown and dense, about 1 mm thick.
Hyphal system monomitic; generative hyphae with simple septa, hyaline, thin- to thick-walled, 4-5 µm in diam in the trama, up to 10 µm in diam in the context.
Cystidia absent.
Basidia 12-23 x 4-6 µm, clavate.
Basidiospores 4-4.5 µm in diam, globose, thin-walled.
Distribution. Venezuela, Brazil, Argentina, Costa Rica and Dominican Republic and has certainly a more or less coherent distribution in the area.
Remarks. The small, usually pendant basidiocarps, the small spores and besides the lack of cystidia are diagnostic characters.

Rigidoporus crocatus (Pat.) Ryvarden,
Occ. Papers. Farlow Herb. 118:13, 1983. - *Poria crocata* Pat., Journ. Bot. 8:220, 1894.
Basidiocarps annual to perennial, effused up to 10 cm, tough, crisp when fresh, drying rigid and horny, easily separable; margin fertile or sterile, then buff, finely tomentose, up

to 2 mm wide; pore surface flesh-coloured or very light pinkish or pinkish-brown, drying pinkish brown to smoky grey, the pores circular to angular, 5-7 per mm, with thin, entire dissepiments; context pinkish-buff, azonate, corky to rigid, up to 1 mm thick; tube layer darker, distinct, pinkish tan, hard, horny, up to 3 mm thick; taste mild.
Hyphal system monomitic, subicular hyphae simple-septate, thin- to thick-walled, 3-8.5 µm in diam, gelatinizing on drying and difficult to separate; tramal hyphae similar, 3-4 µm in diam.
Cystidia or other sterile hymenial elements absent.
Basidia 17-20 x 10-12 µm, broadly clavate.
Basidiospores 3.5-5.5 x 3.5-5 µm, ovoid to subglobose.
Substrata. Dead conifers and hardwoods in several genera
Distribution. Distribution in tropical America unknown and its presence may be expected, but not yet verified.
Remarks. The horny consistency of dried basidiocarps and the deep ochraceous to pinkish or flesh-coloured pore surface that darkens on drying besides lack of cystidia characterize this species.

Rigidoporus grandisporus Ryvarden, Gomes-Silva & Gibertoni, Phytotaxa 156:191, 2014.
Basidiocarps annual, pileate, laterally stipitate, single, consistency bony hard when dry; pileus dimidiate to flabelliform or semicircular, up to 5 cm long and wide, upper surface glabrous, sulcate in distinct zones, pale to dark brown changing from zone to zone, stipe up to 3 cm long and 3 to 5 mm thick. glabrous, longitudinally wrinkled, probably smooth when fresh, dark brown and of even thickness towards the base, in section with a 50-100 µm thick cartilaginous cuticle while the inner core pale ochraceous but not cartilaginous, pore surface isabelline to pale brown, pores round, invisible to the naked eye 9-10 per mm, dissepiments very thin; tubes up to 2 mm deep, ochraceous and dense when dry, context white to wood-coloured, radially fibrous, up to 2 mm thick and with a very thin dark zone towards the tubes, in older parts of the basidiocarp with a thin dense cartilaginous curricle.
Hyphal system monomitic; generative hyphae with simple septa, thin- to slightly thick-walled, 3-5 µm wide;, in the context and trama thick-walled up to 8 µm wide with few scattered septa.
Cystidia not present
Basidia not seen.
Basidiospores 6-7 µm in diameter, globose.
Distribution. Known only from the type locality in Brazil.
Remarks. The lateral stipe, the dark brown glabrous sulcate pileus and the large spores make this a distinct species.

Rigidoporus lineatus (Pers.) Ryvarden, Norw. J. Bot. 19:236, 1972. - *Polyporus lineatus* Pers., in Gaudichaud, Voyage aut. du Monde p. 174, 1827.
Basidiocarps annual, pileate, more seldom resupinate, solitary to imbricate, sessile, substipitate or narrowing behind to a distinct stipe, consistency brittle and hard when

dry; pileus dimidiate, flabelliform to spatulate, up to 7 cm wide and broad and 0.1 to 0.5 cm thick, concentrically zonate-sulcate, pinkish buff to reddish-brown and velutinate, later wood-coloured, darker brown and glabrous, often radially striate; margin thin, often bent; stipe, if present, concolorous with the pileus, up to 7 mm long and 3 mm thick; pore surface bright orange-red when fresh, drying ochraceous to dirty greyish-brown, sometimes with a pink tint, pores round to angular, 6-9 per mm, dissepiments thin; tubes 1-4 mm long, concolorous with the context, but often slightly darker; context up to 4 mm thick, white to wood-coloured, radially fibrous.
Hyphal system pseudodimitic; generative hyphae with simple septa, in the hymenium and subhymenium thin-walled, moderately branched, 3-6 µm wide, in the trama, and especially in the context up to 8 µm wide, thick-walled to almost solid and strongly reminiscent of true skeletal hyphae as simple septa are often very difficult to observe.
Basidia 12-15 x 6-8 µm, short-clavate.
Cystidia present, rare to abundant, club like, thick-walled with slightly widened apical part, smooth to strongly encrusted, partly embedded in the trama, partly projecting obliquely into the hymenium, 6-15 µm wide, up to 200 µm long from apex to the simple septum from which they arise; cystidiols pointed, smooth, thin-walled, present among the basidia, up to 20 µm long, simple septate at the base, very difficult to observe unless basidia are developed, they may represent aborted basidia.
Basidiospores 4.5-6 x 4-5 µm, subglobose to globose, thin-walled, often with an oil drop.
Distribution. Widespread in the subtropical and tropical zones.
Remarks. *P. lineatus* is separated by its cystidia and slightly larger spores from the similar *R. microporus.*

Rigidoporus mariae Gibertoni, Gomes-Silva & Ryvarden,
Phytotaxa 156:192, 2014.
Basidiocarps annual, pileate and laterally stipitate, pileus dimidiate to flabelliform, up to 1-1.5 cm wide, 1.5 cm long and 0.1–0.2 mm thick; upper surface glabrous, concentrically zoned, dull to slightly shining, cinnamon to snuff brown; pore surface pale brown, pores angular, 10–12 per mm, dissepiments thin and entire; tubes up to 0.1 mm deep, fulvous; context homogeneous, up to 0.1 mm thick, radially fibrous, buff.
Stipe up to 0.7–1.0 cm long, 0.2–0.3 mm wide, black to snuff brown, usually concolorous with the pileus surface, without cuticle, context homogeneous, fibrous, deep ochraceous.
Hyphal system monomitic; generative hyphae with simple septa, thin- to slightly thick-walled, 3–5 (–6) µm wide;
Cystidia absent.
Basidia not seen.
Basidiospores 4–6 µm in diameter, globose.
Distribution: The species is known from the Brazilian states of Acre, Amazonas, Pará, Rondônia and Roraima.
Substrate. On soil forest and hard woods.
Remarks. The species is similar to *R. mutabilis* by its small semistipitate small basidiocarps, but the latter has globose spores while they in *R. mariae* are subglobose and larger.

Rigidoporus micropendulus Læssøe & Ryvarden,
Synopsis Fung. 27:52, 2010.
Basidiocarps minute, annual, pendant with a distinct central to lateral stipe (to 3 x 0.7 mm in living condition), pileus up to 4 mm in diameter (7 mm in living condition), often confluent, consistency firm / rubbery when fresh, cartilaginous and hard when dry, upper surface pale pinkish to beige, glabrous, azonate, pores round angular to round, tiny, 8-10 per mm, tubes to 1 mm deep, concolorous with pore surface, white to cream and staining reddish when fresh, context 200 µm thick pale pinkish. Photographs of living specimens can be seen at http://www.mycokey.com/Ecuador.html.
Hyphal system monomitic; generative hyphae 3-7 µm wide in the trama, but up to 10 µm wide in the context, with simple septa, hyaline, thin- to thick-walled.
Cystidia abundant, up to 12 µm wide and 55 µm long, hyaline, thick-walled, partly bending into the hymenium and projecting slightly above it and then slightly apically encrusted, and partly as straight thick-walled hyphal ends in the hymenium.
Basidia 12-15 x 4-6 µm, clavate, tetrasterigmatic.
Basidiospores 3.5-4 µm, globose, thin-walled.
Distribution. Known from the type locality in Ecuador and Junin province in Peru.
Remarks. The species is characterised by the tiny pendant basidiocarps and abundant cystidia. *R. concrescens* also forms confluent-fused pendant basidiocarps, but lacks the thick-walled cystidia.

Rigidoporus microporus (Fr.) Overeem,
Icon. Fung. Malayensum 5:1, 1924. - *Polyporus microporus* Fr. Syst. Mycol. 1:376, 1821.
Basidiocarps annual, more seldom perennial, occasionally resupinate but mostly pileate, sessile or broadly attached, often imbricate or growing together in clusters, consistency brittle and hard when dry; pileus dimidiate to flabelliform, up to 22 cm long and 10 cm from margin to attachment and 0,2-1,5 cm thick, upper surface first orange-reddish -brown and slightly velutinate, later glabrous and fading to wood-colour, concentrically zonate-sulcate, dull to slightly shining; margin thin and often decurrent; pore surface first bright orange to reddish-brown, fading to ochraceous, pale brown or grey, pores round to angular, 6-9 per mm, dissepiments very thin; tubes single-layered but sometimes stratified and up to 1 cm long, tubes reddish-brown near the pore mouth at least; context white, cream to wood-coloured, radially fibrous, up to 1 cm thick.
Hyphal system pseudodimitic; generative hyphae with simple septa, thin- to slightly thick-walled, 3-5 µm wide;, present are also thick-walled hyphae, especially in the context where septa are difficult to observe and which are reminiscent of ordinary skeletal hyphae, up to 8 µm wide.
Cystidia not present, but smooth, pointed, thin-walled cystidiols present among the basidia, 20-25 x 10-12 µm.
Basidia 12-15 x 7-10 µm, tetrasterigmatic.
Basidiospores 3.5-5 x 3.5-4 µm, subglobose, thin-walled.
Distribution. Widely distributed in the tropical zone, but often also found in greenhouses, mines and similar places also in the temperate zone.
Remarks. In fresh condition the reddish colour and the minute pores will be rather diagnostic; when dry it becomes paler and darker ochraceous. A microscopical

examination is necessary to separate it from the cystidiate, but otherwise similar *R. lineatus.* The species is a serious problem in the tropics on crop plants such as rubber, cacao, coconut, coffee and tea.

Rigidoporus mutabilis I. Lindblad & Ryvarden,
Mycotaxon 71:352, 1999.
Basidiocarps annual, pileate, laterally stipitate, becoming almost centrally stipitate when rear part of the pilei fuse, single or in clusters and then often fused to rosette-like or funnel shaped structures, consistency soft and fleshy when fresh, brittle, hard and bent when dry, pileus 1-2 cm wide, fan shaped to semicircular, upper surface glabrous, smooth, zonate, white with radial, zonewise pale grey or brown, drying dark grey to reddish brown with distinct zones, margin straight and thin when dry, strongly deflexed when dry, pore surface white, peach coloured to saffron when fresh drying ochraceous to pale straw coloured, pores round to angular, 8-10 per mm, dissepiments very thin, tubes up to 2 mm long, translucent and dense when dry, context white to ochre, up to 2 mm thick and homogeneous.
Stipe up to 6 mm high and 3 mm wide, tapering towards the base, very finely adpressed velutinate, ochraceous and much lighter than the pileus surface,
Hyphal system monomitic, generative hyphae with simple septa, thin- to slightly thick-walled, 3-5 µm wide, in the context and trama thick-walled up to 8 µm wide with few scattered septa.
Cystidia absent.
Basidia 10-12.5 x 7-8 µm, tetrasterigmatic.
Basidiospores 3-4 µm in diameter, globose.
Substrate. On dead hardwoods with a distinct pocket rot.
Distribution. Known only from the Guanacaste province, Costa Rica.
Remarks. This is a remarkable species with its strong colour change from almost white when fresh to reddish brown when dry, at the latter stage reminding one of *R. microporus*. The basidiocarps are distinct not only by their colour, but also by being small, semicircular and with a small lateral stipe. Such a lateral stipe is also known in *R. amazonicus*, which however, has a much larger basidiocarp and a velutinate adpressed upper surface and where the tomentum is separated from the context proper by a thin dark line.

Rigidoporus ulmarius (Sow.:Fr.) Imazeki,
Bull. Govt. Exp. Sta. Meguro 57:119, 1952. - *Polyporus ulmarius* Sow.:Fr., Syst. Mycol. 1:365, 1821.
Basidiocarps perennial, sessile, effused-reflexed, up to 6 cm thick and 30 cm long, reflexed portion up to 9 cm wide; upper surface pale buff to cream (pinkish-buff to light buff), glabrous to finely tomentose, smooth or tuberculate and with incorporated litter where development occurs under roots below the surface; margin pale buff, rounded, usually slightly bent and sterile below; pore surface pinkish buff when fresh, drying pale brownish pink (avellaneous to vinaceous buff) or discolouring darker brownish, the pores angular, 5-6 per mm, with thin, entire dissepiments; context pale buff when dried

(cartridge buff) firm, corky-fibrous, azonate, up to 5 cm thick; tube layer pinkish brown when dried (avellaneous) indistinctly stratified, up to 1 cm thick.
Hyphal system monomitic; contextual hyphae thin- to moderately thick-walled, with rare branching, simple septate, 2-4(-5) µm in diam; tramal hyphae similar, tramal tissue compact and difficult to separate.
Cystidia none; fusoid cystidiols present, barely surpassing the basidia, 18-28 x 8-9 µm, simple-septate at the base.
Basidia 15-21 x 10-11 µm, clavate, tetrasterigmatic.
Basidiospores 7-11 x 6, 5 -10 µm, globose to subglobose, becoming thick-walled.
Distribution. Circumglobal species, except for the North Temperate Zone.
Remarks. The large basidiocarps and spores separate this species from the other species in the genus.

Rigidoporus undatus (Pers.:Fr.) Donk,
Persoonia 5:115, 1967. - *Polyporus undatus* Pers.:Fr., Elench. Fung. 1:111, 1828. - *Polyporus undatus* Pers., Mycol. Europ. 2:90, 1825.
Basidiocarps resupinate, annual, effused, flat to undulating, up to 10 mm thick, tough and partly gelatinous when fresh, hard and partly cartilaginous and very dense when dry; margin narrow to almost absent, often slightly lifted in dry and old specimens; pore surface isabelline to beige only slightly darker when dry, pores circular and regular when fresh, often partly shrunken and more irregular when dry, hardly visible to the naked eye, 7-9 per mm; context very thin to almost absent, dense and cartilaginous; tube layer concolorous with pore surface, up to 3 mm thick.
Hyphal system monomitic; generative hyphae simple-septate, hyaline, usually distinctly thick-walled, 3-6 µm in diam, running parallel to the tubes and agglutinated.
Cystidia present as cylindrical thick-walled hyphal ends and usually with an apical crown of crystals, 4-10 µm in diam and up to 120 µm from the septum from which they arise, straight and embedded in the trama or bending into the hymenium, but not above it, often abundantly present; fusoid cystidiols present, thin-walled, 12-16 x 4-5.5 µm; smooth mammillate.
Basidia 10-15 x 4-5 µm, clavate, tetrasterigmatic.
Basidiospores 5-5.5(6) µm in diam, globose.
Substrata. In tropical America known only on dead hardwoods, in other parts of the world also known from conifers.
Distribution. Specimens have only been seen from Venezuela, but the species has by all probability a wider distribution in the neotropics.
Remarks. The tough consistency and beige to isabelline colour and the cystidia clearly point to a relationship with *R. vinctus* var. *vinctus*. The latter has however, more prominent swollen and coarsely encrusted cystidia. *R. crocatus* is separated by lacking cystidia, having a stratified basidiocarp with an ochraceous distinct context, and its generally cushion shaped basidiocarp, often slightly discoloured grey to pale brown or greyish black on the pore surface with drying.

Rigidoporus vinctus (Berk.) Ryvarden,
Norw. J. Bot. 19:139, 1972. - *Poria vincta* Berk., Ann. Mag. Nat. Hist. Ser. 2, vol. 9:196, 1852. There are two varieties: var.*vincta* and var. *cinerea* (Bres.) Setliff.
Basidiocarps annual to perennial, first in small patches but becoming widely effused, seldom effused-reflexed with a fragmentary pileus, up to 9 mm thick, tough when fresh, hard when dry, adnate or when old partly loosened along the margin; pore surface pale ochraceous buff to light pinkish ochraceous (var. *vincta*) becoming grey, dark brown or almost black (var. *cinerea*), pores round 6-12 per mm, almost invisible to the naked eye; pore layer indistinctly to distinctly stratified, up to 1 mm thick in each stratum, margin whitish to cream, grey to black in old specimens, velutinate to glabrous, narrow; context brown, fibrous, up to 0,5 mm thick, sometimes limited towards the substrate by a thin, black line.
Hyphal system apparently dimitic; generative hyphae with simple septa, in the subhymenium hyaline and thin-walled, in the context and trama more thick-walled, but freely branched, 2-5 µm wide, in the trama and subiculum also present are very thick-walled to almost solid hyphae in which septa are very difficult to observe, hyaline to slightly tinted, 3-7 µm wide, these may represent either skeletal hyphae or sklerified generative hyphae; gloeopleurous hyphae often present in the trama, 3-6 µm wide, with oily content, apparently absent in some collections.
Cystidia 20-70 x 8-18 µm, abundant to rare, strongly encrusted, club like and often slightly widened towards the apex where often the walls are thicker, hyaline to slightly tinted, either embedded in the trama or obliquely projecting into the hymenium, also present in fertile specimens are pointed, smooth, thin-walled cystidiols 20-25 x 6-7,5 µm, mixed with the basidia,.
Basidia 12-15 x 6-9 µm, short clavate tetrasterigmatic.
Basidiospores 4-5.5 x 3-4 µm, ovoid to subglobose, thin-walled, often slightly collapsed, becoming almost triangular.
Distribution. Widespread throughout the tropical zone.
Remarks. The resupinate basidiocarp and the large encrusted cystidia are diagnostic. The colour is remarkably variable, in the field pinkish to ochraceous basidiocarps can be observed, becoming grey to almost black when dry, in other cases the ochraceous to buff colour seems to persist.

Rubroporus Log.-Leite, Ryvarden & Groposo,
Mycotaxon 83:224, 2002.

Basidiocarps pileate, dimidiate sessile, fleshy, light in weight, upper surface glabrous, smooth to slightly tuberculate, azonate, white with reddish tints, margin light brown, sharp and entire in fresh and actively growing condition; pore surface dark red; pores angular, 2-4 per mm, tubes concolorous with pore surface, fragile, hyphal system dimitic, generative hyphae with clamps, skeletal hyphae present, partly arboriform, spores ellipsoid, smooth, thin-walled and non-amyloid. Causing a white rot in hard woods.
Type species: *Rubroporus carneoporis* Loguercio-Leite, Groposo & Ryvarden.

Remarks. This genus us remarkable by its fleshy consistency and colour besides having a dimitic hyphal system with weakly dextrinoid, arboriform skeletal hyphae.

Key to species

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

Rubroporus aurantiaca Ryvarden,
Synopsis Fung. 23: 47, 2007.
Basidiocarps stipitate, up to 8 cm in diameter, and 3-4 cm thick in centre, upper surface ochraceous, cottony, in the type partly covered with small stones and gravel from its emergence from the soil, presumably from a buried root, pore surface dark orange, pores round to angular, 5-7 per mm, hardly visible to the naked eye, tubes concolorous with pore surface, fragile when dry, up to 1 cm deep at the base, context ochraceous to pale orange dense and homogeneous, unchanged with KOH.
Hyphal system dimitic; generative hyphae with clamps, hyaline, thin-walled, 2-5 µm wide, skeletal hyphae present, 4-6 µm diam, thick-walled, hyaline and without reaction in Melzer's reagent, very rarely dichotomously branched
Cystidia absent.
Basidia clavate, 4-sterigmate, 12-18 x 4-6 µm, with a basal clamp.
Basidiospores ellipsoid, hyaline, smooth, negative in Melzer's reagent, 6-7 x 3.8-4 µm.
Substrata and Distribution. Known only from a buried root in the type locality in Belize.
Remarks. The species is characterized by its large spores and dominance of skeletal hyphae, only rarely branched. In *R. carneoporis* the vegetative hyphae are arboriform or much more branched. Further it has a fleshy reddish basidiocarp and a dimitic hyphal system with sparingly branched skeleto-ligative hyphae being slightly dextrinoid in Melzer's reagent.

Rubroporus carneoporis Loguercio-Leite, Groposo & Ryvarden,
Mycotaxon 83:224, 2002.
Basidiocarps pileate, dimidiate sessile, fleshy, light in weight, up to 13 cm wide and 8.5 cm long, and 3.0 cm thick at the base, upper surface glabrous, smooth to slightly tuberculate, azonate, white with reddish tints, margin light brown, sharp and entire in fresh and actively growing condition; pore surface dark red; pores angular, 2-4 per mm, tubes concolorous with pore surface, fragile when dry, up to 4.0 mm
deep at the base, context brownish yellow with numerous thin red concentric zones, punky, up to 2 cm thick at the base, unchanged with KOH.
Hyphal system dimitic; generative hyphae with clamps, hyaline, thin-walled, 3-4 µm wide, skeleto ligative hyphae or arboriform hyphae present (5-6 µm diam.), thick-walled, hyaline and weakly dextrinoid in Melzer´s reagent, sparingly branched in the upper part, main stems up to 10 µm wide, in the context with long unbranched lower parts, followed up to 900 µm down from first side branch, these parts may easily in broken parts been classified as skeletal hyphae, in the trama more strongly branched and narrower and

apparently without a long unbranched base, which probably is the reason for the fragile tubes in contrast to the punky context.
Cystidia absent.
Basidia 12-18 x 4-6 µm, clavate.
Basidiospores 5.2 - 6.1 x 2.7-- 3.2 µm, ellipsoid.
Substrata. Known from dead trunk of *Alchornea triplinervia* (Euphorbiaceae).
Distribution. Known from southern Brazil.
Remarks. The species is above all characterized by its fleshy reddish basidiocarp and a dimitic hyphal system with sparingly branched skeleto ligative hyphae. The latter are slightly dextrinoid in Melzer´s reagent, a reaction which is unknown in Polyporus s. str. another genus with white rot and skeleto-ligative hyphae, but where all basidiocarps are tough with white or pale wood-coloured tubes and context.

Superficially *Rubroporus carneoporis* may remind one of a *Hapalopilus* species out of which some have a distinct reddish colour. However, all species in this genus react with a strong cherry red colour with KOH, and they all have a monomitic hyphal system.

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Sarcoporia P. Karst.,

Hedwigia 33:15, 1894.

Basidiocarps annual, resupinate to effused-reflexed or sessile, white to light brown, soft when fresh, fragile when dry; pores angular; context duplex, with a dense dark gelatinous layer next to the tubes and a white, soft-fibrous layer next to the substrate; hyphal system monomitic; generative hyphae with clamps; cystidia none; basidiospores cylindrical, smooth, hyaline, slightly thick-walled, dextrinoid in Melzer's reagent; on conifers and hardwoods, causing a brown rot..

Type species: *Sarcoporia polyspora* P. Karst.

Taxanomic synonym. *Parmastomyces* Kotl. & Pouzar.

Remarks. The dextrinoid reaction of the thick-walled spores is a diagnostic character for *Sarcoporia* and indicates that the genus belongs in Coniophoraceae. Except for the spores, the genus shares the monomitic hyphal system and a distinct brown rot with *Oligoporus*.

Sarcoporia neotropica Ryvarden,

Synopsis. Fung. 30: 35, 2013.

Basidiocarps annual, pileate , broadly sessile, 3-5 cm wide and up to 1.5 cm thick in imbricate clusters, soft and fleshy, drying brittle and contracting ; pileus white, smooth when fresh, bruising or drying reddish brown and wrinkled in irregular patches; in some places with a thin dark cuticle, pore surface white, also turning reddish brown on drying, the pores circular to angular with thin dissepiments, 3-4 per mm, tubes up to 1 cm deep, white when fresh drying deep reddish wine coloured and becoming agglutinated and fragile, context white when fresh frying whitish with a faint wine red hue, up to 5 mm thick, homogenous and fragile soft shattering easily when dry

Hyphal system monomitic; contextual hyphae thin-to thick-walled, frequently branched, with clamps, 3-5 µm in diam, in the trama mostly collapsed and difficult to separate, in the context scattered gloeocystidial hyphae present, up to 6 mm wide and with large clamps and a yellowish colour.

Cystidia and other sterile hymenial elements lacking.

Basidia 12-15 x 5-7 µm, clavate, tetrasterigmatic.

Basidiospores 4-5 x 2.8-3.3 µm, ellipsoid to short cylindrical, hyaline in KOH, smooth, thick walled and dextrinoid in Melzer's reagent.

Distribution. Known only from the type locality.

Remarks. The slightly thick walled dextrinoid basidiospores, the monomitic hyphal system and the colour and consistency change under drying clearly indicate that the species belongs in *Sarcoporia* where these characters characterize the type species, i.e. *S. polyspora* P. Karst.

Schizopora Velen.,

České Houby p. 638, 1922.

Basidiocarps annual, resupinate or rarely with narrow, imbricate pilei over a decurrent tube layer; pore surface and subiculum cream to pale buff, the pores regular, angular to daedaleoid or hymenophore irregularly hydnaceous from splitting of dissepiments; hyphal system di- or monomitic; generative hyphae moderately thick-walled, with clamps; skeletal hyphae thick-walled, often ending as long nonseptate terminal segments with transitions to embedded cystidial elements; cystidia or fusoid or capitate hyphal ends present; hyphae at dissepiment edges encrusted; basidiospores ellipsoid to subglobose, hyaline, negative in Melzer's reagent. Causes a white rot of dead hardwoods, rarely on conifers. Small cosmopolitan genus of which three species occur world wide.

Type species: *Polyporus laciniatus* Velen. (=*Hydnum paradoxum* Schrad.: Fr.).

Remarks. Usually the typical generative hyphae of this genus with thickened walls and narrow width will be sufficient to recognize *Schizopora*. The bulbous swollen cystidia or hyphal ends are also diagnostic for the genus, but can be difficult to find in some specimens. Its representatives are some of the most common polypores and especially *S. paradoxa* seems very well adapted to fruit on exposed substrate, such as attached dead branches, dead trunks etc, thus usually easy to observe. With training the distinct cream to ochraceous colour of the basidiocarps will be sufficient for a field determination of the genus, which however should always be checked microscopically. The morphological variation in the genus in the tropics is great and the specific pattern is not always easy to clarify.

Key to species.

1. Pores angular 1-3 per mm or hymenophore split, sinuous, labyrinthine to irpicoid; basidiocarp always resupinate, spores 4-6.5 µm long **2**

1. Pores round to angular 3-5 per mm; basidiocarp resupinate to effused reflexed; spores 3.5-4.5(-5) µm long ..... **S. flavipora**

2. Hymenophore hydnoid-denticulate - labyrinthiform to irregular angular, dimitic, skeletal hyphae with a narrow lumen, capitate hyphal endings few spores 5.5-6.5 µm long ..... **S. paradoxa**

2. Hymenophore poroid with angular pores, sometimes a bit lacerate, monomitic, capitate hyphal endings frequent in the hymenium and he dissepiments ; spores 4-5.5 µm long..... ..... **S. radula**

NB. All spores are smooth, thin walled and non-amyloid and thus, this information is not repeated for each species.

Schizopora flavipora (Cooke) Ryvarden, s. lato

Mycotaxon 23: 186, 1985. - *Poria flavipora* Cooke, Grevillea 15: 25, 1886. –*Schizopora trichiliae* (van de Byl) Ryvarden, Prelim. Polyp. Fl. E. Afr. p. 553, 1980. - *Polyporus trichiliae* Van der Byl, S. Afr. J. Sci. 18: 262, 1922.
Basidiocarps annual, resupinate, usually developing by the fusion of a number of smaller ones, becoming widely effused, leathery when fresh, becoming corky or tough-fibrous when dried, not readily separable; margin usually sterile, whitish, fimbriate, up to 2 mm wide; pore surface whitish to cream when fresh, discolouring to buff on drying, the pores regular, angular to daedaleoid, 3-5 per mm, with thin dissepiments that often split to form an irpiciform hymenophore; context cream to buff, azonate, corky when dry, less than 1 mm thick; tube layer concolorous and continuous with the context, up to 3 mm thick; taste mild.
Hyphal system monomitic; subicular generative hyphae hyaline in KOH, thin- to thick-walled, often branched, with abundant small clamps, 2-6 µm in diam, some ending in a globose, thin-walled, swollen apex up to 12 µm in diam, others with thick-walled, nonseptate terminal segments that resemble skeletal hyphae, these with wall often thinning toward the apex; tramal hyphae similar.
Cystidia of two types present, a) smooth to sparingly encrusted, fusoid cystidia in the hymenium, projecting 12-24 x 3-4 µm, often slightly refractive in KOH, b) smooth bulbous cystidia present in subiculum and trama, rarely in the hymenium, up to 40 µm long.
Basidia 12-20 x 4-5 µm, clavate, with a median constriction, tetrasterigmatic, with a basal clamp.
Basidiospores 3.5-4.5(-5) x (2.5-) 3-3.5 µm, ellipsoid.
Distribution. Cirkumglobal and very common in the warm temperate-tropical zones. Undoubtedly this is one of the most common resupinate polypore in the tropical zone. The type came from South America and it may be that several species are involved in the fairly wide concept adopted here.
Remarks. The small spores and regular pores distinguish this species from *S. radula* and *S. paradoxa*.

Schizopora paradoxa (Schrad.: Fr.) Donk,
Persoonia 5: 76, 1967. - *Hydnum paradoxum* Schrad.: Fr., Syst. Mycol. 1: 424, 1821; Elench. Fung. 1: 150, 1828.
Basidiocarps resupinate, often extensive, on vertical substrata often with small nodules with fertile underside but no real pilei, tough, white to cream-coloured or darkening with age (greyish-ochraceous-brownish), 1-5 mm thick; hymenophore usually split and irregularly hydnoid with flattened teeth, or labyrinthine to lacerate-denticulate if poroid, pores of varying sizes, on sloping substrata more or less prolonged, near the margin the pores are shallow or net-like; margin normally not differentiated; subiculum cream to pale buff, fibrous, up to 2 mm thick; tube layer concolorous and continuous with context, up to 3 mm thick.
Hyphal system dimitic, but skeletal hyphae may be few; generative hyphae predominant, with thin or somewhat thickened walls, more or less branched, 2-3 µm in diam, with clamps at all septa; skeletal hyphae 3-4(-5) µm wide, thick-walled and with a narrow lumen, sinuous, hyaline or yellow, reaching a length of 100-350 µm; hyphal ends on the edges of the dissepiments obtuse, encrusted with granular crystals.

Cystidia present in variable numbers, usually capitate and provided with a rounded cap of a crystalline or resinous substance.
Basidia 15-20 x 4-5 µm, suburniform, tetrasterigmatic, with a basal clamp.
Basidiospores 5.5-6.5 x 3.5-4.5 µm, ellipsoid,
Distribution. Cosmopolitan species.
Remarks. Usually *S. paradoxa* will have a fairly split and irregular, often partly hydnoid pore surface, but a microscopical examination should be done to verify the determination. The skeletal hyphae will separate doubtful specimens from the following monomitic species.

Schizopora radula (Pers.: Fr.) Hallenb.,
Mycotaxon 18: 308, 1983. - *Polyporus radula* Pers.: Fr., Syst. Mycol. 1: 383, 1821. - *Poria radula* Pers., Observ. Mycol. 2: 14, 1799.
Basidiocarps annual, resupinate, adnate, effused, up to 5 mm thick; margin narrow and white; pore surface yellowish cream to ochraceous with a distinct pale orange tint; pores usually regular, angular, 1-3 per mm, dissepiments becoming lacerate and dentate with age, on sloping substrata pores are more irregular; tube layer concolorous with pore surface, up to 4 mm thick; context fibrous, thin and white.
Hyphal system monomitic; generative hyphae with clamps, hyaline, thin-walled to slightly thick-walled and of regular width, branched, 2-4 µm in diam; hyphal ends in the trama often in part with thickened walls; hyphal endings in the dissepiments thin-walled and usually covered with clusters of crystals.
Cystidia present as bulbous or capitate smooth hyphal ends in the hymenium, apex up to 6 µm in diam.
Basidia 15-20 x 4-5 µm, suburniform with a slight constriction below the sterigmata, tetrasterigmatic, with a basal clamp.
Basidiospores, 4-5 x 3-4 µm, ellipsoid.
Distribution. Widespread in Africa, but exact distribution unknown because of confusion with the dimitic *S. paradoxa*.
Remarks. The lack of true skeletal hyphae will distinguish this species from *S. paradoxa* which also has fewer bulbous cystidia and somewhat larger spores.

Serpula Pers.

Nat. Arr. Brit. Pl. I p. 637, 1821.
Basidiocarps effused - reflexed - pileate - imbricate, membranaceous, soft fleshy, thin - rather thick; hymenium meruloid - poroid, brownish, when fully developed dark brown; rhizomorphs present; hyphal system dimitic, polymorphic; generative hyphae with clamps, skeletoid hyphae or hyphal segments in context, true skeletal hyphae more or less confined to the rhizomorphs; cystidia absent; basidia clavate, with 4 sterigmata; spores broadly ellipsoid - ovoid, smooth, yellowish - brownish, with an apical germ pore, thick-walled, double-layered, immature spores cyanophilous, not or weakly dextrinoid.
Type species: *S. destruens* Pers. (syn.: *S. Iacrymans* (Wulf. :Fr.)Schroet.).

Remarks. The genus is characterized by its thick-walled browns spores and brown rot. Most species are either smooth or with a merulioid hymenophore. Two poroid species in tropical America.

Key to species

1. Spores 5-6 x 3-4 µm ..... **S. amazonica**
1. Spores 6-8 x 4-5 µm ..... **S. costaricensis**

Serpula amazonica Soares & Ryvarden in sched.
Basidiocarp pileate, sessile, dimidiate with a contracted base, semicircular, up to 4 cm in radius, 2 mm cm thick at the base, soft when fresh, lightweight and fragile when dry, upper surface glabrous, probably smooth when fresh, when dry slightly irregularly folded or wrinkled due to shrinking and without any noticeable pattern or zonation, pale brown with small darker patches where touched, lower side with a reticulate to merulioid pattern of shallow, irregular to brown shallow brown pores -2-3 pores per mm becoming more shallow towards a wide almost smooth margin, tubes brown, dense, fragile and 0.3 mm deep, deep context white, soft when fresh, partly shrunken when dry and dense, but easily indented with a nail, up to 2 mm at the base, no reaction in KOH or Melzer's reagent.
Hyphal system monomitic; all hyphae without clamp connections, in the subhymenium and the brown layer 2-4 µm wide and slightly twisted, in the context up to 10 µm wide with thin hyaline walls, straight and sparingly branched and with large clamps.
Cystidia not seen.
Basidia clavate, up to 50 µm long and 10 µm wide with a long thin tapering base, with four sterigmata and with a basal clamp connection.
Basidiospores 5-6 x 3-4 µm, ellipsoid, yellow, thick-walled, smooth and without reaction in Melzer's reagent.
Substrate. On unknown hardwood log with a brown rot.
Distribution. Known only from the type locality in Brazil.
Remarks. This species is similar to *S. costaricensis* which is a larger and more robust species with a distinctly dimidiate basidiocarp besides larger spores, i.e. 6-7 (8) x 4-5 µm. Both species are remarkable in having distinctly pileate basidiocarps of a type not seen in any other *Serpula* species. In *S. lacrymans* some basidiocarps have a narrow reflexed pileus over an effused resupinate part, but never distinct pileate basidiocarps. Further. It has larger spores (9-12 x 4.5-6 µm).

Serpula costaricensis M. Mata & Ryvarden,
Synopsis Fung. 23: 51, 2007.
Basidiocarp pileate, sessile, dimidiate with a contracted base, semicircular, up to 7 cm in radius, 1.5 cm thick at the base tapering towards a sharp margin, soft when fresh, lightweight and fragile when dry, upper surface glabrous, probably smooth when fresh, when dry slightly irregularly folded due to shrinking and without any noticeable pattern or zonation, bright yellow with small browns patches where touched , lower side with a reticulate pattern of shallow, irregular brown pores 0.5-2 mm wide and up to 0.5 mm deep becoming more shallow towards a wide almost smooth margin, tubes brown, dense,

fragile and 0.3 mm deep, context white, soft when fresh, partly shrunken when dry and dense, but easily indented with a nail, up to 1.5 cm at the base, no reaction in KOH or Melzer's reagent.
Hyphal system monomitic; all hyphae without clamp connections, in the subhymenium and the brown layer 2-4 µm wide and slightly twisted, in the context up to 10 µm wide with thin hyaline walls, straight and sparingly branched and with large clamps.
Cystidia not seen.
Basidia clavate, up to 80 µm long and 10 µm wide with a long thin tapering base, with four sterigmata and with a basal clamp connection.
Basidiospores 6-7 (8) x 4-5 µm, ellipsoid, yellow, thick-walled, smooth and without reaction in Melzer's reagent.
Type of rot. Not observed, but probably brown.
Substrate. On unknown hardwood log.
Distribution. Known only from the type locality.
Remarks. This new species is remarkable in having a dimidiate basidiocarp of a type not seen in any other *Serpula* species. The brown pore surface and the smooth yellow thick walled spores make this a characteristic species.

Sidera Miettinen & K.H. Larss.,

Mycol. Progress 10:136, 2011.
Basidiocarps annual, resupinate, becoming widely effused, soft to tough, hyphal system dimitic; generative hyphae with clamps, hyaline, thin-walled, skeletal hyphae straight to sinuous, thick-walled to solid, nonseptate, rarely branched, cystidia present as smooth thin walled cystidiols, in the poroid species hyphidia present as hyphal ends out of which many have a crystal crown, basidia clavate, tetrasterigmatic, basidiospores in the poroid species allantoid to lunate, hyaline, thin-walled, negative in Melzer's reagent. Both on hardwoods and coniferous hosts causing a white rot.
Type species: *Physisporinus lenis* P. Karst.
Remarks. The genus includes in addition to the poroid species described here, also a grandinoid corticoid species.
The type species and its sibling *Polyporus vulgaris* are both characterized by lunate spores, dimitic hyphal system and hyphidia or hyphal ends with a small crystalline crown.

Sidera vulgaris (Fr.) Miettinen,
Mycol. Progress 10:136, 2011. – *Polyporus vulgaris* Fr., Syst. Mycol 1: 381, 1821.
Basidiocarps annual, resupinate, becoming widely effused, up to 3 mm thick, soft, separable and light in consistency, margin narrow and white; pore surface white to cream or when dry yellowish cream, pores small, 5-8 per mm, tube layer white, up to 3 mm thick with thin dissepiments; context white, cottony to fibrous, soft, 1-3 mm thick.
Hyphal system dimitic; generative hyphae with clamps, thin-walled, smooth, hyaline, 2-4 µm in diam, some generative hyphae with a swollen tip in the dissepiments; skeletal hyphae thick-walled, hyaline, unbranched and straight to sinuous, 2-3 µm in diam, a few hyphae with crystal clusters which may mimic small encrusted cystidia.

Cystidia usually absent; sometimes with a few bulbous halocystidia scattered in the hymenium, embedded fusoid cystidiols variably present in the hymenium, thin-walled, smooth, 15-20 x 3-4 µm.
Basidia 8-10 x 3-5µm, clavate, tetrasterigmatic, with a basal clamp.
Basidiospores 3-4 x 1-1.5 µm, lunate to allantoid.
Substrata. Numerous hard-wood genera.
Distribution. A cosmopolitan species. In the tropical zones known only from areas with seasonal drought.
Remarks. The lunate spores and the occasional skeletal hyphae with a crystal cap characterize the species.

Skeletocutis Kotl. & Pouzar,

Ceska Mykol. 12:103, 1958.
Basidiocarps annual to perennial, resupinate to pileate, white, cream pink to lilac, often slightly discoloured when dry; pores usually small; many species with a dense cartilaginous zone above the tube layer; hyphal system di- to trimitic; generative hyphae with clamps, often encrusted, especially in the dissepiments; skeletal hyphae hyaline; cystidia absent, cystidiols present in most species; spores hyaline, cylindrical to ellipsoid, negative in Melzer's reagent; causes a white rot.
Type species: *Polyporus amorphus* Fr.
Remarks. This genus is related to *Antrodiella*. Except for the finely encrusted hyphae of *Skeletocutis*, these genera share the same basic dimitic hyphal system with skeletal hyphae and clamped generative hyphae, small, smooth non-amyloid spores and lack of cystidia.

Key to species

1. Basidiocarps resupinate **2**
1. Basidiocarps pileate **6**

2. Spores ellipsoid, 2.5-3 x 1.5-2 µm ..... **S. niveicolor**
2. Spores cylindrical to lunate, about 1 µm wide **3**

3 Spores lunate (strongly bent), scattered hyphae with an apical cap of crystals ..... **Sidera vulgaris**.
3. Spores cylindrical to slightly allantoid, no hyphae with encrusted cap..... **4**

4. Growing on dead basidiocarps of *Phellinus* sp. ..... **S. chrysella**
4. Growing on dead wood **5**

5. Margin with rhizomorphs, pore surface whitish, spores 3.5-5 µm long..... **S. alutacea**
5. Margin without rhizomorphs, pore surface pale citric yellow, spores shorter .... **S. citrea**

6. Context duplex, pileus ochraceous to chestnut, pore surface pale brown, ... **S. roseolus**

6. Context homogenous, pileus whitish to discoloured brown in patches, pore surface whitish **7**
7. Skeletal hyphae non amyloid, not dissolving in KOH..... **S. nivea**
7. Skeletal hyphae slightly amyloid, dissolving in KOH ..... **S. diluta**

Skeletocutis alutacea (J. Lowe) Jean Keller,
Persoonia 10:353, 1979 - *Poria alutacea* J. Lowe, Mycologia 38:202, 1946.
Basidiocarps annual, resupinate, effused up to 20 cm, soft, easily separated from substratum; sterile margin white to cream-coloured, cottony to fimbriate or with conspicuous, white to cream-coloured rhizomorphs up to 1 mm in diam; pore surface white to pale ochraceous buff, glancing, the pores circular to angular, 4-8 per mm, with thin, entire dissepiments that appear finely granulose; subiculum white to cream-coloured, soft-fibrous, less than 1 mm thick; tube layer cream-coloured, drying brittle and shattering when cut, up to 1 mm thick.
Hyphal system dimitic; subicular skeletal hyphae thick-walled, hyaline, nonseptate, rarely branched, 2-4 µm in diam; subicular generative hyphae thin-walled, hyaline, with clamps, rarely branched, 2.5-4.5 µm in diam; tramal hyphae similar, encrusted in dissepiment edges.
Cystidia none; fusoid cystidiols present, 11-17 x 4-5 mm, with a basal clamp.
Basidia 11-17 x 4.5-6 µm, clavate, 4-sterigmate, with a basal clamp.
Basidiospores 3.5-5 x 1-1.5 µm cylindrical to slightly curved.
Substrata. Dead wood of several hardwood genera.
Distribution. North America and presumably into the Caribbean in higher altitudes. Exact distribution not known.
Remarks. The rather soft, separable basidiocarps and the conspicuous white rhizomorphs are good field characters for *S. alutacea.*

Skeletocutis chrysella Niemelä,
Acta Bot. Fenn. 161: 13, 1998.
Basidiocarps annual, resupinate, waxy and slightly translucent, hygrophanous and cheesy when fresh, very hard when dry, usually as small patches, rarely above 2 to 5 cm in longest dimension, and up to 2 mm thick, sterile margin narrow and white, pore surface white when fresh, drying ochraceous to yellow or very pale orange and translucent, pores angular 4-6(-7) per mm, in old and mature specimens, often merging and becoming larger, 3-4 per mm, dissepiments very thin, tubes translucent as if soaked with oil or wax and up to 3 mm deep, subiculum very thin cream to yellowish.
Hyphal system trimitic; generative hyphae thin-walled, with clamps and occasional branching, 2-3.5 µm in diam often encrusted, slightly encrusted at the dissepiments edges; skeletal hyphae dominant semisolid, 2.5-4 µm wide; binding hyphae only in the subiculum, arising from generative hyphae as short, finger-like branches, solid, 2-3.5 µm wide, sometimes in coralline agglomerations.
Cystidia none; but small fusoid cystidiols present in the hymenium, thin-walled, smooth, 9.5-13 x 3-5 µm, with a basal clamp, hyphal pegs quite rare.
Basidia 7-13(-16) x 4-5 µm, clavate.
Basidiospores 3-4 x 0.7-0.9 µm, narrowly allantoid.
Substrata. On dead basidiocarps of *Phellinus,* rarely on wood rotted by this species.

Distribution. Known only from Merida at 2100 m in Venezuela, the only American specimen.
Remarks. In Europe this species is restricted to dead basidiocarps of *P. abietis*, which is restricted to coniferous wood. The Venezuelan specimen has been compared with authentic material from Finland and found to be conspecific. Mycologists are urged to look at dead *Phellinus* basidiocarps for further specimens.

Skeletocutis diluta (Rajchenb.) David & Rajchenb.,
Mycotaxon 45:144, 1992. - *Skeletocutis nivea* (Jungh.) Keller var. *diluta* Rajchenb., Mycotaxon 16: 505, 1983.
Basidiocarps annual to biannual, resupinate to effused reflexed, pileus semicircular, up to 3 cm long, 1.5 cm radius and 0.8 cm thick, pubescent and white cream when; glabrescent, light brown or dark brown upon drying and in older parts of the basidiocarp, pore surface white cream when fresh, becoming tan upon drying, pores round, 5-7 per mm, context very thin or up to 3 mm thick, homogeneous, tubes up to 2.5 mm long.
Hyphal system dimitic but appearing trimitic, generative hyphae clamped, 2-5 µm diam., with hyaline, thin to irregularly thickened walls, some totally solidified but always with clamps, in pore mouths with encrusted generative hyphae characteristic of the genus, those of the context and/or those close to the substrate develop branched arbuscular processes which are solid, 1.5-4 µm diam., resembling binding hyphae but related to generative hyphae, skeletal hyphae unbranched, 2-5 µm diam., present throughout the basidiocarp, hyaline, walls up to 2 µm thick, slightly amyloid and dissolving in KOH.
Basidia clavate (6)-8-11 x 3-4 µm.
Cystidioles present in the hymenium, thin walled, fusiform or mucronate, 7.5-10 x 2-4 µm.
Spores allantoid, 3.1-3.5 x 0.5-0.8 µm, hyaline, IKI.
Distribution. Known from Northern Argentine.
Remarks. The species undoubtedly is related to the the more widespread *S. nivea* by the identical narrow allantoid spores, but distinguished by the slightly amyloid skeletal hyphae which dissolve in KOH, two characteristics not observed in S. *nivea*.

Skeletocutis nivea (Jungh.) Jean Keller,
Persoonia 10:353, 1979. - *Polyporus niveus* Jungh., Verh. Batav. Genootsch. 17:48, 1839. - *Polyporus semipileatus* Peck, N.Y. State Mus. Ann. Rept. 34:43, 1881.
Basidiocarps annual, effused-reflexed or often resupinate, rarely sessile, pilei solitary or imbricate, dimidiate to elongate, sometimes laterally fused, up to 3 cm wide; upper surface white to cream coloured, azonate, finely tomentose to glabrous; pore surface white to cream coloured, glancing, the pores circular to angular, 8-10 per mm, with thin, entire dissepiments; context white, azonate, up to 5 mm thick; tube layer white to pale buff, distinct from context, easily sectioned, up to 2 mm thick.
Hyphal system trimitic; contextual generative hyphae thin-walled, nodose-septate, with occasional branching, 2-3.5 µm in diam; contextual skeletal hyphae thick-walled, aseptate, with rare branching, 3-5 µm in diam; contextual binding hyphae developing from lateral branches on generative hyphae, thick-walled, much branched, nonseptate, 1.5-2 µm in

diam; tramal hyphae generative, with clamps, 2-2.5 µm in diam, compactly arranged and difficult to separate.
Cystidia none; fusoid cystidiols rare and inconspicuous, 10-12 x 3-4 µm; hyphal pegs present, usually abundant.
Basidia 10-14 x 3.5-5 µm, clavate, 4-sterigmate, with a basal clamp.
Basidiospores 4-5 x 0.5-1 µm, allantoid.
Distribution. Almost cosmopolitan and known throughout the tropical zone and far into the temperate as well.
Remarks. The species is characterized by the white to irregular brownish pileus tiny pores and microscopically by the tiny allantoid spores besides the trimitic hyphal system.

Skeletocutis niveicolor (Murrill) Ryvarden,
Mycotaxon 23:187, 1985. - *Poria niveicolor* Murrill, Mycologia 12:84, 1920.
Basidiocarps annual, resupinate, effused, soft, easily separated from substratum; up to 1 mm thick, margin white to cream-coloured, pore surface white to pale cream, pores circular to angular, 6-8 per mm, with thin, entire dissepiments that appear finely granulose; tubes white, fragile, subiculum white, soft-fibrous, less than 1 mm thick.
Hyphal system dimitic; generative hyphae thin-walled, hyaline, with clamps, rarely branched, 2.-3 µm in diam; skeletal hyphae thick-walled, hyaline, nonseptate, rarely branched, 2-3 µm in diam; strongly encrusted in dissepiment edges.
Cystidia none.
Basidia not seen.
Basidiospores oblong ellipsoid, 2.5-3 x 1.5-2 µm.
Distribution. Known so far only from the type locality in Jamaica.
Remarks. The white basidiocarps and the oblong ellipsoid small spores and encrusted hyphae characterize this species. It is probably widespread in Caribbean and Central America.

Skeletocutis roseolus (Theissen) Rajchenb.
Nord. J. Bot. 7:561, 1987. - *Polystictus roseolus* Theissen, Akad. Wissensch. Wien. Math.-Naturw. Kl. 83:238, 1927.
Basidiocarps annual, effused-reflexed, pilei solitary or imbricate, dimidiate to elongate, up to 2.5 x 1.5 x o.1 cm, thin, slightly flexible, upper surface tomentose, glabrous towards the margin, cream coloured to pale chest nut slightly zonate, pore surface fuscous chestnut, margin white, pores circular to angular, 6 per mm, with thin, entire dissepiments; tubes 0.3 mm long, concolorous with pore surface, context duplex, upper part loose and lauraceous ochraceous, lower part denser and darker in colour, close to the base separated from the upper part by a thin black zone.
Hyphal system dimitic; generative hyphae thin-walled with clamps and occasional branching, 2-3 µm in diam, in places wider and up to 6 um and with the typical encrustation of the genus, some with short lateral outgrowths, skeletal hyphae thick-walled, 3-5 µm in diam.
Cystidia none; fusoid cystidiols rare and inconspicuous, 6-10 x 2-4 µm; hyphal pegs present, usually abundant.
Basidia 8-12 x 3.5-5 µm, clavate, 4-sterigmate, with a basal clamp.

Basidiospores 3.5-4.5 x 0.6-0.8 µm, allantoid.
Distribution. Known so far only from the S. Leopoldo area in southern Brazil.
Remarks. The species is similar to *S. nivea* by its small basidiocarps, small pores and the tiny allantoid spores. However, the chestnut coloured pileus and the dark tubes and pores surface separate the two species. Further, a duplex context is unknown in *S. nivea*.

Spongipellis Pat.,

Hym. Europ. p. 140, 1887.
Basidiocarps annual, pileate, broadly attached, semicircular, reflexed to semiresupinate; pileus tomentose to smooth, white to ochraceous; hymenophore poroid to dentate, pores circular to sinuous; tubes concolorous with pore surface; context white to cream, mostly duplex, lower part fibrous and dense, upper part looser and more cottony; hyphal system monomitic; generative hyphae with clamps; cystidia or other sterile elements absent; spores ellipsoid to globose, smooth, hyaline, thick-walled and IKI-, on living and dead hard wood, causing a white rot.
Type species: *Polyporus spumeus* Sowerby:Fr.
Remarks. The genus is close to *Tyromyces*, but is distinguished by the distinct duplex consistency, but above all by the thick-walled subglobose to ellipsoid spores.

Key to species

1. Hymenophore distinctly hydnoid; basidiocarps small, often effused, rarely above 8 mm thick; spores globose, 5-6.5 µm in diam ..... **S. pachydon**
1. Hymenophore poroid, spores subglobose 3-4 x 4-5 µm..... **S. caseosus**

Spongipellis caseosus (Pat.) Ryvarden,
Occ. Papers Farlow herb 14:11, 1983. - *Leptoporus caseosus* Pat., Ann. Mycol. 5:365, 1907.
Basidiocarps annual, pileate, applanate and broadly attached, 7 cm long, 5 cm wide and about 1.5 cm thick at the base, probably soft when fresh and reported to be cheese like in consistency, hence the name, fragile when dry; pileus white, then ochraceous, finely velutinate, smooth or with fine radial lines, azonate, pore surface white becoming ochraceous; pores angular, 2-4 per mm, tubes up to 10 mm deep, pale straw-coloured to cream in basal parts, context white to pale cream, up to 5 mm thick, duplex with a lower, fibrous part and an upper looser part with more or less vertical hyphal direction, but no sharp and distinct borderline between the two parts.
Hyphal system monomitic; generative hyphae with clamps, in the context hyaline, slightly thick-walled and with a rather dense protoplasm, 3-6 µm wide, in the trama rather thin-walled and same width.
Basidiospores 3.5-4.5 x 4-5 µm, subglobose, smooth, thick-walled, IKI-.
Distribution. Known only from the type locality in Sao Paulo, Brazil.
Remarks. This species is easy to recognize because of the small, subglobose and thick-walled spores.

Spongipellis pachydon (Pers.) Kotl. & Pouzar.

Ceska Mykol. 19:77, 1965. - *Hydnum pachydon* Pers. Mycol. Europ. 2:174, 1825.
Basidiocarps annual, pileate to resupinate, semicircular to broadly attached, single or imbricate with partly incised or lobed pilei, up to 5 cm wide and broad and about 1 cm thick at the base, frequently with a decurrent hymenophore, coriaceous when fresh, dense and hard when dry; pileus white, then ochraceous, azonate, first finely tomentose, soon glabrous, smooth or with fine radial lines or sharp ridges; hymenophore white to ochraceous, light brown in older parts, along the margin with dentate, flattened, short lamellae which soon are split to flattened teeth which in the top become more or less cylindrical and tapering, thus, the inner parts close to the base are distinctly hydnoid while more peripheral parts are irpicoid, teeth up to 10 mm long at the base; context white to pale cream, up to 8 mm thick, weakly duplex with a lower, rather dense and friable part and an upper looser part with more or less vertical hyphal direction, but no sharp and distinct borderline between the two parts; trama in the teeth dense and agglutinated, in old teeth as soaked with a resinous substance.
Hyphal system monomitic; generative hyphae with clamps, in the context hyaline, slightly thick-walled and with a rather dense protoplasm, 3-6 µm wide, in the trama densely agglutinated, 2.5 µm wide and with numerous oily drops in the protoplasm.
Cystidia or other sterile hymenial elements lacking.
Basidiospores 5-6.5 µm in diam, globose, smooth, thick-walled, IKI-..
Distribution. Warm temperate and subtropical areas, in America rather common in the Gulf Coast Region, but its distribution into the Neotropical zone is unknown. It is also known from Europe.
Remarks. This species is easy to recognize because of the distinctly hydnoid hymenophore and the small, globose spores.

Tinctoporellus Ryvarden,

Trans. Br. Mycol. Soc. 73:18, 1979.

Basidiocarp resupinate, pore surface bluish gray to pale violet, pores angular, 7-9 per mm, hyphal system dimitic, generative hyphae with clamps at the septa, skeletal hyphae thick-walled, hyaline to light golden yellow in KOH, weakly dextrinoid in Melzer's reagent, basidia clavate, with 4 sterigmata, spores ellipsoid to sub-globose, smooth, hyaline and IKI-, causes a white rot with reddish in zones in the substratum. On dead hard wood.

Type species: *Polyporus epimiltinus* Berk. & Br.

Remarks. The genus is easy to recognize by the beige to isabelline colour and the very hard substrate with a distinct reddish zone below the basidiocarp. It seems to be related to *Porogramme* where the same type of reddish zone can be found. David and Rajchenberg (1985) report the cultural characters of *T. epimiltinus* to be identical with those of *P. albocincta* which point to a close relationship. They are still kept separate due to differences in basidiocarp and hyphal system.

Key to species

1. Basidiospores ellipsoid, 4.5-5.5 x 2.5-3 mm, cystidia absent .....**T. epimiltinus**
1. Basidiospores cylindrical 3-3.5 x 1 mm, cystidia present in dissepiments .**T. isabellinus**

Tinctoporellus epimiltinus (Berk. & Br.) Ryvarden,
Trans. Br. Mycol. Soc. 73:18, 1979. - *Polyporus epimiltinus* Berk. & Br., J. Linn. Soc. 14:54, 1873.

Basidiocarps resupinate, adnate and widely effused, woody hard, up to 3 mm thick, distinctly delimited towards the wood which is colored in red zones; pore surface bluish gray, glaucous to light beige or violet, pores angular to round, 7-9 per mm, almost invisible to the naked eye, in ,more mature and thicker basidiocarps a few larger and somewhat elongated, on sloping substrate the pores become split in front and more irregular; margin lacking or very narrow, bluish white and mostly consisting of a thin web of hyphae; tubes up to 3 mm thick, whitish inside due to a cover of excreted crystals and old tubes stuffed with white mycelium seen in dry specimens.

Hyphal system dimitic, generative hyphae thin-walled, 1.5-2.5 µm in diameter, with clamps, often difficult to find and apparently restricted to the thin subhymenium along the tubes; skeletal hyphae 2-4 µm in diameter, hyaline to golden yellow, weakly dextrinoid, solid to semi-solid.

Cystidia or other sterile hymenial elements absent.

Basidia 10-15 x 4-6 µm, clavate, tetrasterigmatic.

Basidiospores 4.5-5.5 x 2.5-3 µm, hyaline, smooth, broadly ellipsoid to subglobose, IKI-.

Substrata. Dead standing and fallen hardwoods of all kinds.

Distribution. Pantropical, in America known from Florida to Northern Argentina.

Remarks. The species is usually easy to identify because it is the only true polypore described in this book that reddens the substrate. *Porogramme albocincta* also develop red zones in the substrate, but in this species the pores are very shallow and small, and the pore surface is bluish black. Although they have similar cultural characters, the two species are grossly different macroscopically and should be kept apart.

Tinctoporellus isabellinus Ryvarden & Iturriaga,
Mycologia 95:1072, 2003.
Basidiocarps resupinate, adnate and widely effused, woody hard, up to 2 mm thick, distinctly delimited towards the wood which is slightly coloured in red zones; pore surface deep isabelline to pale reddish violet, pores angular and thin-walled, in most parts 7-9 per mm, almost invisible to the naked eye, on sloping parts the pores are split in front and more irregular; margin lacking or very narrow, tubes up to 1 mm thick, context almost invisible, isabelline, up to 50 mm thick.
Hyphal system dimitic, generative hyphae thin-walled, 1.5-2.5 mm in diameter, with clamps, often difficult to find; skeletal hyphae 2-5 mm in diameter, hyaline to golden yellow, weakly dextrinoid, nonseptate, solid to semi-solid.
Cystidia present along the dissepiments, smooth, thin - to slightly thick-walled, up to 40 mm long and 4-7 mm wide.
Basidia , 8-10 x 3-4 µm, tetrasterigmatic.
Basidiospores 3-3.5 x 1 mm, hyaline, smooth, cylindrical, IKI-.
Distribution. Known only from the type locality in Venezuela, but is probably widespread in the Amazonian basin.
Remarks. This species is undoubtedly related to the common and widespread *T. epimiltinus* which however as ellipsoid basidiospores and no cystidia along the dissepiments. The red colouration in the wood beneath the basidiocarps in *T. isabellinus* (at least in the holotype) is rather vague and not so prominent as usually seen under the basidiocarps of *T. epimiltinus*.

Trametes Fr.,

Fl. Scand. p.339, 1835.
Basidiocarps annual to perennial, pileate, sessile, dimidiate to fanshaped, single or imbricate, flexible to hard; upper surface hispid to glabrous, often zonate; pore surface white, cream to pale gray, context white to isabelline, homogeneous or duplex, in some species with a dark line; hyphal system trimitic; generative hyphae hyaline and with clamps, skeletal hyphae straight, thick-walled to solid, hyaline, in some species swelling in KOH, binding hyphae tortuous, solid, hyaline; cystidia lacking, in some species pointed hyphal ends may penetrate the hymenium; spores ellipsoid to allantoid, hyaline, thin-walled and IKI-; causes a white rot in hard wood, rarely on coniferous wood, cosmopolitan genus with many common and widespread species.
Type species: *Trametes suaveolens* (Fr.) Fr.
Remarks. The concept adopted here is a wide one, and the following taxonomic synonyms (with indication of type species) are available for those who want to use a more

narrow concept. The one adapted here is based on pileate basidiocarps, a trimitic hyphal system, clamped genenrative hyphae and thin-walled, IKI- spores.

Taxonomic synonyms.
Lenzites, Fr., 1836 (*Lenzites betulina* L.:Fr.).
Coriolus Quél., 1886 (*Polyporus lutescens* Pers. = *Polyporus hirsutus* Wulf:Fr.).
Funalia Pat., 1900 (*Polyporus mons-veneris* Jungh. = *Polyporsu leoninus* Kl.).
Poronidulus Murrill, 1900 (*Polyporus conchifer* Schw. :Fr.).
Cyclomycetella Murrill 1904 (*Polyporsu pavonius* Hooker :Fr.).
Coriolellus Murrill, 1905 (*Trametes sepium* Berk.).
Coriolopsis Murrill 1905 (*Polyporus polyzona* Pers.).
Cubamyces Murrill 1905 (*Polyporus cubensis* Mont.).
Artolenzites Falck 1909 (*Daedalea repanda* Pers. = *Trametes elegans* (Spreng) Fr.).
Trametella Pinto Lopes 1952 (*Trametes hispida* Bagl. = *Polyporus gallicus* Fr.).
Trametopsis Tomsovsky 2008 (*Boletus cervinus* Schw.).
Leiotrametes Welti & Courtec. 2012 (*Polyporus lactineus* Berk.).
Cellulariella Zmitr. & Malysheva, 2014 (*Lenzites acuta* Berk.).
As many species in *Trametes* have similar spores or often are found I sterile condition, some specimens are difficult to determine, and considerable field experience is necessary to establish a good species concept in the genus. The basidiocarps are often strongly susceptible to attack from insects and should be treated in a deep-freezer as soon as possible after collecting.

NB. Since all spores in the genus are hyaline, thin walled, smooth and non-amyloid, and all basidia are tetrasterigmatic with a basal clamp, this information is not repeated for each species. Further, since all species described here occur on hardwoods, this information is not indicated for each species.

Excluded species:
Beihft Nova Hedwigia 97, Ad Polyporaceas VI, The genus *Trametes* 1989.
Trametes xanthopodoides Corner, Rio de Janeiro, p. 49. The type is not available.

Key to Neotropical *Trametes* species

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

Key A.

1. Hymenophore lamellate **2**
1. Hymenophore poroid, daedaleoid, semi-labyrinthine or lacerate to almost hydnoid **3**

2. Upper surface hirsute in distinct zones, context white ..... **T. betulina**
2. Upper surface more or less glabrous or slightly scrupose, context pale yellow .... **T. inaequabilis**

3. Upper surface more or less glabrous **4**
3. Upper surface hirsute to hispid **6**

4. Context cinnamon ..... **T. alba**
4. Context white **5**

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

6. Basidiocarps thin and flexible, rarely above 3 mm thick ..... **T. villosa**
6. Basidiocarps hard and rigid, up to 15 mm thick **7**

7. Context pale yellow, hymenophore with egular angulapors or irregular with lamellae an daedaleoid pores ..... **T. inaequabilis**
7. Context white, hymeophore poroid, often with dentate dissepiments **8**

8. Context duplex with a distinct black zone, at least close to the base; hymenophore split and almost hydnoid, spores 4.5-5.5 µm long ..... **T. maxima**
8. Basidiocarps up to 2 cm wide, often effused reflexed, homogenous to duplex without a black zone; hymenophore regular to slightly daedaeloid, pores about 1 mm wide, spores 7-9 µm long ..... **T. cervina**

Key B

1. Pileus hirsute to tomentose; context duplex, often with a black line between tomentum and context, at least close to the base **2**
1. Pileus adpressed velutinate and dull to subshiny or soon becoming glabrous except for margin; context homogeneous although a cuticle may develop from the base with age **5**

2. Pileus multizonate, often in different colours as tomentose and glabrous zones are alternating; pore surface white becoming pale tan with age ..... **T. versicolor**
2. Pileus azonate or with zones in different colours of white to ochraceous **3**

3. Basidiocarps up to 1 cm wide and long, pores tiny, regular, spores cylindric 6-8 x 2.8-3.5 µm ..... **T. minuta**
3. Basidiocarps usually larger, spores ellipsoid to short cylindric, up to 6 µm long **4**

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

5. Pores 1-3 per mm **6**
5. Pores 4-7 per mm 7

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

7. Dark reddish, brown or blackish cuticle spreading from the base **8**
7. No cuticle spreading form the base, upper surface white, ochraceous becoming unevenly pale brown with age **10**

8. Upper surface becoming greyish and black from base ..... **T. cingulata**
8. Upper surface becoming tan, brown to reddish from base or in zones **9**

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

10. Context pale pinkish to cafe au lait, red to brownish with KOH fading to dark spot. . **11**
10. Context white to ochraceous or cork coloured **12**

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

12. Pores 3-4 per mm, often slightly irregular, spores cylindrical **13**
12. Pores 4-5 per mm, more or less round, spores ellipsoid **14**

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

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

Trametes alba Ryvarden,
Synopsis Fung. 33:32, 2015.
Basidiocarps annual dimidiate with contracted base approximately 1 cm in diameter, or almost circular in outline, 8 cm wide and 11 cm long and 1 cm thick at base, dense and hard, pileus pure white, glabrous, slightly sulcate, margin sharp, pore surface deep cinnamon with a 2-3 mm wide sterile cinnamon coloured margin, pores sinuous-daedaleoid, 1-2 per mm measured tangentially, tubes slightly paler than pore surface, up to 3 mm deep, context deep cinnamon, dense and without zonation.
Hyphal system trimitic; generative hyphae hyaline, thin-walled, with clamps, 2-4 µm wide; skeletal hyphae dominating, yellow to golden, thick-walled to solid, 3-7 µm in diameter; binding hyphae hyaline to pale yellow, thick-walled, up to 5 µm wide, irregularly branched.
Cystidia not present, but binding hyphae project into the hymenium and may easily be interpreted as acute cystidia until a section is squashed and their hyphal nature is revealed.
Basidia clavate, 4-sterigmate, 8-15 x 4-6 µm, with a basal clamp.
Basidiospores 5-7 x 2-3 µm, cylindrical al oblong ellipsoid, hyaline, IKI-,
Substrata. Unknown hard wood tree.
Distribution. Known only from the type locality in Brazil.
Remarks. This is a striking species with the pure white, sulcate and glabrous upper surface, the cinnamon colour of the pore surface and context, besides the irregular sinuous to daedaleoid pores. In the latter aspect it is identical with the pore surface in many specimens of the widespread and common *Trametes elegans*. This species has however, much lighter coloured pore surface, tubes and context.

Trametes betulina (L.;Fr.) Pilát**,**
Atlas Champ. l'Europe, Polyporaceae (Praha) 1: 262, 1939. - *Daedalea betulina* L.:Fr., Syst. Mycol. 1:333, 1821. - *Agaricus betulinus* L.**,** Sp. pl. 2: 1176, 1753.
Basidiocarps annual, single to a few together, pileate, dimidiate to semicircular or broadly attached with a partly resupinate, effused part, 1-5 x 2-8 x 0.3-2.0 cm, margin even to lobed or incised, corky and coriaceous, upper surface tomentose to hispid in concentric, partly sulcate zones, first white, later greyish to cream, old specimens often have a greenish tint because of algae in the tomentum, hymenophore lenzitoid with thin radial lamellae, towards the margin new lamellae arise by dichotomous forking of old ones, but also individually between older ones, when young and along the margin straight, 10-15 per cm measured tangentially, about 100-200 µm thick, in older parts and when dry, mostly undulating or flexuous, thus, the distance between individual lamellae may

very considerably, first white, later cream to ochraceous, lamellae up to 12 mm deep at the base, context thin, 1-2 mm thick, fibrous and white, distinctly lighter than the lamellae.
Hyphal system trimitic, generative hyphae hyaline and with clamps, in the subhymenium 2-4 µm wide and thin-walled, in the context rather scattered, somewhat thick-walled to thin-walled and up to 5 µm wide, skeletal hyphae solid to thick-walled, 3-7 µm wide, totally dominating in the tomentum, almost solid, at least in old specimens, binding hyphae very common in both the context and trama, hyaline, thick-walled to solid, tortuous and much branched, up to 10 µm wide (in KOH), in the context with thin and whip like branches, in the trama with stouter branches and below the subhymenium with straight, thick-walled, sword like branches, more or less parallel, partly pointing into the lower part of the hymenium, but in fertile specimens never above the dense palisade of basidia.
Cystidia none, but in collapsed hymenia the sword like branches of the binding hyphae may easily be mistaken for thick-walled cystidia unless a careful examination is undertaken.
Basidia clavate and with 4-sterigmate, 15-20 µm long.
Basidiospores 5-6 x 2-3 µm, cylindrical, often slightly bent.
Distribution. Cosmopolitan species, but much rarer in the tropical zone than in temperate-boreal areas.
Remarks. The species is easy to recognize because of the hirsute to tomentose zoned pileus and the lamellate hymenophore.

Trametes cervina (Schw.) Bres.,
Ann. Mycol. 1:81, 1903. - *Boletus cervinus* Schw., Syn. Fung. Carol., p.70, 1822.
Basidiocarps annual, sessile to effused-reflexed or occasionally resupinate, up to 5 x 21 x 1.5 cm, often in large imbricate clusters; upper surface hirsute to strigose, pinkish buff to cinnamon-buff or clay color, faintly zonate to azonate; pore surface cinnamon-buff or becoming darker brown with age, the pores irregular, up to 1 mm in diam, dissepiments becoming thin and lacerate and hymenophore becoming daedaloid or almost hydnaceous; tube layer concolorous, continuous with the context, up to 1 cm thick; context pale buff, azonate, up to 1 cm thick.
Hyphal system dimitic; contextual generative hyphae thin-walled, with clamps, rarely branched, 2-4 µm in diam; contextual skeletal hyphae thick-walled, with rare branching, nonseptate, 3-5.5 µm in diam; tramal hyphae similar.
Cystidia or other sterile hymenial elements lacking.
Basidia 20-30 x 6-7 µm, clavate, 4-sterigmate, with a basal clamp.
Basidiospores 7-9(-10) x 2.5-3 µm, cylindric, slightly curved.
Substrata. Dead wood of numerous genera of hardwoods, rarely on conifers.
Distribution. Throughout the temperate regions and south to the Caribbean area.
Remarks. *Trametes cervina* basidiocarps are distinguished in the field by their pale tan color and the large irregular tubes that tend to split and form a hydnaceous hymenophore.

Trametes cingulata Berk.,
Hook. J. Bot. 6:164, 1854.
Basidiocarps annual to perennial, solitary, more rarely imbricate or fused laterally to connate rows of basidiocarps, applanate and of almost even thickness to the margin, dimidiate to semicircular with a contracted base, up to 5 cm wide and 7 cm long, 2-10 mm thick at the base, coriaceous to hard when dry, pliable when fresh, pileus first finely velvety, but soon becoming glabrous, dull to semiglossy, whitish to ochraceous in young and small specimens, soon becoming greyish to sooty black, spreading from the base, but often also in concentric zones which may be slightly sulcate, margin usually persistently whitish to ochraceous and the black colour is in older specimens quite well defined behind, more vague in the zones closer to the margin and somewhat radially furrowed, older specimens often with warts, irregular outgrowths or protuberances from the inner parts. Margin thin, round, entire and only slightly lobed, pore surface flat, cream to ochraceous, shiny when turned in incident light, pores round and regular, 4-6 per mm, fairly thick-walled, tubes up to 4 mm deep, non-stratified or zoned with up to 4 distinct layers, context cream to ochraceous, 1-4 mm thick, yellow in KOH, the upper greyish to blackish layer very thin and not present as a distinct cuticle.
Hyphal system trimitic, generative hyphae clamped, hyaline and thick-walled, 1-3 µm in diameter, skeletal hyphae abundant in the whole fruitbody, yellow and thick-walled, in the context especially golden and solid, 3-6 µm wide, often with simple secondary septa, binding hyphae also frequent, thick-walled to almost solid in the context, hyaline to yellow, 1-4 µm wide, tapering towards the ends, slightly irregular and moderately branched.
Basidiospores 5-6.5 x 3.5-4 µm, broadly ellipsoid (from spore- print).
Basidiocarps. Pantropical.
Remarks. *T. cingulata* is usually easy to recognize because of the sooty black colours on the glabrous, often concentrically sulcate pileus. There is no cuticle and the colour is restricted just to a somewhat crumbly layer of hyphae.

Trametes cotonea (Pat. & Har.) Ryvarden,
Norw. J. Bot. 19(3-4):236, 1972. - *Polyporus cotoneus* Pat. & Har., Bull. Soc. Mycol. Fr. 9:208, 1893.
Basidiocarps annual, mostly resupinate effused with elongated pilei along the upper edge single or as fused rows of semicircular pilei, more rarely applanate, broadly attached without decurrent resupinate parts, pilei often imbricate or lobed to incised, single pilei up to 5 cm wide and 3-6 cm long, papery thin and flexible, up to 3 mm thick at the base, pileus flat, undulating, creamish white to pale ochraceous, first finely velutinate, but soon glabrous and dull, usually concentrically sulcate in variable zones, often also radially furrowed, veined or striate, sometimes with warts, irregular protuberances or outgrowths at the base. Margin thin, acute and wavy, pore surface cream to pale ochraceous, sometimes with a greyish or bayish tint, pores first round and thick-walled, about 5 per mm, later more thin-walled and 3-4 per mm, often slightly radially elongated, dissepiments entire, but sometimes felty near the pore mouths, tubes up to 2 mm long,

concolorous with the pore surface, sterile margin 1-4 mm broad, context cream to pale ochraceous, cottony, 0.5-1 mm thick.
Hyphal system trimitic, generative hyphae clamped, hyaline and thin-walled, 1-3 µm in diameter, often strongly branched in the hymenium, sometimes difficult to find, more thick-walled and up to 4 µm wide in the pilear tomentum, skeletal hyphae abundant, hyaline to pale yellow, moderately thick-walled in younger parts, almost solid in older parts, 2-7 µm in diameter, often with simple secondary septa, binding hyphae abundant to sparingly present, hyaline to pale yellow, thin to thick-walled, moderately branched, 1-4 µm wide, context and pilear tomentum are dominated by solid, yellow skeletal hyphae.
Cystidia none.
Basidiospores 7-10(11) x 2.5-3.5 µm, cylindrical, difficult to find in dried specimens.
Distribution. Seemingly pantropical, in South America seen from Venezuela.
Remarks. The species is quite easy to recognize because of the thin and flexible basidiocarps with an even whitish to pale ochraceous colour, mostly widely effused with small pilei and small pores. Macroscopically, *T. membranacea* (Fr.) Ryvarden. is similar, but has much shorter spores (4.5-6 µm long).

Trametes cubensis (Mont.) Sacc.,
Syll. Fung. 9:198, 1891. - *Polyporus cubensis* Mont., Ann. Sci. Nat. Bot. II, 8:364, 1837.
Basidiocarps annual, sessile, broadly attached to dimidiate, applanate, flexible when fresh, rigid to corky when dry, up to 8 cm long, 12 cm wide and 1,5 cm thick at the base; upper surface at first finely velutinate, becoming glabrous except for an actively growing margin, white, cream to tan, becoming reddish to bay from the base, often slightly radially streaked, azonate or irregularly sulcate, margin sharp to slightly rounded; pore surface white to cream, becoming tan by age, pores small and regular, almost invisible to the naked eye, 5-7 per mm; tubes concolorous with pore surface; context white to pale cream, dense to cottony, up to 1 cm thick.
Hyphal system trimitic; generative hyphae hyaline and with clamps, 1-3 µm wide; skeletal hyphae abundant, thick-walled, hyaline to slightly tinted, 3-7 µm wide; binding hyphae tortuous, solid, 2-5 µm wide, in the hymenium present as sharply pointed hyphal ends in a candelabra-like fashion, and we interpret these as binding hyphae more than true cystidia.
Cystidia not present, but sharply pointed hyphal ends abundantly present in the hymenium strongly simulating cystidia.
Basidia 12-15 x 4-6 µm, clavate.
Basidiospores 7-9.5 x 3-3.5 µm, cylindric, slightly bent, often very difficult to find.
Distribution. Widespread in tropical America south to Brazil. In United States known from Florida and Louisiana
Remarks. Old specimens are easy to recognize by the glabrous, cream to tan pileus with a reddish layer spreading from the base and the very tiny pores, separating it from poroid specimens of *T. elegans* which have 2-3 pores per mm. Microscopically the strongly branched and sharply pointed binding hyphae in the hymenium will be diagnostic.

Trametes cystidiata I.Lindblad & Ryvarden,
Mycotaxon 71:353, 1999.
Basidiocarps annual to perennial, flabelliform, dimidiate or circular, sessile or with a short stipe-like base, 1-20 cm wide and long and 0.2-2 cm thick, corky and flexible when fresh, more rigid when dry, pileus white, cream to pale ochraceous, in some specimens with a black cuticle spreading from the base, surface very finely tomentose, soon glabrous, smooth or concentrically sulcate, often warted or with slightly uneven elevated areas and in some specimens with a mycelial outgrowth spreading irregularly from the base, margin thin, but not deflexed, even or lobed, stipe absent, but base in some specimens strongly contracted and attached to the substrate with a disc, pore surface pale cream, pores round to angular, many radially elongated, in older specimens partly split and slightly irregular, up to 8 mm long and 1-4 mm wide, tubes or lamellae up to 10 mm deep, context white to pale cream, up to 5 mm thick near the base, woody hard when dry.
Hyphal system trimitic, generative hyphae hyaline, delicately thin-walled, with clamps, 2-4 µm wide, skeletal hyphae dominating, yellow to golden, thick-walled to solid, 3-8 µm in diameter, binding hyphae only in the trama, rather rare, hyaline to pale yellow, thick-walled, up to 3 µm wide, irregularly branched.
Cystidia present in the hymenium and dissepiments as skeletocystidia, pointed to round, apically very finely encrusted, up to 10 µm diam. in the widened part, of indeterminate length, hyaline, thick-walled and without reaction in Melzer's reagent.
Basidia 10-14 x 4-6 µm, clavate.
Basidiospores , 4.5-5 x 2-2.5 µm, cylindric to oblong ellipsoid.
Distribution. Known only from the type locality in Costa Rica.
Remarks. From above, the basidiocarps of this species looks like those of the common *Trametes elegans* (Spreng.:Fr.) Fr., which however has smaller pores, often daedaloid to sinuous or even almost completely lamellate. Further, the finely encrusted cystidia seen in *T. cystidiata* are otherwise unknown in the genus. Similar structures can be seen in *Trametes cubensis* but in this species the cystidia-like structures originate as apically smooth, sharply pointed parts of binding hyphae, thus grossly different from the cystidia described here. Additonally *T. cubensis* has much smaller pores, hardly visible to the naked eye.

Trametes ectypus (Berk. & Curt.) Gilbn. & Ryvarden,
North American polypores part 2:740, 1987. - *Polyporus ectypus* Berk. & M. A. Curtis, Grevillea 1:52, 1872.
Basidiocarps annual, pileate, sessile to dimidiate or even substipitate with a short lateral contracted base, up to 8 cm wide and long, up to 5 mm thick at the base, rigid and corky; upper surface first finely velutinate, but soon glabrous from the base, some zones persistently velutinate, multizonate and sulcate, first tan to isabelline, becoming tan to dark reddish brown from the base, but color may vary from zone to zone, margin sharp and thin; pore surface cream becoming pale brown to tan, pores round to angular, 5-6 per mm; tubes concolorous with pore surface, often paler towards the context, the latter white and dense, up to 3 mm thick.

Hyphal system trimitic; generative hyphae with clamps, hyaline, thin-walled, 2-4 µm wide; skeletal hyphae thick-walled, straight, 3-7 µm wide in Melzer's solution, swelling up to 12 µm in 3% KOH, in the trama usually thinner than in context, 3-5 µm wide in Melzer's solution; binding hyphae most common in context, strongly tortuous and twisted, solid, up to 5 µm wide in the main stems.
Cystidia or other sterile hymenial elements lacking.
Basidia clavate.
Basidiospores 4.5-6 x 2-2.5 µm. cylindrical.
Distribution. South-East United States, the Caribbean area and East Asia.
Remarks. In their typical aspects with a multizonate glabrous surface in bay to brown colors and a pale tan pore surface, basidiocarps of this species are easy to recognize.

Trametes elegans (Spreng.:Fr.) Fr.,
Epicr. Syst. Mycol. p. 492, 1838. - *Daedalea elegans* Spreng. :Fr., Syst. Mycol. 1:335, 1821. - *Daedalea elegans* Spreng., Sv. Vetensk. Akad. Handl. p, 51, 1820.
Basidiocarps annual to perennial, flabelliform, dimidiate or circular, sessile or with a short stipe like base, 1-35 cm wide and long and 0.2-3 cm thick, corky and flexible when fresh, more rigid when dry; upper surface white, cream, gray, buff ochraceous or even blackish from the base in older specimens, surface very finely tomentose, soon glabrous, smooth or concentrically sulcate, often warted or with slightly uneven elevated areas, margin thin and often deflexed, even or lobed; stipe absent or up to 3 cm long, 1.5 cm in diameter, glabrous, solid, attached to the substrate with a disc up to 3 cm wide, white to pale cream; pore surface very variable, partly poroid, pores round to angular, 1-2 per mm, partly sinuous-daedaloid and radially split, up to 2 mm wide, partly purely lamellate with straight to sinuous lamellae, 4-7 per cm measured tangentially, this variation may occur in a single specimen, even in poroid specimens some parts of the hymenophore will usually have a few lamellae or sinuous pores, tubes or lamellae up to 6 mm deep; context white to pale cream, up to 15 mm thick near the base, woody hard when dry.
Hyphal system trimitic; generative hyphae hyaline, thin-walled, with clamps, 2-4 µm wide; skeletal hyphae dominating, yellow to golden, thick-walled to solid, 3-7 µm in diameter; binding hyphae hyaline to pale yellow, thick-walled, up to 5 µm wide, irregularly branched.
Cystidia not present, but binding hyphae project into the hymenium and may easily be interpreted as acute cystidia until a section is squashed and their hyphal nature is revealed.
Basidia clavate, 4-sterigmate, 8-15 x 4-6 µm, with a basal clamp.
Basidiospores 5-7 x 2-3 µm, cylindric to oblong ellipsoid.
Distribution. Widespread and common in all tropical areas.
Remarks. In their typical aspect, basidiocarps of this species are easy to recognize because of the irregular hymenophore, often changing from the base to the margin. The color and shape are very variable and numerous new species have been described based on this variation.

Trametes ellipsospora Ryvarden,
Mycotaxon 27:539, 1987.
Basidiocarps annual, dimidiate to flabelliform with contracted base, flexible, up to 6 cm long, and wide and 0.2-1 cm thick, upper surface glabrous, ochraceous, slightly zoned, in parts covered with small irregular warts, especially towards the base, pore surface cream to pale tan or straw-coloured, pores angular, 4-5 per mm; tubes concolorous with pore surface, up to 1 mm deep; context white to pale cream, dense, homogeneous, up to 1 mm thick at the base.
Hyphal system trimitic; generative hyphae with clamps, 2-5 µm wide; skeletal hyphae abundant, thick-walled, 3-10 µm wide; binding hyphae tortuous, strongly branched, solid to very thick-walled, 2-4 µm thick in the main stem.
Cystidia or other sterile hymenial elements lacking.
Basidia 15-18 x 4-5 µm, clavate.
Basidiospores 3-4 x 2.5-3 µm, ellipsoid.
Distribution. Known only from the type locality at Neblima, Venezuela.
Remarks. The thin flabelliform basidiocarps with tiny pores, and a glabrous upper surface makes this a distinct species. The small ellipsoid spores are also quite distinct.

Trametes frustrata Corner,
Beiheft Nova Hedwigia 97:35, 1989.
Basidiocarps annual effused reflexed, separable, up to 5 mm wide, , upper surface villose to tomentose, pale brown to fulvous and slightly darker by drying, pore surface white to pale brown, variable, partly poroid, pores round to angular, 1-3 per mm, partly sinuous-daedaloid and radially split and becoming irpicoid with plates and spines, context 0.4 mm thick, pale brown.
Hyphal system trimitic; generative hyphae hyaline, thin-walled, with clamps, 2-4 µm wide; skeletal hyphae dominating, yellow to golden, thick-walled to solid, 2-4 µm in diameter and dextrinoid, binding hyphae hyaline to pale yellow, thick-walled, up to 4 µm wide, abundant and dextrinoid.
Cystidia not present.
Basidia 25-32 x 8-10 µm, clavate.
Basidiospores 10-15 x 4.5-6 µm, cylindric.
Distribution. Known only from the Manuas in Amazonas, Brazil.
Remarks. This description is taken from Corners orginal one as the type has been not been available for examination.
The dextrinoid skeletal and binding hyphae set this species apart from all others described here. In many aspects, such as the large spores and the dextrinoid skeletal hyphae, it reminds one of a *Microporellus* species, and its taxonomic disposition must be decided when the type has been examined.

Trametes globospora Ryvarden & Aime,
Synopsis Fung. 26:28, 2009.
Basidiocarp annual, solitary, pileate, broadly attached, 6 cm long and 3 wide fra base to margin and up to 2.8 cm thick at the base, consistency woody hard when dry, pileus

dimidiate to semicircular, applanate, glabrous, smooth, azonate and white, margin entire and sharp slightlu bent in the dired holotype, pore surface chalky white, pores round to slightly angular and reguar, about 4 per mm, tubes concolorous with pore surface, up to 88 mm deep at the base, context up to 2 cm thick at the base, pure white, duplex, the lower part up to 1.8 cm thick at the base with a disitct radial structure, the upper prt, of looser consitcnty and with no disitnct structure and easy distinghuised fro mthe lower part.
Hyphal system trimitic, generative hyphae clamped, hyaline and delicately thin-walled, 3-6 um in diameter, skeletal hyphae abundant, hyaline thickwalled to almost solid, 3-7 um wide in the tubes, binding hyphae also abundant in the context, hyaline and trortuos ansireegularly branched, mostly solid, 3-5 µm wide in the main stem.
Basidia not seen.
Basidiospores 4.5-6 µm in diameter, globose.
Distribution. Known only from the type locality in Belize.
Remarks. The holotype may by sight be mistaken for a *Tyromyces* species due its generally white colour. However, a microscopical examination will imediately reveal a trimitic hyhal hyphal system indicating *Trametes* as the pertinent genus. The globose spores are deviating in the genus, where most species hasve cylindcial to ellipsoid spores.

Trametes inaequabilis (Berk.) Ryvarden, comb. nov.
Basionym *Daedalea inaequabilis* Berk, Lodon J. Bot. 1:374, 1843.
Lenzites acuta ibid. , 1:146, 1842, non *Trametes acuta* Lév., Annls Sci. Nat., Bot., sér. 3 2: 196, 1844. Index Fungorum 552 572.
Basidiocarps annual to perennial, pileate broadly attached or dimidiate with a contracted base, in some cases almost stipitate with a sterile base arising laterally and where part of the pileus covers the base so the basidiocarp superficially may appear centrally stipitate, pileus commonly semicircular to flabelliform, up to 15 cm wide and 25 cm long and up to 3-4 cm thick at the base in large and broadly attached basidiocarps, coriaceous when fresh, flexible when dry, pileus first dull and very finely velutinate and soft to touch, with age becoming glabrous, but without a cuticle, azonate to concentrically zonate, weakly sulcate smooth or with dotted warts and small rounded protuberances especially close to the base, first white, cream, pale ochraceous to clay-coloured or tan, then leather-coloured or dirt brownish, old and dead specimens are frequently whitish to dirty greyish, margin sharp, flat or bent downwards in thin specimens, entire or lobed, pore surface in warm buff to tan colours, mostly with a yellowish tint and this colour seems to persist even when the upper surface has become white and dirty grey, pore surface extremely variable, in some specimens poroid with 1-4 mm wide pores, mostly angular, but frequently zonewise poroid, mixed with daedaleoid to sinuous lamellae up to 5 mm wide, in other specimens purely lamellate up to 6 mm wide, lamellae straight or wavy, especially towards the base where they are deeper, pore mouths even or frequently incised and dentate, tubes or lamellae up to 12 mm deep, context cream to tan-coloured to distinctly yellowish, up to 8 mm thick.
Hyphal system trimitic, generative hyphae hyaline and with clamps 1.5-3 µm wide, skeletal hyphae straight, thin-walled and pale yellowish, up to 8 µm wide, binding hyphae common, richly-branched, solid and up to 6 µm wide at the main trunk.

Cystidia proper not present, but binding hyphae project into the hymenium and simulate subulate to rounded cystidia.
Basidiospores 6-8 x 2-3 µm, cylindrical.
Distribution. Venezuela, otherwise throughout Asia and Northern Australia and may recently been introdouced in South America, since it is unlikely tht such a conscpicuous species should have gone undetected over more than 150 years collecting of polypores in South America.
Remarks. The species has repeatedly been described from Asia as new because of the very variable hymenophore. The typical character is the yellowish to tan colour of all parts of the basidiocarp, fading on the pileus, persistent on the hymenial surface and in the context. The surface is soft and finely velutinate when fresh, later it becomes glabrous and may remind of *Trametes elegans* , which, however, has smaller pores and denser lamellae and a purely white to pale cream pore surface and a white context.

Trametes lactinea (Berk.) Pat.,
Essai Tax. p. 92, 1900. - *Polyporus lactineus* Berk., Ann. Nat. Hist. 10:373, 1942.
Basidiocarp annual to perennial, solitary to more rarely imbricate, pileate, broadly to narrowly attached, 1-15(28) cm broad and wide, and 0.2-1.2 cm thick, consistency corky to woody hard when dry, pileus dimidiate to semicircular, applanate, soft and velvety to touch, with age becoming warted or with irregular outgrowths especially near the base, mostly azonate, sometimes very slightly concentrically sulcate and zoned near the margin, somewhat radially striate, but usually not distinct, dull, first white to cream, becoming ochraceous to tan. Margin entire to weakly lobed, obtuse and relatively thick, concolorous or paler than the rest or the upper surface, especially in old specimens, pore surface cream, ochraceous to pale fulvous, slightly darker and more grey than the upper surface, sometimes discoloured when old, pores round to angular, mostly 1.5-2 per mm, but in some collections 3-4(5) per mm, dissepiments thin to rather thick, entire, tubes concolorous with the context, usually not stratified, 1-10 mm long, context 2-10 mm thick, cream, ochraceous to pale fulvous, darker brown with KOH, soft, corky to woody hard, homogeneous with vague growth zones especially near the margin.
Hyphal system trimitic, generative hyphae clamped, hyaline and delicately thin-walled, 1-4 µm in diameter, often collapsed and not easy to find in dried specimens. Skeletal hyphae abundant, hyaline to pale yellow, thin-walled to almost solid, 3-8 µm wide in the tubes, more golden and up to 10 µm in diameter in the context, binding hyphae also abundant, hyaline to pale yellow, thick-walled, arboriform to coralloid, 1-7 µm in diameter, often with short, tapering branches.
Basidia not seen.
Basidiospores not seen by us. Bakshi (1971:169) states them (from an Indian specimen) to be cylindrical-ellipsoid, 4-7.5 x 2.2-3 µm, smooth and hyaline.
Distribution. Rare in South America.
Remarks. The species is recognized by the glabrous pileus in variable ochraceous to dirty often unevenly brown colours. From above it may remind one of *T. elegans* which however has a different hymenophore. Spore prints from Neotropical specimens are desirable to verify its identity with the paleotropical taxon.

Trametes marianna (Pers.) Ryvarden,
Persoonia 7:309, 1973. - *Polyporus mariannus* Pers., in Gaudichaud, Voy. aut. Monde p. 173, 1827.
Basidiocarp annual, solitary, pileate, applanate, dimidiate to semicircular with a contracted base, up to 6 cm wide and long, up to 6 mm thick at the base, coriaceous to corky hard when dry, pileus glabrous, dull to semi-glossy, broadly zonate in flat to weakly sulcate zones, pale ochraceous to tan, a very thin cuticle absent or present, seen only in old and weathered specimens, margin sharp and entire, pore surface cream to ochraceous, darkens to pale cinnamon-fulvous in old specimens, pores round and entire, 4-6(7) per mm, tubes as pores, up to 3 mm deep, context ochraceous to cork-coloured, 1-3 mm thick.
Hyphal system trimitic, generative hyphae with clamps, 2-3 µm wide, skeletal hyphae abundant, thick-walled, hyaline, 3-7 µm wide, binding hyphae also abundant, strongly branched with thick-walled to solid side branches, 3-5 µm wide.
Basidiospores 6-7 x 2-2.5 (3) µm, cylindrical to narrowly ellipsoid.
Distribution. Pantropical species and quite rare and its circumscription is not known properly.
Remarks. The species is quite close to *T. cingulata* Berk., which, however, soon becomes sooty grey to black on the pileus and distinctly dull besides the basidiospores being 5-6.5 x 3.5-4, i.e. broadly ellipsoid. *T. marianna* is characterized by the glabrous, semi-glossy pale tan pileus, commonly in wide and sulcate zones and the fairly small pores. Fresh collections with a spore-print are very desirable.

Trametes maxima (Mont.) David & Rajchenberg,
Mycotaxon 22:315, 1985. - I*rpex maximus* Mont., Ann. Sci. Nat. Bot. ser.2, vol.8:364, 1837. **Basidiocarps** annual to biennial, pileate, dimidiate to semicircular or fanshaped or broadly sessile and often fused with adjacent basidiocarps to compound structures, coriaceous and flexible when fresh, slightly tougher when dry, up to 15 cm wide, 20 cm long and 2-6 mm thick at the base; upper surface first white to pale ochraceous, but with age pale tan or dark ochraceous, first tomentose to hirsute in narrow to white and sulcate zones and in some specimens persistently so, then often with green shades in the basal tomentum because of algal growth, in other specimens the tomentum wears away, mostly zonewise to expose a dark brown to bay, glabrous and dense cuticle, often slightly warted and zonate, margin thin, often deflexed, wavy or incised in rounded lobes; pore surface first white, soon pale yellowish brown to tan, pores angular to slightly daedaloid, 2-3 per mm, dissepiments usually dentate or incised to form an irregular hydnoid surface as they develop unevenly; tubes concolorous with pore surface, up to 5 mm deep; context dense, white to ochraceous, 2-4 mm thick, separated from the upper distinctly darker and looser upper tomentum by a distinct black zone.
Hyphal system trimitic; generative hyphae hyaline, thin-walled, with clamps, 2-4.5 µm wide; skeletal hyphae 3-8 µm wide, thick-walled, straight, unbranched and hyaline, totally dominating in the upper tomentum and the context, mixed with binding hyphae in the trama; binding hyphae intricately branched, solid, 1-4,5 µm wide.
Cystidia none, hyphal pegs hyaline and very abundant.
Basidia clavate, 18-25 x 5-7 µm.

Basidiospores 4.5-5.5 x 2-2.5 µm, cylindrical.
Distribution. Subtropical species and known from the Caribbean area and south to Venezuela and Colombia.
Remarks. This species is recognized by the hydnoid or incised pore surface and the wooly tomentum under which there is a distinct black zone. Such a zone is known also from *Trametes hirsuta* and *T. versicolor*, but both these species have even pore surfaces and smaller pores.

Trametes membranacea (Sw.:Fr.) Kreisel,
Monogr. Ciencias Univ. Habana, ser.4, no 16:83, 1971. - *Polyporus membranaceus* Sw.;Fr., Syst. Mycol. 1:370, 1821. - *Boletus membranaceus* Sw.**,** Fl. Ind. Occid**.** 3**:** 1922, 1806. - *Polyporus tenuis* Link. ex. Sacc., Syll. Fung. 6:288, 1888.
Basidiocarps annual, rarely effused-reflexed to sessile, commonly dimidiate to flabelliform with contracted base, flexible, up to 6 cm long, 8 cm wide and 2 mm thick, upper surface dull, finely adpressed velutinate, soon becoming glabrous but not shiny, first white, soon cream to pale tan, often becoming pale
brown with age, more or less distinctly multizonate and when dry with some radial lines or ridges, margin thin, often incised to lobed and wavy; pore surface white, soon becoming cream to pale tan, pores angular, usually with dentate to lacerate dissepiments, 5-6 per mm; tubes concolorous with pore surface, up to 1 mm deep; context white to pale cream, dense, homogeneous, up to 1 mm thick at the base.
Hyphal system trimitic; generative hyphae with clamps, 2-3 µm wide; skeletal hyphae abundant, thick-walled, 3-9 µm wide; binding hyphae tortuous, strongly branched, solid to very thick-walled, 2-4 µm thick in the main stem.
Cystidia or other sterile hymenial elements lacking.
Basidia clavate, 4-sterigmate, 8-12 x 4-5 µm, with a basal clamp.
Basidiospores 4.5-6 x 2-2.5 µm cylindric to oblong ellipsoid.
Distribution. Widespread and common throughout tropical America to northern Argentina.
Remarks. The thin flabelliform basidiocarps with tiny pores, and a dull, almost glabrous upper surface makes this a distinct species. *T. pavonia* has a similar type of basidiocarp with equally small pores, but with a much more hirsute to tomentose pileus. Microscopically the two species have different spores. Pale specimens of *T. versicolor* may be separated by having a much more tomentose pileus with contrasting zones. Microscopically it is separated by having narrow, cylindric spores, only 1.5-2 µm wide.

Trametes minuta Læssøe & Ryvarden,
Synopsis Fung. 27:55, 2010.
Basidiocaeps annual, pileate, dimidiate, coriaceous to flexible, up to 1 cm wide and long, and 0.5 mm thick at the base; upper surface persistently tomentose, multizonate, white to ochraceous, with a few green shades at the base due to algae in the tomentum, margin thin and wavy; pore surface white to pale ochraceous, pores round to angular, 8-9 per mm; tubes concolorous, up to 250 µm deep, dissepiments entire; context white, up to 250 µm

thick with an very thin upper black zone, approximately 50 mm thick, towards the looser tomentum.
Hyphal system trimitic; generative hyphae 2-6 µm wide, with clamps, dominating in the surface tomentum; skeletal hyphae 2-5 µm wide, thick-walled to solid, hyaline to slightly tinted, negative in Melzer's reagent; binding hyphae 1-2 µm wide, tortuous, solid, hyaline, most frequent close to the base of the basidiome.
Cystidia or other sterile hymenial elements lacking.
Basidia 12 -15 x 5-6 µm, clavate.
Basidiospores 7-8 x 2.5-3.5 µm, cylindrical.
Distribution. Known only from the type locality in Ecuador.
Remarks. This is a remarkable species, characterised by the tiny basidiocarps, and also by the fairly large spores, larger than usual for similar species such as *T. villosa* and *T. hirsuta.*

Trametes modesta (Fr.) Ryvarden,
Norw. J. Bot. 19:236, 1972. - *Polyporus modestus* Fr., Linnaea 5:519, 1830.
Basidiocarps annual, pileate, applanate to slightly concave or bent downwards, single or frequently in clusters or fused laterally to compound basidiocarps, semicircular to flabelliform with a contracted base, occasionally more broadly attached, up to 6 cm wide and 7 cm long, very rarely above 3-4 mm thick,flexible and glabrous when fresh or dry; upper surface variable with age and development, first finely velutinate and soft to velvety to glabrous and then dull, very finely concentrically zonate, pale pinkish brown to buff with pink to lilac shades or café au lait, becoming paler tan to pale brown and usually more radially wrinkled and with radial wrinkled spots or streaks, sometimes becoming whitish, azonate, frequently covered with irregular pale outgrowths spreading from the base, usually ochraceous, lacking in many specimens; pore surface pale pinkish-beige, buff to pale grayish-pink, when viewed obliquely paler and even whitish with a faint pink shade, pores round and small, 6-10 per mm and almost invisible to the naked eye; tubes more or less concolorous with the pore surface, tan to pale brown, non-stratified and up to 2 mm deep; context whitish to pink, beige or pale cocoa, becoming pale cinnamon-pink or very pale tan with age, fibrous, up to 2 mm thick, red in KOH, fading after 2-5 seconds, but persistent as a pale cherry red spot when dry.
Hyphal system trimitic; generative hyphae thin-walled, hyaline, with clamps, 2-4 µm wide; skeletal hyphae straight, pale pink to yellow, thick-walled, but usually with a distinct lumen, 2-5 µm in diam, not swelling in KOH; binding hyphae scarce in the context, sparingly branched, more common and more densely branched in the dissepiments, thick-walled to solid, 2-3 µm wide.
Basidia 10-15 x 3-5 µm, clavate.
Basidiospores 4.5-6 x 1.5-2(-2.5) µm cylindrical.
Distribution. Widespread in the tropics.
Remarks. Specimens of *T. modesta* may be confused with those of *Fomitopsis feeii* which however have a more distinct pink color and cause a brown rot. It is very difficult to find spores in specimens of *T. modesta* and numerous specimens have to be examined before

a reliable spore measurement can be made. The pale isabelline color with a lilac tint, and the outgrowth from the base are good field characteristics.

Trametes ochroflava Cooke,
Grevillea 9:12, 1880. – *Daedalea microsticta* Cooke, Grevillea 10122, 1882. - *Trametes obstinator* Corner, Beiheft Nova Hedwigia 97:41, 1989.
Basidiocarps annual, pileate, applanate, dimidiate, imbricate, single up to 10 cm wide and long, upper surface ochraceous becoming pale brown with age, smooth to tuberculate, glabrous and then dull pore surface ochraceous, pores angular 3-5 per mm, uneven and ridged, but entire and elongated, up to 12 mm deep, tubes more or less concolorous with the pore surface, context whitish to ochraceous, 5-12 mm thick and without crust.
Hyphal system trimitic; generative hyphae thin-walled, hyaline, with clamps, 2-4 µm wide; skeletal hyphae straight, pale pink to yellow, thick-walled, but usually with a distinct lumen, 2-5 µm in diam, not swelling in KOH; binding hyphae scarce in the context, sparingly branched, more common and more densely branched in the dissepiments, thick-walled to solid, 2-4 µm wide.
Basidia and **Basidiospores** Not known.
Distribution. Known from scattered localties in Mexico, Cuba, Jamaica, Costa Rica, Honduras, Trinidad and Brazil.
Remarks. The species is recognized by the smooth, glabrous and pale yellow-orange pileus, and the fairly large, in parts, irregular pores.

Trametes olivaceopora Ryvarden & Iturriaga,
Mycologia 95:1073, 2003.
Basidiocarps annual, pileate, applanate to slightly concave or bent downwards, single, semicircular, up to 3 cm wide and 5 cm long, up to 2.5 cm thick at the base, tough when fresh, dense and hard when dry, upper surface glabrous, dull, narrowly concentrically zonate, deep ochraceous, to pale brown pore surface deep olivaceous brown, pores round, , thick walled, 5-7 pr mm, tubes concolorous with the pore surface, non-stratified and up to 4 m deep context ochraceous to deep cream, up to 2 cm thick.
Hyphal system trimitic; generative hyphae thin-walled, hyaline, with clamps, 2-4 mm wide; skeletal hyphae straight, pale pink to yellow, thick-walled, but usually with a distinct lumen, 2-6 mm in diam, binding hyphae tortuous, solid, 2-4 mm wide.
Basidia 15-18 x 5-7 mm, clavate.
Basidiospores 6-7 x 2-2.5 mm, cylindrical.
Distribution. Known only form the type locality in Venezuela.
Remarks. This is a perplexing species because of the dark coloured pore surface and tubes.In this respect it is slightly reminiscent of the perennial *Fomitella supina*, but this species has larger basidiospores (7-9 x 3-3.5 mm) and develops a crust from the base of the pileus rather soon in its development.

Trametes pavonia (Hook) Ryvarden,
Norw. J. Bot. 19:237, 1972. - *Boletus pavonius* Hook. in Kunth., Syn. Pl. 1:10, 1822. -*Polyporus pavonius* (Hook.) Fr., Epicr. Syst. Mycol. p. 477, 1838.

Basidiocarps annual, pileate, sessile, dimidiate to flabelliform, often fused laterally or occurring as imbricate clusters, coriacious to flexible, up to 10 cm wide and long, usually smaller, up to 3 mm thick at the base; upper surface persistently tomentose, multizonate, white to ochraceous, becoming buff to pale unevenly dirty brown in old specimens, slightly shiny, often with green shades at the base because of algae in the tomentum, margin thin and wavy; pore surface white to pale ochraceous, pores round to angular, in old specimens slightly elongated radially, 5-6 per mm; tubes concolorous, up to 1 mm deep, dissepiments entire; context white, fibrous but denser in lower part, 1-2 mm thick.
Hyphal system trimitic; generative hyphae with clamps, 2-6 µm wide, dominating in the surface tomentum; skeletal hyphae thick-walled to solid, hyaline to slightly tinted, 2-5 µm wide, most common in lower part of context and trama; binding hyphae tortuous, solid, hyaline, 1-2 µm wide, most common close to the base of the basidiocarp.
Cystidia or other sterile hymenial elements lacking, but hyphal pegs present.
Basidia 8-12 x 4-5 µm clavate.
Basidiospores -, 5-6 x 3-4 µm, ellipsoid.
Distribution. Widespread and common in tropical America to northern Argentina.
Remarks. The pores of *T. pavonia* are hardly visible to the naked eye, while they are easily seen and larger in the otherwise similar *T. villosa.*

Trametes roseola Pat. & Hariot,
J. Bot. (Paris) 14:239, 1900.
Basidiocarps annual to perennial, solitary, pileate, broadly attached to effused-reflexed, elongated to semicircular, up to 8 cm wide and broad, 5-20 mm thick near the base. Consistency soft corky when fresh, drying to tough and corky, pileus convex, upper surface finely velvety tomentose, with age more glabrous, but not glossy, surface azonate, but often a bit irregular with small warts and shallow depressions. Colour first white-greyish to pale ochraceous buff, later darker buff or more pale dirty brown, margin obtuse, thick, even to slightly lobed, pore surface pink to vinaceous buff, when old more dirty brownish, cracking on drying, pores round to slightly angular, 5-8 per mm, dissepiments fairly thick, entire, tubes pale ochraceous grey, up to 5 mm deep, in older specimens often stratified. Sterile margin 1-3 mm broad, context pink to cork-coloured, brown in KOH, fading and leaving a pale greyish spot, 1-20 mm thick, usually homogeneous, but sometimes with a few weak concentric zones.
Hyphal system in the context and dissepiments dimitic, generative hyphae clamped, hyaline and thin-walled, 1-4 µm in diameter, moderately branched from the septa, but also more thick-walled and yellowish. Skeletal hyphae abundant, hyaline to pale brownish, thick-walled, usually with a distinct lumen, 2-4 µm in diameter, weakly-branched and with few secondary simple septa. Real binding hyphae not seen.
Basidia
Basidiospores 4.5-7 x 2.5-3 µm, cylindrical to oblong ellipsoid.
Distribution. Wide spread in the paleotropical area, specimens have only been senen from Venezuela in the neotropical area.
Remarks. The relatively thick basidiocarps with a whitish-grey to buff azonate pileus, the small pinkish pores and the pale pink to buff context without binding hyphae proper are

the important characteristics. It seems to be closest to *T. modesta*, but does not share its cherry red reaction in KOH and binding hyphae are present in T. modesta.

Trametes supermodesta Ryvarden & Iturriaga,
Mycologia 95: 1074, 2003.
Basidiocarps annual, pileate, applanate to slightly concave or bent downwards, single semicircular to flabelliform with a contracted base, occasionally more broadly attached, up to 3 cm wide and 5 cm long, very rarely above 3-4 mm thick, flexible, upper surface glabrous, dull, narrowly concentrically zonate, deep ochraceous pore surface pale pinkish-beige, buff to pale grayish-pink, pores angular to irregular, 3-4 per mm, in parts larger, tubes more or less concolorous with the pore surface, tan to pale brown, non-stratified and up to 2 mm deep; context whitish to pink, beige or pale cocoa, becoming pale cinnamon-pink or very pale tan with age, fibrous, up to 2 mm thick, red in KOH, fading after 2-5 seconds, but persistent as a pale cherry red spot when dry.
Hyphal system trimitic; generative hyphae thin-walled, hyaline, with clamps, 2-4 mm wide; skeletal hyphae straight, pale pink to yellow, thick-walled, but usually with a distinct lumen, 2-5 mm in diam, binding hyphae scarce in the context, sparingly branched, more common and more densely branched in the dissepiments, thick-walled to solid, 2-3 mm wide.
Basidia 10-15 x 3-5 mm, clavate.
Basidiospores 8-9 x 2.8-3.5 mm, cylindrical.
Distribution.Venezuela.
Remarks. In colour this species is identical with *T. modesta,* but easily separated from this species by its large pores and long basidiospores.

Trametes tyromycoides Ryvarden,
Mycotaxon 76**:** 355, 2000.
Basidiocarps pileate, broadly sessile, partly imbricate, individual pilei applanate, shelf-like and tough when fresh, slightly contracted, deflexed and dense when dry, up to 1.5 cm thick at the base and 5 cm wide and long, upper surface glabrous, slightly tuberculate and partly radially lined, first whitish, later more discoloured in cream and pale brown colours, pore surface whitish when fresh, resinous brown when dry, pores thin-walled, angular to wavy, but entire, 5-8 per mm, tube layer concolorous with pores, up to 10 mm thick, context whitish becoming ochraceous and strongly contrasting the resinous brown tubes.
Hyphal system dimitic, generative hyphae hyaline, with clamps, 3-5 µm wide, skeletal hyphae scattered in the trama, predominant in the context, solid to thick-walled, hyaline, mostly unbranched, occasionally with a dichotomous branching and some as if twisted, negative in Melzer's reagent, 3-8 µm in diam.
Cystidia and other sterile hymenial elements absent.
Basidia 15-20 x 5-6 µm with basal clamps and 4 sterigmata.
Basidiospores 6.5-7.5 x 2.8-3.2 µm, cylindrical.
Distribution. Known only from the type locality on Jamaica.
Remarks. The species is characterized by the contrast between the white to ochraceous context and the resinous brown porelayer in dry condition.

Trametes versicolor (L.:Fr.) Pilát,
Atl. Champ. Eur. 3:261, 1936. - *Boletus versicolor* L., Sp. Plant., p.1176, 1753. - *Polyporus versicolor* L.:Fr., Syst. Mycol. 1:368, 1821.
Basidiocarps annual, sessile or effused-reflexed, dimidiate, often in large imbricate clusters; upper surface hirsute to tomentose, highly variable in color, with sharply contrasted concentric zones of various shades of brown, buff, reddish-brown or bluish colors; pore surface cream-colored to cinereous, the pores angular to circular, 4-5 per mm, dissepiments thick; context cream-colored, tough-fibrous, with a thin black layer below the surface tomentum, up to 5 mm thick; tube layer concolorous and continuous with the context, up to 3 mm thick.
Hyphal system trimitic; contextual generative hyphae thin-walled, with clamps, 2.5-3 µm in diam; contextual skeletal hyphae thick-walled, nonseptate, 4-6 µm in diam; contextual binding hyphae thick-walled, nonseptate, much branched, 2-4 µm in diam; tramal hyphae similar.
Cystidia or other sterile hymenial elements lacking.
Basidia clavate, 4-sterigmate, 15-20 x 4-5 µm, with a basal clamp.
Basidiospores -, 5-6 x 1.5-2 µm, cylindric and slightly curved.
Distribution. Throughout forest regions of America. Circumglobal species.
Remarks. This is probably the most common wood rotting fungus on dead hardwoods throughout America. Its basidiocarps are very variable in the color and zonation on the pileus.

Trametes villosa (Fr.) Kreisel,
Monogr. Ciencias Univ. Habana, Biol. Ser.4, no 16:84, 1971. - *Polyporus villosus* Fr., Syst. Mycol. 1:344, 1821.
Basidiocarps annual, pileate, dimidiate to flabelliform, more rarely effused-reflexed, often fused laterally to form compound basidiocarps, flexible, up to 7 cm wide and long, up to 2 mm thick at the base; upper surface strigose to hirsute, white, gray to unevenly pale to dirty brown, distinctly zonate with persistent tomentum, margin thin, undulated to lobed, often curled in dry specimens; pore surface white to cream, with age becoming more brownish, pores angular, thin-walled, 1-3 per mm, often slightly elongated radially in a characteristic way, dissepiments usually dentate to lacerate, tubes up to 1 mm deep, context white and thin.
Hyphal system trimitic; generative hyphae with clamps, hyaline, thin-walled, 1-2.5 µm wide; skeletal hyphae hyaline, thick-walled to solid, 2-5 µm wide; binding hyphae tortuous, solid, hyaline, common, 1-2.5 µm wide.
Cystidia or other sterile hymenial elements lacking, but hyphal pegs occurring.
Basidia 10-15 x 4-6 µm, clavate.
Basidiospores 5.5-8.5 x 2.5-3.5 µm, cylindric to allantoid.
Distribution. Southeastern United States, southward in America to northern Argentina.
Remarks. Usually easy to recognize because of the thin pliable basidiocarp with a hirsute pileus and the large pores with dentate pore mouths. *T. pavonia* has much smaller pores, while *T. hirsuta* is a thicker and larger species with smaller pores.

Trechispora P. Karst.,
Hedwigia 29:147, 1890.

Basidiocarps annual, resupinate, mostly soft and fragile, loosely attached; hymenial surface smooth to hydnaceous or poroid; hyphal system monomitic in most species; generative hyphae with clamps, commonly ampullate at some septa; cystidia present or absent; basidia clavate, 4-sterigmate; basidiospores globose to short-cylindrical, smooth or ornamented with spines or warts, negative in Meltzer's reagent. All species with a white rot.
Type species: *Trechispora onusta* P. Karst.
Trechispora is a large genus in Corticiaceae and most species have a smooth to hydnaceous hymenial surface. Three Neotropical poroid species are included here.

Key to Neotropical poroid species of *Trechispora*

1. Skeletal hyphae present ..... **T. brasilensis**
1. Skeletal hyphae absent **2**

2. Encrusted cystidia present in hymenium ..... **T. regularis**
2. Cystidia absent from hymenium ..... **T. mollusca**

Trechispora brasiliensis (Corner) K.H. Larss.**,**
The genus *Trechispora* (Corticiaceae, Basidiomycetes) 3: 4, 1992. - *Cristelloporia brasiliensis* Corner**,** Beih. Nova Hedwigia 96: 22, 1989.
Basidiocarp annual, resupinate to effused reflexed, often widely effused, up to 20-30 cm long and filling cavities in the rotten wood and 4 mm thick, upper surface white, adpressed cottony, up to 1 cm wide and 10-15 cm long in fused specimens, margin cottony with long white to pale yellow rhizomorphs, taste mild, consistency cottony to coriaceous, pore surface cream to pale yellow, pores at first angular 2-4 per mm, later irregular and larger, dissepiments thin and entire becoming more incised, context white to cream coloured, cottony and of loose consistency and thin.
Hyphal system dimitic, generative hyphae hyaline, thin- walled, with clamp-connexions, 2-3 µm in diam. skeletal hyphae yellow to golden and thick-walled, 3-4 µm wide, often with secondary simple septa. Needle-like crystals present among the hyphae, 10-20 x 0.5-2 µm.
Basidia 10-13 x 4.5 µm, clavate to urniform.
Cystidia hyphoid, hyaline, smooth and thin walled, 18-27 x 3-4.5 µm usually tapering towards the apex, weakly projecting and often difficult to observe.
Basidiospores (3.5) 4-5 x 3- 3.5 µm, broadly ellipsoid or irregular in shape, hyaline and thin-walled, asperulate, with spines about 0.5 µm long,
Distribution. Known from Brazil and Venezuela besides Ghana in Africa.
Remarks. The effused reflexed soft white basidiocarp often with distinct rhizomorphs is good field characters. The dimitic hyphal system sets the species easily apart from the other poroid *Trechispora* species in the area.

Trechispora mollusca (Pers. :Fr.) Liberta,
Can. J. Bot. 51:1878, 1973. - *Polyporus molluscus* Pers.:Fr., Syst. Mycol. 1:384, 1821. - *Boletus molluscus* Pers., Syn. Fung. p. 547. 1801.
Basidiocarps annual, resupinate, effused up to 6 cm, very soft and fragile, readily separable; margin white, often very thin, arachnoid, rhizomorphic; pore surface white to cream coloured, the pores angular, 2-4 per mm, with thin, pubescent dissepiments that become lacerate with age; context white, azonate, soft, less than 0.5 mm thick; tube layer continuous and concolorous with the context, soft and fragile, up to 2 mm thick; taste mild.
Hyphal system monomitic; subicular hyphae thin-walled, hyaline, often ampullate and incrusted, frequently branched, with clamp connections, 2.5-5 µm in diam; tramal hyphae similar.
Cystidia and other sterile hymenial elements lacking.
Basidia short-cylindrical, 4-sterigmate, 4.5-5.5 µm in diam, up to 14 µm long.
Basidiospores 3.5-4.5 x 2.5-3.5 µm, ovoid to subglobose, hyaline, negative in Meltzer's reagent, echinulate.
Distribution. Cosmopolitan species.
Remarks. *Trechispora mollusca* occurs over a wide latitudinal range in America. It is sympatric with *T. regularis* from southern United States and south to Argentine, and can be differentiated by its lack of cystidia.

Trechispora regularis (Murrill) Liberta,
Can. J. Bot. 51:1878, 1973. - *Poria regularis* Murrill, Mycologia 12:87. 1920.
Basidiocarps annual, resupinate, effused up to several cm, soft and fragile, easily separated from substratum; pore surface white to cream coloured, the pores angular, irregular, mostly 5-7 per mm but larger in some areas, with thin, floccose dissepiments; margin white, loosely floccose to arachnoid, with white mycelial strands or slender rhizomorphs; subiculum thin, soft, arachnoid, very thin; tube layer white to cream coloured, soft and fragile, up to 2 mm thick.
Hyphal system monomitic; subicular hyphae thin-walled, hyaline, with frequent branching, with abundant clamps and some simple septa, often ampullate at the septa, 2-6 µm in diam.; tramal hyphae similar.
Cystidia abundant, cylindrical, thin-walled heavily incrusted with elongated crystals, 40-60 x 4-6 µm, with a basal clamp.
Basidia 12-14 x 5-6 µm, broadly clavate.
Basidiospores 4-4.5 x 3-3.5 µm, subglobose to ovoid, echinulate, hyaline, negative in Meltzer's reagent.
Distribution. From the Gulf Coast Region in United States to northern Argentina.
Remarks. *Trechispora regularis* is quite similar to *T. mollusca* , but is readily recognized by the conspicuous encrusted cystidia.

Trichaptum Murrill,

Bull. Torrey Bot. Club 31:608, 1904.

Basidiocarps annual, resupinate, effused-reflexed or pileate; upper surface hispid to adpressed tomentose, blackish, grey or dirty white; hymenophore irpicoid, lamellate or poroid, mostly pale brownish to purplish when actively growing, tubes brownish, context distinctly duplex, lower part dense and dark, upper part white and loose; hyphal system di- to trimitic; generative hyphae with clamps; skeletal hyphae dominate in the basidiocarps; binding hyphae rarely present, apparently absent or at least very difficult to demonstrate; cystidia present in the hymenium, thin-to thick-walled, subulate to clavate, smooth or apically encrusted; spores cylindrical to ellipsoid, smooth, hyaline, IKI-, thin-walled. On both coniferous and deciduous wood, causing a white rot. Cosmopolitan genus.
Type species: *Polyporus trichomallus* Berk. & Mont. (a synonym of *Trichaptum perrottetii* (Lév.) Ryvarden, - based on the same type specimen).
Remarks. The genus is characterized by the purplish to violet pore surface in actively growing specimens, paling to buff or pale brown in age and on drying. Microscopically the dimitic hyphal system, the cylindric spores and the cystidia are diagnostic.

NB Since all species have hyaline, smooth, thin-walled and non-amyloid spores and all basidia are tetrasterigmatic with a basal clamp, this information is not repeated for each species.

Key to Neotropical species

1. Basidiocarps pileate **2**
1. Basidiocarps resupinate 11

2. Pileus glabrous to adpressed tomentose mixed with glabrous zones **3**
2. Pileus strongly strigose to hispid **9**

3. Pores large, 5-8 per cm, whole basidiocarp dense and deep purplish to almost black..... ..... **T. sprucei**
3. Pores smaller, basidiocarps greyish, clay coloured to pale brown..... **4**

4. Hymenophore distinctly hydnoid ..... **T. griseofuscens**
4. Hymenophore poroid **5**

5. Basidiocarps rarely above 3 mm thick, flexible, petaloid to fan shaped or effused reflexed often in clusters, pileus velutinate to hirsute **6**
5. Basidiocarps usually 1 to 10 cm thick, dense and hard, usually single, pileus glabrous..7

6. Pore surface grey to black, pores entire, upper surface often grey to whitish.....**T. sector**

6. Pore surface pale violet when fresh fading to beige or pale brown, pores often lacerate with tendencies to becoming irpicoid, upper surface grey to deep beige, often in dense zones ..... **T. biforme**

7. Pores irregular at least in parts, 1-2 per mm or longer, pore surface split by age, basidiocarp brown ..... **T. variabilis**
7. Pores regular and round, pore surface even, basidiocarps greyish to clay coloured..... **8**

8. Pores 8-10 mm, hardly visible to the naked eye, basidiocarps often bluish grey, up to 2 cm thick, generally small ..... **T. durus**
8. Pores 3-4 per mm, basidiocarps greyish to clay coloured or brown, up to 14 cm thick in massive specimens ..... **T. fumosoavellanea**

9. Pileus with a dense mat of dark brown to black strigose to hispid hairs, basidiocarps sessile ..... **T. perrottetii**
9. Pileus with gray to pale brown hirsute hairs; basidiocarps resupinate, effused-reflexed or sessile **10**

10. Pores 1-2 per mm, spores cylindrical 5.5-8 x 2-2.5 mm ..... **T. byssogenum**
10. Pores 2-4 per mm, spores ellipsoid, 4.5-6 x 2.5-3 mm ..... **T. strigosum**

11. Bulbous cystidia present, pores 2-4 per mm ..... **T. bulbocystidiatum**
11. Bulbous cystidia absent, pores 5-7 per mm ..... **T. deviatum**

Trichaptum biforme (Fr. in Kl.) Ryvarden,
Norw. J. Bot. 19:237, 1972. - *Polyporus biformis* Fr. in Kl., Linnaea 8:486, 1833.
Basidiocarps annual, sessile ; pilei solitary or imbricate, dimidiate to flabelliform or spatulate, up to 6 cm wide and 3 mm thick; pileus surface grey to buff, hirsute to glabrous with age, zonate; margin acute; pore surface purple to violaceous or fading to pale buff, often becoming irpiciform, the pores angular, 3-5 per mm; dissepiments become thin and lacerate or splitting to form spines; context pale buff, azonate, tough-fibrous, up to 1.5 mm thick; tube layer violaceous or concolorous with context, up to 2 mm thick.
Hyphal system dimitic; contextual generative hyphae thin-walled, with clamps, occasionally branched, 2.5-6 µm in diam; contextual skeletal hyphae thick-walled, nonseptate, rarely branched, 3-6 µm in diam; tramal hyphae similar.
Cystidia 20-35 x 3-5 µm, abundant, slightly thick-walled, fusoid, apically encrusted, and projecting to 20 µm.
Basidia 12-22 x 4-5.5 µm, clavate.
Basidiospores 6-8 x 2-2.5 µm cylindrical, slightly curved.
Distribution. Throughout America, except in the boreal zone and a circumglobal species.
Remarks. The species is usually easy to recognize in the field with its imbricate clusters of semi-spatulate basidiocarps with a hirsute to tomentose pileus, often mixed with glabrous zones. The pore surface has a nice delicate violet tinge when actively growing,

fading however, to pale ochraceous or brown when dry. Very common in temperate and subtropical hardwood forests.

Trichaptum bulbocystidiata Ryvarden,
Synopsis Fung. 32: 64, 2014.
Basidiocarps annual, resupinate. up to 8 cm long, 3 cm wide and 0.4 mm, flexible and tough, margin determinate and narrow, pore surface grey, pores slightly irregular round to elongated, 2-3 (4) per mm entire and in parts almost merulioid, tubes concolorous, up to 200 µm deep, subiculum whitish to 100 µm in cracks of the substrate.
Hyphal system dimitic; generative hyphae thin-walled, with clamps, occasionally branched, 2.5-4 mm in diam; skeletal hyphae thick-walled, 3-5 mm in diam; hyaline to pale brown.
Cystidia of two types, 1) slightly ventricose and tapering towards the apex which is covered with a small crystal crown. thick walled, up to 30 µm long and 6 µm wide, often in clusters, 2) bulbous with a distinct smooth and thick walled apex, up to 15 µm diameter, thick walled, but in some cystidia the more thin walled apex has collapsed and give the cystidia appearance of a flattened head, up to 45 µm from the clamp from which they arise, most abundant in the trama and the dissepiments, weakly dextrinoid.
Basidia not seen.
Basidiospores not seen.
Distribution. Known only from the type locality in Costa Rica.
Remarks. The bulbous cystidia and the greyish resupinate basidiocarp with irregular pores, are all rather characteristic and should make it rather easy to recognise, both in the field and under a microscopical examination.

Trichaptum byssogenum (Jungh.) Ryvarden,
Norw. J. Bot. 19:237, 1972. - *Polyporus byssogenus* Jungh., Verh. Botav. Genootsch. 17:43, 1838.
Basidiocarps annual, resupinate to effused-reflexed or sessile; upper surface matted-tomentose to hispid or strigose, chestnut brown, wearing away, surface finally greyish-tan, coarsely strigose; pore surface purplish when fresh, dull purplish- brown on age and drying, the pores circular to angular, 1-2 per mm, with thick entire dissepiments that become thin and lacerate, in older specimens often split and partly sinuous to daedaleoid with a tendency to become lamellate towards the margin, context pale wood-brown, soft, spongy and fibrous, up to 3 mm thick; tube layer sharply distinct from context, pale wood brown, rarely two-layered, up to 1 cm thick.
Hyphal system dimitic; contextual generative hyphae thin-walled, with inconspicuous clamps, 2-3.5 µm in diam; contextual skeletal hyphae hyaline, thick-walled, aseptate or with rare clamps, with rare branching, 2-4 µm in diam; tramal hyphae similar.
Cystidia 15-35 x 3-6 µm, abundant, fusoid, thin- to moderately thick-walled, apically encrusted.
Basidia 14-17 x 5-6 µm clavate.
Basidiospores 5.5-8 x 2-2.5 µm, cylindrical, slightly curved.
Distribution. Pantropical species.

Remarks. The large pores, loosely fibrous context, and the abundant encrusted cystidia characterize *T. byssogenum*. Apparently all *Trichaptum* species cause a similar fragile, lacy white pocket rot with empty pockets.

Trichaptum deviatum Ryvarden,
Synopsis Fung. 32: 65, 2014.
Basidiocarps perennial, resupinate, in the type 8 x 4 cm and 1 mm thick, tough when dry, margin partly present, pale grey and cottony, up to 2 mm wide, pore surface evenly grey with some brown tinges or shades, the pores circular to angular or even split due to growth on a sloping substrate, 5-7 per mm dissepiments farinose by projecting cystidia, tube layer up to 0.5 mm deep, tubes walls greyish with a dark brown trama, context 100 µm thick, dark brown to almost black sharply constricting the greyish inner walls of the tubes, in older part of the basidiocarp with up to 5 layers each about 60-100 µm thick separated by thin whitish zones.
Hyphal system dimitic; generative hyphae thin-walled, with inconspicuous clamps, 2-3.5 µm in diam; skeletal hyphae hyaline to yellowish brown in context and inner trama, thick-walled, , 2-4 µm in diam and without reaction in Meltzer's reagent.
Cystidia abundant, scattered in the hymenium, numerous in the dissepiments and there partly as endings of skeletal hyphae and with an apical crown of crystals, moderately thick-walled, 15-40 x 3-6 µm.
Basidia 12-17 x 5-6 µm, clavate.
Basidiospores 4.5-6 x 1.7-2 µm, cylindrical.
Distribution. Known only from the type locality in Venezuela.
Remarks. This species is deviating in the genus by being resupinate and having 5-7 pores per mm, whilte the other resupinate species included here,.i.e. *T. bulbocystidiata*, has cystidia and 2-3 pores per per mm. The spores are also smaller than in the other Neotropical species.

Trichaptum durus (Jungh.) Corner,
Beiheft Nova Hedwigia 86:219, 1987. - *Polyporus durus* Jungh. Verh. Batav. Genootsch. 17:62, 1838.
Basidiocarp, usually rather small, solitary or imbricate, applanate to ungulate, mostly dimidiate with a contracted base, more rarely broadly attached on a decurrent pore surface, up to 8 cm long and 6 cm wide, 2-20 mm thick at the base, woody hard, pileus first finely tomentose and then pale brownish to dirty greyish, soon more glabrous and then dingy greyish to almost blackish, smooth, tuberculate or warted, mostly azonate, margin rather acute, pore surface dark brown, dark bluish-grey to chocolate, pores round and entire, almost invisible to the naked eye, 8-10 per mm, tubes up to 5 mm deep, vinaceous brown, dark brown or almost blackish, indistinctly zonate, tubes often with a white lining of a hymenium, more or less collapsed in dry specimens, context bone hard, umber to dark brown or vinaceous brown, up to 10 mm thick.
Hyphal system dimitic, generative hyphae with clamps, hyaline and thin-walled, often difficult to find, 2-4 µm wide, skeletal hyphae thick-walled to almost solid, 4-10 µm wide, pale yellowish to fuscous or fuliginous.

Cystidia 7-13 x 5-6 µm, common to rare, ventricose, thin-walled, usually with a slight apical encrustation that easily falls off in microscopic preparations.
Basidia 6-10 x 3-4 µm, clavate.
Basidiospores 3.5 5 x 2-2.5 µm, broadly ellipsoid.
Distribution. Pantropical species, but rather rare in tropical America.
Remarks. The species is in most cases easy to recognize in the field because of the often warted of tuberculate pileus in greyish-blue to umber or blackish colours, a very hard consistency and almost invisible pores. The cystidia are often very difficult to observe in dry and old specimens.

Trichaptum fumosoavellanea (Romell) Rajchenb. & Bianch.,
Nord. J. Bot. 11:225, 1991. - *Trametes fumoso-avellanea* Romell, Bih. Kung. Sv. Vet. Akad. Hand 26, ser. 3, no 16:37, 1901.
Basidiocarp, annual to perennial, sessile, dimidiate to broadly attached, often slight triquetrous in section, 2-16 cm wide, 4-17 cm long and up to 14 cm thick at the base, woody hard, pileus first finely tomentose and then pale reddish brownish to dirty greyish, soon more glabrous and then dingy greyish to clay coloured, often becoming black from the base in old specimens, azonate, often sulcate to rugulose and covered with mosses from the base in old specimens, margin rather blunt often with a violaceous tint, pore surface vinaceous brown, dark reddish brown, violaceous to clay coloured when dry, dark pores round and entire, about 3 per mm. tubes up to 9 cm deep, when stratified up to 1 cm in each layer, concolorous with the pore surface, context corky and coloured as upper surface, up to 5 cm thick.
Hyphal system trimitic, generative hyphae with clamps, hyaline to pale brown, and thin-walled to slightly thick-walled, 2-4 µm wide, skeletal hyphae thick-walled to almost solid, 2-5 µm wide, pale yellowish to fuscous or fuliginous, binding hyphae few, 2-3 µm wide, thick-walled, not solid, 2-3 µm wide.
Cystidia 12-16 x 5-7 µm, common to rare, clavate to ventricose, thin-walled to slightly thick-walled, apically encrusted with a small crown of crystals that quickly dissolve in KOH and thus, the abundant cystidia may be overlooked.
Basidia 13-15 x 5-6 µm, clavate.
Basidiospores 3.5 5 x 2-2.5 µm, broadly ellipsoid.
Distribution. From Northern Argentine and Paraguay to Costa Rica and Nicaragua, but not common.
Remarks. The species is in most cases easy to recognize in the field because of the pileus in greyish- to clayish or reddish brown colours, rather small greyish pores and a dense and massive basidiocarps in old specimens.

Trichaptum griseofuscens (Mont.) Ryvarden & Iturr.,
Mycologia 95: 1074, 2003. - *Irpex griseofuscens* Mont., Ann. Sci. nat. Bot. Ser. 4, no 1:137, 1854.
Basidiocarps annual, resupinate to effused reflexed. up to 4 cm long, 2 cm wide and 5 mm thick, flexible and tough, Pileus semicircular to elongated, pale brown to clay brown, dull, adpressed velutinate, faintly zonate, margin acute; lower side hydnoid, when young

and along the margin with shallow angular pores where the walls soon split up to round to flattened teeth, up to 4 mm long and 1 mm wide, concolorous with the pileus, context 0.5 mm thick, duplex, with a denser lower part and a looser upper constituting the adpressed tomentum.
Hyphal system dimitic; generative hyphae thin-walled, with clamps, occasionally branched, 2.5-4 mm in diam; skeletal hyphae thick-walled, 3-5 mm in diam; yellow to pale brown.
Cystidia abundant in the hymenium slightly thick-walled, fusoid, smooth, 12-16 x 4-6 mm and with a basal clamp; also present in the context and then wider and more rounded.
Basidia 12-16 x 4-5 mm, clavate.
Basidiospores 6-7 x 1.5-2 mm, cylindrical, slightly curved.
Distribution. Known from the north Eastern part of South America
Remarks. The species is unique in the genus with it's coarsely hydnoid hymenophore and the finely velutinate adpressed clay to brown coloured pileus. It should be easy to recognize in the field.

Trichaptum perrottetii (Lév.) Ryvarden,
Norw. J. Bot. 19:237, 1972. - *Polyporus perrottetii* Lév. Ann. Sci. Nat. Ser. 3. Vol. 2:167-221, 1844. - *Polyporus trichomallus* Berk. & Mont., Ann. Sci. Nat. Bot. Ser. 3. Vol. 11:238, 1849.
Basidiocarps applanate, sessile, semicircular to elongated, shelf-like, mostly broadly-attached, usually not decurrent on the substratum, 5-15 cm long, 3-7 cm wide and up to 2 cm thick tough and flexible; upper surface with a black to dark brown, densely entangled layer of strigose and forked hairs, darker towards the base and more greyish towards the margin, azonate or weakly-zonate, up to 10 mm thick at the base; margin entire and sharp; pore surface at first violet, on drying becoming snuff brown, pores angular to round, first entire and thin-walled, 2-3 per mm, in older specimens with incised dissepiments, coalescing and in parts sinuous to daedaleoid, in the latter case up to 2 mm wide and several mm long; tubes deep brown, 2-5 mm deep; context very thin, 0.1-0.4 mm, brown to dark ochraceous.
Hyphal system dimitic; generative hyphae thin-walled, hyaline and with clamps, 2-4 µm wide; skeletal hyphae abundant, thick-walled to solid, nonseptate, mostly yellowish to light brown, 3-5 µm wide.
Cystidia abundant in the hymenium, clavate to ventricose with a tapering apex, smooth or with an apical crown of crystals, 10-18 µm long, slightly projecting.
Basidia 12-15 x 4-6 µm, clavate.
Basidiospores 5-7 x 2-3(3.5) µm, cylindrical to oblong ellipsoid.
Distribution. Neotropical species from Florida in United States south to northern Argentina.
Remarks. This species is easy to recognize in the field due to the dense dark mat of stiff black hairs on the pileus and the violet to brown pore surface- *T. byssogenum* is greyer and has a thinner tomentum and is normally effused-reflexed. Microscopically the two species are similar.

Trichaptum sector (Ehrenb.:Fr.) Kreisel,
Ciencias Ser. 4. Cienc. Biol. no 16:84, 1971. - *Boletus sector* Ehrenb., Horae Phys. Berol., p.86,1820. - *Polyporus sector* Ehrenb.:Fr., Syst. Mycol. 1:505, 1821.
Basidiocarps annual, pileate, broadly attached or dimidiate to flabelliform or effused reflexed, single or imbricate, coriaceous when fresh, flexible when dry, up to 5 cm wide and long, 1-4 mm thick, several basidiocarps often fused laterally; upper surface white to ochraceous buff, zonate, adpressed velutinate to tomentose, often slightly shiny and radially fimbriate (lens); margin wavy when fresh, curled in when dry, pore surface grey, dark brown to almost black, pores angular 3-6 per mm, often slightly dentate to lacerate in mature specimens; tubes concolorous, up to 1 mm deep; context duplex, lower part denser and almost as dark as the tube layer, upper layer white to grey and cottony, 1-2 mm thick.
Hyphal system trimitic; generative hyphae with clamps, 2-6 µm wide, dominating in the tomentum of the pileus; skeletal hyphae thick-walled, pale brown, nonseptate, mostly parallel, 2-4 µm wide; binding hyphae solid, tortuous, much branched, 1-2 µm wide.
Cystidia 15-20 x 4-7 µm, clavate to fusiform, thick-walled, apically encrusted, embedded to slightly projecting,.
Basidia 8-12 x 4-6 µm, clavate.
Basidiospores 6-7 x 2-2.5 µm, cylindrical-oblong to ellipsoid.
Distribution. Neotropical species, widespread and locally very abundant from the south-eastern United States to east Texas and south to North Argentina.
Remarks. The species is usually easy to recognize because of the dark greyish to almost black pore surface and the small subshiny white to pale buff basidiocarps.

Trichaptum sprucei (Berk.) Rajchenb. & Bianchin,
Mycol. Research 96: 956, 2000. - *Daedalea sprucei* Berk., Hook. J. Bot. 8:236, 1856. - *Hexagonia erubescens* Berk., Ibid. p. 237, 1856.
Basidiocarp perennial, solitary or imbricate, pileate, effused-reflexed or entirely resupinate, broadly attached, semicircular to dimidiate, flat to slightly concave, variable in size, 3-40 cm wide, 2-20 cm measured radially and 0.7-8 cm thick, often triangular in section, consistency sometimes flexible in thin specimens, but usually woody hard when dry, upper surface first finely tomentose and ochraceous to pinkish fawn, soon agglutinating and glabrous and darkening to almost black in old specimens sometimes covered with green algae, concentrically zoned and sulcate, often uneven and warted, irregularly cracking up both in radial and tangential direction making the surface highly coarse, margin thin to rather thick, most often acute, entire, usually greyish to brown, pore surface hazel to deep sepia or cigar-brown with a pinkish or greyish tinge when dry, initially poroid to daedaleoid and labyrinthine, radially elongated, becoming lamellate to irpicoid, more seldom consistently poroid with crenulated dissepiments, 5-8(9) per cm measured tangentially near the margin, dissepiments rigid, often undulate and slightly fimbriate, thin to rather thick, tubes or lamellae up to 8 cm deep, homogeneous or indistinctly stratified, context medium brown, up to 1 cm thick, but most usually 1-2 mm, in effused specimens often difficult to observe, fibrous, homogeneous or slightly zoned reflecting the growth stages.

Hyphal system trimitic, generative hyphae clamped, hyaline and thin-walled to slightly thick-walled, 2-3 µm in diameter, fairly abundant, but sometimes difficult to demonstrate in old specimens, skeletal hyphae abundant in the whole basidiocarp, thick-walled to almost solid, yellow to pale brown, 4-5 µm in diameter, binding hyphae rather scanty, hyaline to pale yellow, appearing solid, 2-2.5 µm wide, often with short and tapering branches.
Cystidia numerous, present as ventricose bodies, slightly tapering, projecting and embedded at various levels, those near the hymenium thin-walled and hyaline, sometimes with apical encrustation on the older ones, thick-walled and yellow to pale brown, 13-27 x 5-7 µm .
Basidia not seen, the hymenium seemingly collapse very rapidly when drying..
Basidiospores 4-5.5 x 2-3 µm, ellipsoid.
Distribution. Pantropical, in South and Central America from Brazil to Costa Rica.
Remarks. *T. sprucei* is recognized in the field by its massive and very hard basidiocarps with dark brown colours (margin violet in actively growing specimens) and the large irregular pores. Microscopically the many ventricose cystidia are diagnostic.

Trichaptum strigosum Corner,
Beiheft Nova Hedwigia 86:288, 1987.
Basidiocarps annual, sessile, applanate up to 5 cm in radius; upper surface hispid to strigose becoming matted-tomentose with age, tomentum first dark brown weathering to greyish-tan, often with a slight violet tinge at the margin in actively growing specimens; pore surface purplish when fresh, dull purplish- brown on age and drying, the pores subangular, slightly radially elongated with age and becoming irregular in places, but not irpicoid, 2-4 per mm, with thick entire dissepiments, tubes concolorous with pore surface, up to 3 mm deep, context pale wood-brown, soft, spongy, lacunose and fibrous, up to 3 mm thick.
Hyphal system dimitic; contextual generative hyphae thin-walled, with inconspicuous clamps, 1-3.5 µm in diam; contextual skeletal hyphae hyaline to pale brown, aseptate or with rare clamps, with rare branching, 2-4 µm in diam; tramal hyphae similar.
Cystidia 10-14 x 2-5 µm, abundant, fusoid, thin- to moderately thick-walled, apically encrusted, also present are penetrating skeletal hyphae with slightly encrusted tips.
Basidia 14-17 x 5-6 µm clavate.
Basidiospores 4.5-6 x 2.5-3 µm, ellipsoid.
Distribution. Amazonian species, described from Brazil, but found several places in Southern Venezuela as well.
Remarks. The fairly large pores, the strigose brown to grey pileus, the loosely fibrous context, and the encrusted cystidia characterize this species. It is undoubtedly close to *T. byssogenum* but separated by smaller pores and smaller spores (6-9 x 3.5-4 µm in *Trichaptum byssogenum*).

Trichaptum variabilis Ryvarden & Iturriaga,
Mycologia 95: 1074, 2003**.**
Basidiocarps perennial, resupinate, effused reflexed to sessile, pileus up to 10 cm long, 4 cm wide and 2 cm thick at the base, woody hard, pileus semicircular to elongated, deep ochraceous to brown, dull and glabrous, smooth to slightly tuberculate, concentrically zonate, margin acute; pore surface evenly brown, pores angular to irregular and daedaleoid, in old parts of the basidiocarps, partly split into irregular clusters of dentate to lacerate pores, 1-2 per mm in regular parts, radially elongated or daedaleoid to 5 mm long with wavy pore walls in older parts, tubes concolorous with pore surface and up to 1 cm thick, context up to 1 cm thick at the base, dense, homogenous and deep olivaceous brown.
Hyphal system dimitic; generative hyphae thin-walled, with clamps, occasionally branched, 2.5-4 mm in diam; skeletal hyphae thick-walled, 3-5 mm in diam; yellow to pale brown.
Cystidia abundant in the hymenium thick-walled, fusoid to round and with an apical crown of small crystals, 12-16 x 4-6 mm and with a basal clamp.
Basidia 12-16 x 4-5 mm, clavate.
Basidiospores 4.5-6 x 2.2-2.5 mm, ellipsoid.
Distribution. Known only from Venezuela.
Remarks. The species is reminiscent of *T. fumosoavellaneum* which however has minute pores and generally a more clay brown colour.

Tyromyces P. Karst.,

Rev. Mycol. 3, no. 9:17, 1881.
Basidiocarps annual, pileate to resupinate, short-lived and sappy when fresh, usually rigid and fragile when dry, often with shrinking, taste mild to bitter; upper surface mostly white, drying darker; pore surface white to cream, drying darker; hyphal system mono- or dimitic; generative hyphae with clamps; gloeopleurous hyphae present in some species; cystidia absent, but cystidiols sometimes present, spores hyaline, thin-walled, allantoid to ovoid, IKI-, on deciduous or coniferous wood with a white rot. Cosmopolitan genus.
Type species: *Tyromyces chioneus* (Fr.) P. Karst.
Remarks. The genus is restricted to species with generally white, pileate and short-lived basidiocarps with clamped generative hyphae and a white rot. Some species have a restricted number of skeletal hyphae in the trama. Future research may show a closer relationship to species in *Ceriporiopsis* which includes resupinate species with more or less the same characteristics. In both genera, no true cystidia are known, no structures react to Melzer's reagent, and all spores are hyaline and thin-walled. Thus, there are rather few characteristics left for a further splitting of the genera. From numerous other genera we know that macro- morphological characters such as pore shape and size, type of basidiocarp, type of tomentum etc. are easily adaptable characters of little value on a generic level.

Key to Neotropical species of *Tyromyces*

1. Basidiocarps stipitate, semistipitate to pendant ..... **Key A**
1. Basidiocarp sessile-dimidiate **2**

2. Basidiospores allantoid to cylindrical ..... **Key B**
2. Basidiospores globose to ellipsoid ..... **Key C**

Key A

1. Pileus warm chocolate brown or cinnamon **2**
1. Pileus differently coloured 3

2. Basidiospores allantoid, pileus warm chocolate brown ..... **T. polyporoides**
2. Basidiospores broadly ellipsoid to subglobose, pileus cinnamon..... **T. cinnamomeus**

3. Basidiocarps distinctly reddish, basidiospores shorter than 8 µm in longest dimension..... **4**
3. Basidiocarps differently coloured **5**

4. Basidiospores 8-10 µm long ..... **T. aquosus**
4. Basidiospores 4.5-5 x 2-2.5 µm ..... **T. costaricensis**

5. Basidiocarp pendant, basidiospores subglobose 4-5 x 3.5-4.5 µm..... **T. navarrii**
5. Basidiocarp flabellate to semistipitate basidiospores oblong ellipsoid 6-8 mm long ..... **T. singeri**

Key B
Basidiospores allantoid to cylindrical

1. Gloeocystidia present..... **T. hypocitrinus**
1. Gloeocystidia absent **2**

2. Context duplex, lower part cinnamon, upper part white ..... **T. duplex**
2. Context homogenous, white to ochraceous **3**

3. Basidiospores 5-6 mm long, pores 3-4 per mm, bulbous cystidia present in the dissepiments ..... **T. nodulosus**
3. Basidiospores shorter than 5 mm, cystidia absent in the dissepiments **4**

4. Pore surface greenish ..... **T. subviride**
4. Pore surface differently coloured **5**

5. Pileus pale reddish to dark brown, pores 2-7 per mm **6**
5. Pileus surface whitish to pale yellow, pores 7-9 per mm **8**

6. Pileus strigose by bundles of stiff dark brown hairs ..... **T. neostrigosus**
6. Pileus adpressed velutinate to glabrous **7**

7. Pileus pale reddish brown, basidiospores 4-4.5 x 1.5-2 mm wide..... **T. preguttulatus**
7. Pileus chocolate brown, basidiospores 3-4 x 1.2-1.5 mm..... **T. americanus**

8. Pileus velvety to tomentose, basidiocarps 1-2 cm thick ..... **T. leucomallus**
8. Pileus glabrous, basidiocarps rarely more than 3 mm thick **9**

9. Spores allantoid 3-4.5 x 1-1.5 µm ..... **T. caesioflavus**
9. Spores cylindrical to oblong ellipsoid 4.5-5 x2-2.5 µm ..... **T. costaricensis**

Key C

Basidiospores ellipsoid to globose

1. Basidiocarps contracting strongly and become dense and resinous with drying..... **2**
1. Basidiocarps not contracting and becoming dense and resinous by drying..... **3**

2. Upper surface hirsute to velvety, whitish to ochraceous grey, basidiospores 5-5.5 x 4-4.5 mm..... **T. subgiganteus**
2. Upper surface glabrous, dirty white to pink, basidiospores 3.5-4.5 x 2.5-3.2 mm..... ..... **T. venustus**

3. Context duplex with or without a dark line **4**
3. Context homogenous **6**

4. Pores 1-3 per mm, gloeoecystidia present ..... **T. angulatoporia**
4. Pores 7-10 per mm, gloeocystidia absent **5**

5. Pores 7- 9 per mm, a dark resinous zone separating upper and lower part..... **T. limitatus**
5. Pores 8-12 per mm..... **T. semilimitatus**

6. Pileus radially fimbriate, strigose to distinctl y hirsute..... **7**
6. Pileus glabrous to finely tomentose or velvety **8**

7. Pileus reddish rown when frsh, drying tan to rusty brown, pores 1-3 per mm, irregular , tubes rusty brown, spores oval to almost dropshaped 4.5-6 x 3.5-4.5 µm.. **T. pulcherrimus**
7. Pileus greyish brown, radially fimbriate to strigose, 2-3 pores per mm, tubes white, spores ellipsoid 6-8 x 3.5-4 µm ..... **T. mexicanus**

8 Upper surface white to grey becoming beige to pale reddish brown, soon glabrous, strong odour of anise when fresh and becomes brown when bruised in fresh condition .... **T. atroalbus**
8. Upper surface white to cream or ochraceous, no distinct smell of aniseed when fresh and more or less unchanged when bruised in fresh condition **9**

9. Pileus glabrous, basidiospores globose 4-5 µm in diameter..... **T. oxyporoides**
9. Pileus velvety to tomentose or scrupose, may become glabrous with age, basidiospores ellipsoid to subglobose..... **10**

10. Pores 1-3 per mm..... **11**
10. Pores smaller..... **13**

11. Pore surface dentate to hydnoid with flattened teeth, spores subglobose, 5-6 x 4.5-5.2 µm ..... **T. irpiceus**
11. Pore surface more or less even, spores ellipsoid shorter than 5 µm in longest dimension..... **12**

12. Pileus white and silky velvety, pores angular 3-5 per mm, basidiospores 3.5-4.5 x 2.5-3.5 mm ..... **T. xuchilensis**
12. Pileus white to cream, tomentose to scrupose, becoming glabrous in parts, pores round to angular, 4-6 per mm, basidiospores 4-5 x 2.5-3.5 mm ..... **T. pseudolacteus**

13. Context black and dense, upper surface radially fibrous ..... **T. spatulata**
13. Context ochraceous, upper surface velutinate ..... **T. diffisus**

NB. Since basidia in all species are tetrasterigmatic, and all species have hyaline, smooth, thin walled and non-amyloid spores, this information is not repeated for each species. Further, since all species, unless otherwise is indicated, all species do occur on hard woods, also this is information is likewise not repeated for each species.

Tyromyces americanus (Reid.) Ryvarden & Iturriaga,
Mycologia 95: 1076, 2003. - *Buglossoporus americanus* D. A. Reid, Mem. N. Y. Bot. Garden 28:179, 1976.
Basidiocarp sessile, annual, effused reflexed with small spatulate or dimidiate pilei, individual pilei 2-4 cm long, 3 cm wide, 1 cm thick at the base, upper surface chocolate brown, matted, adpressed velutinate to almost glabrous and smooth, pore surface cream to greyish ochraceous, pores thin-walled, angular, 4-5 per mm; tubes up to 1 mm deep, context probably fleshy and sappy when fresh, in the type cheesy and light of weight, up to 5 mm thick at the base.
Hyphal system monomitic in context, generative hyphae with clamps, 3-8 µm wide, in the trama dimitic with scattered skeletal hyphae 2-5 µm wide besides ordinary generative hyphae.
Cystidia or other sterile hymenial elements absent.

Basidia 8-10 x 3-4 µm, clavate.
Basidiospores 3.2-4 x 1.2-1.5 µm, cylindrical to slightly allantoid,.
Distribution. Only known from the type locality in Costa Rica.
Remarks. The species is characterized by the chocolate pileus and the small spores.

Tyromyces angulatopora Ryvarden,
Synopsis Fung. 35:48, 2016.
Basidiocarps sessile, annual, dimidiate, pilei 3 x 3 cm and up to 0.8 cm thick at the base, flat when fresh, slightly curled and contracted when dry, upper surface pale brown, matted, adpressed velutinate to irregularly finely rugulose, azonate, pore surface white when fresh, pale ochraceous when dry, pores thin-walled, angular, 1-3 per mm, some even up to 2 mm wide in the dry holotype, tubes concolorous, up to 3 mm deep, context duplex, lower part dense and ochraceous and coherent with pore tubes, 200 -300 µm, upper context up to 0.5 cm, very pale brown and of cottony consistency and without separating dark line towards the lower part,.
Hyphal system monomitic, generative hyphae with clamps, 3-8 µm wide in the trama, in the context 5-9 µm wide and thick walled in 3 % KOH.
Gloeocystidia present, smooth, hyaline, thin walled and irregular of outline, 15-40 x 6-16 µm, IKI negative.
Basidia 15-20 x 5-8 µm, tetrasterigmatic and with basal clamp.
Basidiospores globose, 4-5 µm in diameter, some 4-5 x 3.5-4.5 µm.
Distribution. Only known from the type locality in Colombia.
Remarks. The species is similar to *T. semilimitatus*, which however has much smaller pores, i.e. 6-8 per mm and is lacking gloeocystidia**.**

Tyromyces aquosus (Henn.) Ryvarden,
Czech Mycol. 64:14, 2014. - *Polyporus aquosus* Henn., Hedwigia 43:199, 1904.
Basidiocarp annual, pileate, flabelliform, spatulate to laterally stipitate, applanate to convex, 10-15 cm wide and long, 1.5-2 cm thick when fresh collapsing to a few mm when dry, soft and sappy when fresh, rigid and brittle when dry, beige to isabelline when fresh, becoming pale reddish brown when dry, glabrous, azonate, smooth, pore surface white becoming discoloured beige to pale brown, pores angular, 2-3 per mm, tubes up to 10 mm deep, drying fragile, context soft and fibrous, white to pale grey or brown, up to 2 cm thick when fresh, dries very thin, stipe short and cylindrical, smooth, cream to wood coloured, 1-2 cm thick and up to 3 cm long..
Hyphal system monomitic; generative hyphae with clamps, thin-walled, 3-12 µm wide and collapsed in dry condition.
Cystidia or other sterile hymenial elements absent.
Basidia 10-25 x 5-9 µm, clavate.
Basidiospores 8-10 (12) x 3.5-4.5 µm, oblong ellipsoid to oval.
Distribution. Known only from Sao Paulo in Brazil.
Remarks. The species is recognized by the fairly large pores, the spatulata to stipitate basidiocarps and the long spores. It is with some doubt that the species is placed in *Tyromyces*, but no other genus seems appropriate as it grew on a dead tree and not on

the ground which is common for all *Albatrellus* species. *Jahnoporus* Nuss is another probability, but this species has much larger spores and a distinct long stipe and grows on the ground, thus deviating from that of the species described here.

Tyromyces atroalbus (Rick) Rajchenb.,
Nord. J. Bot. 7:558, 1987. - *Polyporus atroalbus* Rick, Broteria Ser. Cien. Nat. 5:25, 1935. - *Trametes humeana* Murrill, Bull. Torrey Bot. Club 65:656, 1939.
Basidiocarp annual, pileate, sessile, applanate to convex, dimidiate to slightly spatulate, up to 7 cm wide, 10 cm long and 3 cm thick at the base, soft and sappy with strong odour of anise when fresh, rigid and brittle with less distinct odour when dry, taste "nutty" (acc. to Murrill) when fresh, more disagreeable when dry, upper surface white to grey becoming ochraceous to pale yellowish brown, first velvety and dull, later glabrous, azonate, pore surface white becoming discoloured beige to pale brown when bruised or dried, pores angular to slightly irregular, 2-4 per mm, tubes up to 10 mm deep, drying fragile, context soft and fibrous, white to pale grey or brown, especially towards the pileus, homogeneous, up to 2 cm thick.
Hyphal system monomitic; generative hyphae with clamps, thin- to slightly thick-walled, 3-7 µm wide.
Cystidia or other sterile hymenial elements absent.
Basidia 17-20 x 5-7 µm, clavate.
Basidiospores 3.5-5 x 2.5-3.5 µm, ellipsoid to oval.
Distribution. Known from Florida and Brazil, but will certainly also be found in the area in between.
Remarks. The species is recognized by the fairly large pores, the odour of anise and the change of colour when bruised in fresh condition. More collections are needed to verify its morphological variation.

Tyromyces caesioflavus (Pat.) Ryvarden,
Occ. Paper Farlow herb 14:9, 1983. - *Polyporus caesioflavus* Pat., Bull. Soc. Mycol. Fr. 8:114, 1892.
Basidiocarp annual, pileate, sessile, applanate to convex, dimidiate, semicircular up to 5 cm wide, 1,5 cm long and 1 cm thick at the base, soft probably when fresh, fragile and light of wieght when dry, upper surface whitish to pale yellow, smooth to slightly wrinkled, glabrous, azonate, pore surface cream, pores angular to round, tiny, 7-9 per mm, tubes cream, up to 4 mm deep, drying fragile, context soft and fibrous, cream, 1 cm thick.
Hyphal system monomitic; generative hyphae with clamps, thin- to slightly thick- walled, 2-4 µm wide.
Cystidia or other sterile hymenial elements absent.
Basidia not seen.
Basidiospores 3-4.5 x 1-1.5 µm, allantoid.
Distribution. Known only from Ecuador.
Remarks. The species is recognized by the tiny pores and the yellow colour.

Tyromyces cinnamomeus M. Mata & Ryvarden,
Synopsis Fung. 27:68, 2010.
Basidiocarp annual, fanshaped to semistipitate, in the type 2 x 3 cm with a contracted and tapering base about 4 mm wide, up to 2 mm thick, probably soft and flexible when fresh, rigid and brittle when dry, upper surface glabrous, cinnamon to pale reddish-brown when dry, smooth then radially folded at the base and with darker radial lines towards the margin, with a faint layer of whitish hyphae toward the base and velutinate hairs becoming denser and covering the base completely with a white very thin, but dense tomentum, pore surface cinnamon, pores angular, 6-8 per mm with finely dentate dissepiments, tubes up to 300 µm deep and concolorous with the pore surface, context dense and cinnamon.
Hyphal system monomitic; generative hyphae with clamps, those of the context 3-10 µm wide with slightly thickened walls, in the trama 2-4 µm and thin-walled. All hyphae without reaction in Melzer's reagent.
Cystidia or other sterile hymenial elements absent.
Basidia 10-15 x 4-5 µm, clavate.
Basidiospores 3-3.5 x 2.5 µm, broadly ellipsoid to subglobose.
Distribution. Known only from the type locality in Costa Rica.
Remarks. The overall cinnamon colour, tiny pores and basidiospores make this a distinct species. The white, contracted and velutinate base in the type (with an otherwise glabrous pileus) are also a striking character.

Tyromyces costaricensis Ryvarden,
Synopsisi Fung. 35:49, 2016
Basidiocarp annual, dimidiate to flabelliform to slightly fan shaped, 1 cm wide, up to 3 cm long and 1.5. mm thick at base, pileus white when fresh, ochraceous when old, glabrous, slightly radially striate with irregular radial veins to scrupose with some pointed tips, pore surface white when fresh, pale ochraceous when dry, pores round to slightly angular (lens) 7- 8 per mm, tubes concolorous, up to 1 mm deep, context with a thin dark line next to the tubes, otherwise white and dense.
Hyphal system monomitic, generative hyphae with clamps, 2-3.5 µm wide and thin walled in the trama, in the context 5-10 µm wide and with up to 2 µm wide walls in 3 % KOH.
Cystidia absent.
Basidia 12-15 x 4-7 µm, tetrasterigmatic and with basal clamp.
Basidiospores cylindrical to oblong ellipsoid, 4.5-5 x 2-2.5 µm, smooth, thin walled and negative in Melzers agent.
Distribution. Known from Costa Rica.
Remarks. The species is similar to *T. caesioflavus*, which however, has smaller and narrower, allantoid spores (3-4.5 x 1-1.5 µm).

Tyromyces diffusus Ryvarden,
Synopsis Fung. 35:49, 2016.
Basidiocarp annual, effused reflexed to fan shaped with contracted base, pilei 1 x 1 cm and up to 1.5 mm at the base, the effused resupinate part p to 1-2 cm wide and 2 mm thick, soft when fresh, rigid and fragile when dry, upper surface ochraceous, dull, azonate, adpressed velutinate in parts, glabrous towards he margin, pore surface probably white when fresh, ochraceous when dry, pores thin-walled, angular, 1-3 per mm, some even up to 2 mm wide in the dry holotype, tubes concolorous, up to 1.5 mm deep, context dense, ochraceous and homogenous, 200 -300 µm thick .
Hyphal system monomitic, generative hyphae with clamps, 3-5 µm wide, distinctly parallel in both trama and context.
Basidia 15-20 x 5-8 µm, tetrasterigmatic and with basal clamp.
Basidiospores ellipsoid, 4.5-5 x 2.5- 3 µm, smooth, thin walled and negative in Melzers agent.
Distribution. Only known from the type locality in Venezuela.
Remarks. The species is similar to *T. xuchilensis*, which however has smaller spores, i.e. 3.5-4.5 x 2.5- 3.5 µm. *T. pseduolacteus* has almost the same type of spores as *T. diffusus*, but has much smaller pores, i.e. 4-6 per mm.

Tyromyces duplexus M. Mata & Ryvarden,
Synopsis Fung. 27:70, 2010.
Basidiocarp annual, fanshaped to semistipitate, in the type 3 x 3 cm with contracted and tapering base about 4 mm wide, up to 2 mm thick, probably soft and sappy when fresh, rigid and brittle when dry, upper surface dull with a compressed white cottony layer, about 0.5 mm thick above a very thin dark cartilaginous cuticle, which in one of the specimens of the type is partly exposed as a pale brown smooth and veined surface towards the point of attachment, pore surface cream, pores angular, 5-7 per mm, tubes white, up to 0.5 mm deep, context dense, pale cinnamon and separated from the white upper layer on the pileus by a cuticle.
Hyphal system dimitic; generative hyphae with large clamps, those of the cottony layer of the pileus 2-4 µm wide and with abundant clamps, 'those of the context in parts thick-walled 3-8 µm wide a very few skeletal hyphae observed in the trama, these 3-5 µm wide, thick-walled, hyaline and pale cinnamon. All hyphae without reaction in Melzer's reagent.
Cystidia or other sterile hymenial elements absent.
Basidia 10-15 x 4-6 µm, clavate.
Basidiospores 5-6.5 x 2.5-2.8 µm, cylindrical.
Distribution. Known only from the type locality in Costa Rica.
Remarks. This is a remarkable species because of the distinctly duplex consistency with the cinnamon coloured context contrasting both the white upper compressed pileus layer and the white tubes. The cartilaginous zone above the context is easily seen even without a lens when the basidiocarp is sectioned, which should make the species easily recognizable in the field.

Tyromyces hypocitrinus (Berk.) Ryvarden,
Mycotaxon 20:344, 1984. - *Polyporus hypocitrinus* Berk., J. Linn. Soc. Bot. 15:50, 1876.
Basidiocarp sessile, annual, dimidiate or semicircular, convex, up 4 cm wide and long and 5 mm thick at the base, upper surface white, cream to pale citric yellow, becoming ochraceous, smooth, glabrous, slightly wrinkled when dry, pore surface sand coloured to cream, pores thin-walled, angular, 4-6 per mm; tubes up to 3 mm deep, context white, soft and brittle, up to 1 mm thick at the base.
Hyphal system monomitic; generative hyphae with clamps, in the context slightly branched, 2-4 µm wide
Gloeocystidia present, clavate to slightly pointed, 12-20 x 5-8 µm , pale yellow.
Basidia not seen.
Basidiospores 4-5 x 1-1.5 µm, allantoid.
Distribution. Known from Brazil, Panama, and Mexico
Remarks. The species is similar to *T. leucomallus* which however has no gloeocystidia and smaller pores.

Tyromyces irpiceus Corner.
Ad Polyporaceas 5, Beiheft Nova Hedwigia 96:143, 1989. Description from op. cit.
Basidiocarp annual, effused, reflexed to pileate, semicircular to reniform, up to 15 mm in diameter, pileus white to cream drying pale livid yellowish, minutely tomentose, faintly zoned, shrinking and curled when dry, pore surface white to cream, first with shallow pores where the pore edges developed into plates and irregular flattened spines, finally almost hydnoid, white to very pale ochraceous, 2 mm deep, context cream, cheese like to slightly fibrous, up to 2 mm thick, smell acid to aromatic.
Hyphal system monomitic; generative hyphae with clamps, thin- to thick-walled, 2-5 µm wide.
Cystidia or other sterile hymenial elements absent.
Basidia clavate, 4-sterigmate, 17-22 x 6-8 µm.
Basidiospores 5-6 x 4.2-5.2 µm, subglobose.
Distribution. Known from Brazil and Venezuela.
Remarks. It is with doubt this species is included in the genus as defined here since it is strongly deviating in its development into an almost hydnoid hymenophore. This and the pale yellowish colour should make the species distinct when seen in the field. Fresh collections are strongly desirable to ascertain its morphological variation. Corner himself, wondered whether the species has been described as an *Irpex* in a wide sense, but did not find any species matching his description.

Tyromyces leucomallus (Berk. & Curt.) Murrill,
N. Am. Flora 9:36, 1907. - *Polyporus leucomallus* Berk. & M. A. Curtis, J. Linn. Soc. Bot. 10:308, 1868.
Basidiocarp sessile, annual, dimidiate or semicircular, convex, up to 5 cm wide, 8 cm long and 1-2 cm thick at the base, watery when fresh, soft and fragile when dry, taste mild, odour when fresh unknown; upper surface white to cream, often slightly darker when dry, azonate, velvety to tomentose, drying more scrupose to slightly tufted and

finally glabrous, often radially fibrillose, margin thin and sharp; pore surface white to cream, pores thin-walled, angular, 6-9 per mm; tubes up to 5 mm deep, brittle when dry; context white, soft and brittle, duplex and looser towards the upper surface, up to 15 mm thick at the base.
Hyphal system monomitic; generative hyphae with clamps, in the context slightly branched, 3-8 µm wide, in the trama more narrow and mixed with gloeopleurous hyphae, yellow and with an oily to grainy content, up to 9 µm wide.
Cystidia or other sterile hymenial elements absent.
Basidia 10-14 x 4-6 µm clavate.
Basidiospores 3.5-4.5 x 1 µm, allantoid.
Distribution. Rare in the Gulf-states, tropical America - Costa Rica
Remarks. The species is similar to *Oligoporus tephroleucus* which however has a brown rot, a smooth pileus and slightly larger spores. The spores in the type material are shorter than those cited by Lowe (1975:36) and only very rarely above 4.5 µm long. The gloeopleurous hyphae and the duplex context are good diagnostic characters together with the allantoid short spores.

Tyromyces limitatus Ryvarden
Mycotaxon 74: 125, 2000
Basidiocarp annual, pileate, spathulate to flabelliform, semicircular and up to 5 cm in diameter, and 4 mm thick at the base, soft when fresh, hard and brittle when dry and slightly curled due to some shrinking by drying, margin thin and entire, then partly split by drying, upper surface ochraceous to pale brown, dull, finely scrupose (lens) and faintly concentrically zoned, pore surface ochraceous when fresh, drying deeper brow, pores angular to round, thin-walled, invisible to the naked eye, 7-9 per mm, tubes concolorous with the pore surface up 2 mm deep and with a dense zone next to the context, context duplex, up to 3 mm thick, lower part up to 2 mm thick, cream to pale ochraceous, separated with a dense dark brown resinous line from the denser pilear cover, which is 0.5 mm thick at the base.
Hyphal system monomitic; generative hyphae with clamps, thin- to very thick-walled, 3-10 µm wide measured in 3% KOH with large conspicuous clamps
Cystidiols present in the hymenium, sharply pointed, smooth, thin-walled and hyaline, up to 15 µm long and 5 µm wide in the middle.
Basidia 12-15 x 4-5 µm, clavate.
Basidiospores 3-3.2 x 2-2.4 µm, ellipsoid.
Distribution. Known only from the type locality.
Remarks. This is a remarkable species with its distinct duplex context, a character not previously reported from *Tyromyces*. The upper pilear cover is probably soft and pliable when fresh drying hard and finely scrupose with distinct tufts of agglutinated hyphae. The very wide and thick-walled generative hyphae in the context are also striking.

Tyromyces mexicanus Ryvarden & Guzmán,
Mycotaxon 78:251, 2001.
Basidiocarp annual, dimidiate with tapering base , up to 4.5 cm wide and 1,5 cm thick at the base, soft when fresh, rigid and brittle when dry, pileus dark greyish brown, strongly radially fimbriate to striate, in parts with tufted agglutinated hyphae, slightly concentrically zoned, margin as pileus, but extended 2-3 mm beyond the pore surface and bending down in dry condition, pore surface white, pores angular, 2-3 per mm, slightly dentate, tubes white, up to 10 mm deep, context white becoming greyish towards the upper surface, homogenous, up to 2 mm thick at base.
Hyphal system monomitic; generative hyphae with large and conspicuous clamps, thin- to slightly thick-walled, 3-7 µm wide in the context.
Cystidia or other sterile hymenial elements absent.
Basidia 20-28 x 5-6 µm, clavate, with 4 sterigmata.
Basidiospores 6-8 x 3.5-4 µm, ellipsoid.
Distribution. Known only from the type locality in Mexico.
Remarks. This is a remarkable species with the dark greyish brown and striate to strigose hairy pileus contrasting the white pore surface and tubes and a thin whitish to pale grey context.

Tyromyces navarrii M. Mata & Ryvarden,
Synopsis Fung. 27:71, 2010.
Basidiocarp annual, pendant almost circular in shape but with a few lobes at the periphery, about 4 cm in diameter and 3 mm thick at the base, probably soft and sappy when fresh, rigid and brittle when dry, upper surface glabrous, slightly veined, probably as a result of the drying, deep red at the point of attachment, becoming pinkish towards the periphery as the thickness of the basidiocarp decrease, pore surface a bright but pale red, pore mouth finely incised, pores angular, 3-5 per mm, tubes up to 1.5 mm deep, drying fragile and cartilaginous, context dense and horny, about 1 mm thick, stipe short and irregular, about 1 cm long.
Hyphal system monomitic; generative hyphae with large clamps, thin-walled, 3-5 µm wide in the tubes, in the context 3-8 µm wide.
Cystidia or other sterile hymenial elements absent.
Basidia 10-14 x 4-5 µm, clavate, with 4 sterigmata.
Basidiospores 4-5 x 3.5-4.5 µm, subglobose to oval, hyaline and non-amyloid.
Distribution. Known only from the type locality in Costa Rica.
Remarks. A remarkable species with pendant habit and reddish colour. Superficially reminiscent of *Merulius incarnatus* Schw., but easily separated from it by the pores, the pendant habit and different basidiospores.

Tyromyces neostrigosus Ryvarden & Iturriaga,
Mycologia 95:1075, 2003.
Basidiocarp annual, pileate, sessile, almost triangular in section, up to 3 cm wide and long and 1 cm thick at the base, soft and sappy when fresh, dense when dry, upper surface white to gray when fresh, drying dark brown, strongly strigose with stiff hairs in

radial lines, azonate, surface white becoming discolored to pale brown when bruised or dried, pore surface first whitish, drying pale olivaceous brown, pores angular to slightly irregular, 5-7 per mm, tubes up to 5 mm deep, drying fragile and concolorous with the pore surface, context white and dense, up to 6 mm thick at the base.
Hyphal system monomitic; generative hyphae with large and conspicuous clamps, thin- to slightly thick-walled, 3-8 mm wide.
Cystidia or other sterile hymenial elements absent.
Basidia clavate, 4-sterigmate, 12-14 x 5-7 mm.
Basidiospores 3.5-4 x 1-1.3 mm, allantoid.
Remarks. This is a conspicuous species by its strongly dark brown strigose hairs in stiff bundles oriented in a radial fashion, erect at the base, more flattened towards the margin. The tubes dries olivaceous brown and fragile, strongly contrasting with the white and dense context. Superficially it is reminiscent of *T. atrostrigosus* (Cooke) Cunningh. originally described from Australia, but this species has much larger, ellipsoid basidiospores.

Tyromyces nodulosus Ryvarden,
Mycotaxon 74: 127, 2000.
Basidiocarp annual, pileate, nodulose with several sloping pilei in long vertical rows, individual pilei projecting up to 1 cm from the substrate and 1.5 cm thick at the base, fragile when dry, upper surface whitish, pressed velutinate, azonate, margin rounded, pore surface white when fresh, drying cream, pores angular to round, 3-4 per mm, tubes cream, up to 2 mm deep, drying fragile, context soft and fibrous, cream, 1 cm thick.
Hyphal system dimitic; generative hyphae with clamps, thin-walled, 2-6 µm wide, skeletal hyphae present only in the context, hyaline, straight and thick-walled when observed in 3% KOH, less so in Melzer's reagent in which they are without reaction.
Cystidia present in dissepiments as apically widened hyphal ends, club shaped to distinctly bulbous, apical part up to 15 µm in diameter and with thickened walls, hyaline, up to 120 µm long to the basal clamps from which they arise, negative in Melzer's reagent.
Basidia 15-22 x 5-6 µm clavate.
Basidiospores 5-6 (7) x 1.5-2 µm, cylindrical.
Distribution. Known only from the type locality in Puerto Rico.
Remarks. The species is recognized by its nodulose habitat giving it an appearance of a badly developed specimen of *Trametes* species until a microscopical examination is undertaken and the conspicuous cystidia are observed. These are slightly reminiscent of those of many *Hyphodontia* species where they however have smaller dimensions, besides that the hyphal system of this corticoid genus is grossly different from that observed in this new species.

Tyromyces oxyporoides Ryvarden & Iturriaga,
Synopsis Fung. 29:78, 2011.
Basidiocarp annual, pileate, spatulate to flabelliform, semicircular and up to 5 cm in diameter, and 1 cm thick at the base, soft when fresh, hard and brittle when dry and

slightly curled due to some shrinking by drying, margin thin and entire, upper surface white, glabrous, azonate, slightly tuberculate –rugulose in parts with some faint radial ridges, pore surface white to pale cork coloured, pores angular to slightly elongated, thin-walled, 2-4 per mm a few larger due to shrinking of the basidiocarp during drying, tubes concolorous with the pore surface up 1 mm deep, context white, dense, homogenous, up to 7 mm thick, at the base.
Hyphal system monomitic; generative hyphae thin walled and with clamps, 3-5 µm wide measured in 3% KOH.
Cystidia or cystidioles absent.
Basidia 15-17 x 4-5 µm clavate.
Basidiospores globose, 4-5 µm in diameter.
Distribution. Known only from the type locality.
Remarks. This new species is characterized by its angular pores and globose spores, reminding one of those seen in *Oxyporus*, thus the specific epithet.

Tyromyces polyporoides Ryvarden & Iturriaga,
Mycologia 95:1075, 2003.
Basidiocarp annual, growing in a cluster, laterally stipitate, pileus round to slightly spatulate, up to 2 cm wide and long, 1-3 mm thick, soft when fresh, flexible when dry, upper surface smooth, glabrous, dull, warm chocolate brown except for a light coloured margin, margin sharp and wavy, pore surface white, pores round, 7-8 per mm, tubes up to 1 mm deep and white to pale cream, context white and dense, up to 2 mm thick at the base.
Stipe round, glabrous and smooth, pale cream, up to 2 cm long and 4 mm in diameter, dense and homogenous
Hyphal system monomitic; generative hyphae with large and conspicuous clamps, thin- to slightly thick-walled, 3-7 mm wide.
Cystidia or other sterile hymenial elements absent.
Basidia clavate, 4-sterigmate, 10-14 x 4-5 mm.
Basidiospores 4-4.5 x 1-1.3 mm, allantoid.
Distribution. Only known from the type locality in Venezuela.
Remarks. This is a conspicuous species by the clustered laterally stipitate basidiocarps and the warm brown, smooth pileus contrasting the white pore surface. In the field it was taken for a *Polyporus* sp s. str, because of the shape of the basidiocarps. It came as a surprise to find it being monomitic with small allantoid basidiospores. This new species deviates considerably in macromorphology from *Polyporus chioneus* Fr. the type species of *Tyromyces*, which is a white and sessile species. However, since their microstructure is almost identical we felt it was wiser to place this new species in *Tyromyces* rather than describing a new genus.

Tyromyces preguttulatus (Murrill) Ryvarden,
Mycotaxon 23:183, 1985. - *Polyporus preguttulatus* Murrill, Mycologia 2:190, 1910.
Basidiocarp annual, pileate, fanshaped, dimidiate, semicircular up to 4 cm wide and long and 6 mm thick at the base, soft probably when fresh, fragile when dry, upper surface pale

reddish brown, smooth to slightly wrinkled, glabrous, azonate, slightly fibrillose along the margin, in older parts the upper hyphae have agglutinated to a thin cuticle, pore surface white to cream, pores round, 5-6 per mm, tubes white to cream to 2 mm deep, drying fragile, context soft and fibrous, cream, 1-2 mm thick.
Hyphal system monomitic; generative hyphae with clamps, thin- to slightly thick-walled, 2-4 µm wide.
Cystidia or other sterile hymenial elements absent.
Basidia not seen.
Basidiospores 4-4.5 x 1.5-2 µm, cylindrical
Distribution. Known only from Jamaica.
Remarks. The species is recognized by the cylindric spores and the pale reddish brown colour of the pileus.

Tyromyces pseudolacteus Murrill,
Bull. Torrey Bot. Club 67:65, 1940.
Basidiocarp annual, effused, reflexed to pileate, semicircular, convex, 3 cm wide, 5 cm long and 2.5 cm thick at the base, sappy when fresh, rigid when dry, upper surface white to cream, tomentose to finely scrupose, in parts with a thin agglutinated pellicle, pore surface white to very pale ochraceous, pores round to angular, 4-6 per mm, tubes concolorous with the pore surface and darker than the tubes, soft and fragile, up to 20 mm deep, context cream, soft and slightly fibrous, up to 8 mm thick, no distinct odour, taste disagreeable.
Hyphal system monomitic; generative hyphae with clamps, thin- to thick-walled, 3-6 µm wide in the context, narrower in the trama.
Cystidia or other sterile hymenial elements absent.
Basidia clavate, 4-sterigmate, 12-14 x 5-6 µm .
Basidiospores 4-5 x 2.5-3.5 µm, ellipsoid.
Distribution. Known only from Florida and Mexico (Vera Cruz).
Remarks. The white basidiocarps without odour and unchanged when bruised and rather small pores separates it from *T. atroalbus* which microscopically is very similar. More collections are needed to verify its morphological variation.

Tyromyces pulcherrimus (Rodway) G. Cunningham,
New Zeal. Dep. Sci. Ind. Res. Bull. 164:121,1965. – *Polyporus pulcherrimus* Rodw., Pap. Royal Soc. Tasm. 1912;176, 1922.
Basidiocarp annual, effused reflexed, up to 2 cm wide, 6-10 cm along the substrate and up to 15 mm thick at base, soft and fleshy when young, drying resinous hard, pileus reddish when fresh, drying tan to rusty brown tomentose to strigose with sulcate zones, no context in section, pore surface whitish at first, soon reddish brown when dry, pores irregular to angular, 1-3 per mm, dissepiments dentate in parts, tubes rusty brown, up to 6 mm deep, context reddish becoming wood coloured when dry, distinctly radially fibrous, often agglutinated and dense when dry and with a distinct dark brown zone above the tubes.

Hyphal system monomitic; generative hyphae with clamps, thin- to thick-walled, 4-6 µm wide in the context, narrower in the trama.
Cystidia or other sterile hymenial elements absent.
Basidia 16-22 x 5-6 µm, clavate, 4-sterigmate.
Basidiospores 4.5-6 x 3.5-4.5 µm, subglobose to egg-shaped.
Distribution. In the neotropics only known from Brazil, otherwise from New Zealand and Australia.
Remarks. The reddish colour and the strigose pileus is good field characteristics, later the brown colours and the distinctly fibrous to strigose or coarsely tomentose pileus with a dark zone next to the tubes make the species distinct.

Tyromyces semilimitatus Ryvarden & Iturriaga,
Synopsis Fung. 29:27, 20111.
Basidiocarp annual, pileate, spatulate to flabelliform to almost semi stipitate, semicircular and up to 3 cm in diameter, and 3 mm thick at the base, soft when fresh, hard and brittle when dry and slightly curled due to some shrinking by drying, margin thin and entire, upper surface whitish when fresh, drying ochraceous with a yellowish tint, finely scrupose to velvety (lens) azonate, smooth to slightly tuberculate – rugulose in some older specimens, pore surface whitish when fresh drying ochraceous with a yellow tint, pores round, thin-walled, invisible to the naked eye, 8-12 per mm, tubes concolorous with the pore surface up 1 mm deep and without a dense zone next to the context, context duplex, up to 3 mm thick, lower part up to 2 mm thick, cream to pale ochraceous, almost cartilaginous in older specimens and with a distinct radial structure, upper part looser in consistency and composed of upwards curled hyphae, but without any distinct zone between the two layers (which is the case in *T. limitatus*).
Hyphal system monomitic; generative hyphae thin walled and with widely spaced clamps, 3-5 µm wide measured in 3% KOH.
Cystidia or cystidiols absent.
Basidia 12-15 x 4-5 µm, clavate.
Basidiospores globose, 3-4 µm in diameter.
Distribution. Known only from the type locality in Venezuela.
Remarks. This species is undoubtedly related to *T. limitatus*, but is separate both macro- and micromorphologically from that species. *T. semilimitatus* has smaller pores (8-12 per mm) and lack a dense zone about the tuber and a dark zone in the duplex context as seen in *T. limitatus*. Further, the hyphae in the latter species are very wide, i.e. up to 10 µm and have large conspicuous clamps, while they are small and rather difficult to find in *T. semilimitatus*.

Tyromyces singeri Ryvarden,
Mycotaxon 28:540, 1987.
Basidiocarp annual, pileate, flabelliform to spatulate to laterally stipitate, applanate to convex, up to 6 cm wide and long, 1.5-2 cm thick when fresh, soft and sappy when fresh, rigid and brittle when dry, upper surface bright red fading to yellowish red when dry, no reaction with KOH, glabrous, azonate, smooth, pore surface bright red becoming

yellow when dry, pores angular, 3-4 per mm, tubes up to 8 mm deep, drying fragile and cartilaginous, context red to yellow, dense, up to 2 mm thick, stipe short and cylindrical, smooth, glabrous, bright red, 8 mm thick and up to 3 cm long with conspicuous rhizomorphs from the base and into the substrate.
Hyphal system dimitic; generative hyphae with clamps, thin-walled, 2-5 µm wide, skeletal hyphae few, thick-walled and 2-5 µm wide.
Cystidia or other sterile hymenial elements absent.
Basidia not seen.
Basidiospores 6-8 x 3-4 µm, oblong ellipsoid to oval.
Substrata. Dead hard wood which becomes inundated during the annual floods in the Amazonian basin
Distribution. Known only from Rio Tarmura in Amazona in Brazil.
Remarks. The species is recognized by the stipitate, bright red basidiocarps and the peculiar habitat.

Tyromyces spatulatus Ryvarden,
Synopsis Fung. 35:50, 2016.
Basidiocarp spatulate to fanshaped , up to 4 cm wide and long along he margin of individual basidiocarps, 2-5 mm thick, probably soft when fresh, hard and fragile when dry, upper surface strongly radially veined and with concentric bands, pale ochraceous in bands with a black cuticle shining though the radially veined bands of tufted hyphae, as if the surface has been slightly weathered or degraded, margin sharp and thin, pore surface pale straw coloured, pores 1-4 per mm, irregular and angular, in parts collapsed and flattened, probably by the collecting, dissepiments finely hairy or penicillate, tubes concolorous, up to 2 mm deep, context black, dense , in parts exposed as a cuticle on the pileus, about 1 mm thick.
Hyphal system monomitic, generative hyphae with clamps, 3-8 µm wide, clamps conspicuous and some present as an open ring and then up to 10 µm wide.
Cystidia absent.
Basidia 12-18 x 5-7 µm, tetrasterigmatic and with basal clamp.
Basidiospores 4-5 x 2.5-3 µm, ellipsoid.
Distribution. Only known from the type locality in Costa Rica.
Remarks. This is a striking species with its distinct fan shaped basidiocarps with a veined ochraceous surface where a black cuticle is shining through and the black dense context, fresh specimens are desirable to have a complete description of it from nature. The holotype gives an impression of having been flattened in the drying process.

Tyromyces subgiganteus (Berk. & M. A. Curtis) Ryvarden,
Mycotaxon 20:357, 1984. - *Polyporus subgiganteus* Berk. & M.A. Curtis, Grevillea 1:49, 1872.
Basidiocarp annual, pileate, sessile, single or imbricate, sappy when fresh, contracting and becoming rigid when dry, up to 4 cm wide, 6 cm long and 5 mm thick; upper surface white to cream, drying ochraceous to grey, first hirsute to velvety, in age becoming more adpressed velvety to finely scrupose, azonate; pore surface white to pale straw-coloured

when fresh, darkens to resinous brown and becoming fragile,, pores round and entire, 3-5 per mm when fresh, more irregular and larger when dry and then 1-4 per mm, tubes up to 5 mm deep, concolorous with pore surface, but darker than the context; context white and thin, up to 3 mm deep, often with dark resinous bands close to the tube-layer.
Hyphal system monomitic (?); generative hyphae with clamps, in the context the hyphae are wide with thickened walls, parallel, sparingly branched and with large conspicuous clamps, 3-6 µm wide, in the trama partly narrower, 2-4 µm wide, with small clamps, strongly agglutinated, in KOH also with swollen and gelatinised wider hyphae with very few clamps, 3-9 µm wide, like broken fragments of skeletal hyphae, their true nature is difficult to ascertain as the tramal tissue remains hard and cartilaginous in Melzer's reagent and the wider hyphae swell strongly in KOH.
Cystidia and other sterile hymenial elements absent.
Basidia 12-15 x 5-6 µm, clavate.
Basidiospores 4-4.5 x 5-5.5 µm, subglobose to broadly ellipsoid.
Distribution. Eastern North America, Puerto Rico, Costa Rica.
Remarks. The basidiocarps of *T. subgiganteus* contract and are often bent when dry and then the pores become irregular in shape and size. The subglobose to ovoid spores are smaller than those of *T. fissilis* which also contracts on drying, but the basidiocarps are considerably thicker and the tubes become partly greasy and stain paper.

T. subviride Ryvarden & Guzmán,
Mycotaxon 78:252, 2001.
Basidiocarp annual, pileate, broadly attached and elongated along the substrate, up to 5 cm long, 1 cm wide and 5 mm thick at the base, soft when fresh, rigid and brittle when dry, pileus glabrous ochraceous , smooth when fresh, slightly radially wrinkled when dry, azonate, pore margin sharp and thin, deflexed in dry condition and the covering the marginal pores, pore surface greyish green, pores sinus to angular, pore mouths dentate and in parts lacerate, 5-6 per mm, under drying shrinking and becoming 1-3 per mm, tubes greenish to grey, up to 4 mm deep, resinous fragile when dry, context white and dense, up to 2 mm thick.
Hyphal system monomitic; generative hyphae with large conspicuous clamps, thin- to slightly thick-walled, 3-8 µm wide.
Cystidia or other sterile hymenial elements absent.
Basidia 10-14 x 4-5 µm, clavate, with 4 sterigmata.
Basidiospores 3.5-4 x 1-1.5 µm, allantoid.
Distribution. Known only from the type locality in Mexico.
Remarks. The glabrous pileus and the greenish pore surface and tubes characterize this species besides the dentate pore mouths and the contrast between the tubes and the context.

Tyromyces venustus (David. & Rajchenb.) Ryvarden, comb nov.,
Basionym: *Flaviporus venustus* David & Rajchenb.. Mycotaxon 22:295, 1985.
Index Fungorum 552 571.
Basidiocarp annual, pileate, dimidiate applanate, convex, 10-15 cm wide and 6 cm in diameter, up to 4 cm thick at the base, soft and sappy when fresh, shrinks considerably when drying and becoming rigid and horny, upper surface pale dirty whitish to slightly pink when fresh, beige to isabelline when dry, glabrous, azonate, smooth to slightly tuberculate, pore surface white to pale pink when fresh becoming discoloured, pores angular, 6-10 per mm, when dry, probably larger when fresh, tubes up to 5 mm deep, context sappy when fresh and then white to pale pink, drying horny dry and dark brown and then 6-7 mm thick.
Hyphal system monomitic; generative hyphae with clamps, slightly thick-walled, 4-6 µm wide, in the context wider and thicker, almost solid, deeply immersed in resinous substances and their true nature difficult to ascertain.
Cystidia or swollen vesicles present in the dissepiments as apical hyphal ends, up to 8 µm in diameter.
Basidia clavate, 4-sterigmate, 15-20 x 4-5 µm .
Basidiospores subglobose, 3.5-4.5 x 2.5-3.2 µm .
Distribution. Known from Martinique, Colombia and the Dominican republic.
Remarks. The species is recognized by the large whitish pink basidiocarps shrinking considerable like those of the temperate *Tyromyces fissilis* and the small basidiospores.

Tyromyces xuchilensis (Murrill) Ryvarden,
Mycotaxon 23:175, 1985. - *Coriolus xuchilensis* Murrill, N. Y. Bot. Garden Bull. 8:143, 1912.
Basidiocarp annual, pileate, sessile and usually effused reflexed, up to 10 cm long, 0.5-3 cm wide and 0.5 mm thick at the base, soft when fresh, fragile when dry, upper surface white, silky to velutinate, azonate, pore surface white to cream becoming ochraceous when dry, pores angular to slightly irregular, 3-5 per mm, tubes white becoming ochraceous when old and then darker than the context, 1 mm deep, drying fragile, context duplex, upper part soft and fibrous, lower part thinner and denser, white, very thin.
Hyphal system monomitic; generative hyphae with clamps, thin- to slightly thick-walled, 2-5 µm wide.
Cystidia or other sterile hymenial elements absent.
Basidia not seen.
Basidiospores 3.5-4.5 x 2.5-3 µm, ellipsoid to subglobose.
Distribution. Known from Mexico, Costa Rica and Panama.
Remarks. The species is recognized by an effused reflexed basidiocarp, silky white pileus besides subglobose spores.

Wrightoporia Pouzar,

Ceská Mykol. 20:173, 1966.

Basidiocarps resupinate to pileate, annual to perennial; pores small to medium, white to cream or gray; hyphal system dimitic; generative hyphae with clamps, skeletal hyphae thick-walled to solid, dextrinoid to non-dextrinoid; spores less than 6 µm in largest dimension, globose to cylindrical, smooth to ornamented, weakly to strongly amyloid. On dead wood, both of gymnosperms and hard woods. Tropical to south temperate distribution.

Type species: *Poria lenta* Overh. & Lowe.

Remarks: The genus belongs in the Hericiaceae and is characterized by its amyloid spores combined with a dimitic hyphal system where the skeletal hyphae in most species have a dextrinoid reaction. The distinction towards *Amylosporus* is difficult, but we have felt it simpler to retain this genus as monomitic even if we acknowledge that this may be difficult to retain when DNA analysis have been performed on the whole complex of genera in Hericiaceae.

NB. Since hard woods are the totally dominant hosts, this is not repeated for each species unless there are other substrates. Cystidia are only present in *W. tropicalis*, thus, absence of them in the other species are omitted.

Key to species

1. Basidiocarps perennial, resupinate to effused reflexed, woody hard, pore surface grey to pale brown ..... **W. tropicalis (Larssoniporia tropicalis)**
1. Basidiocarp annual to biennial, resupinate to distinctly pileate, soft to fragile, pore surface pinkish to ochraceous or wood coloured **2**

2. Basidiocarps resupinate **3**
2. Basidiocarps pileate **10**

3. Hyphal system monomitic ..... **W. monomitica** (see also *Anomoloma*)
3. Hyphal system dimitic **4**

4. Pore surface pinkish to lilac, generative hyphae mostly with simple septa..... **W. bracei**
4. Pore surface whitish, to pale straw coloured, generative hyphae with clamps..... **5**

5. Pores large, 1–3 per mm, often lacerate **6**
5. Pores small, 4–8 per mm, round to angular **7**

6. Basidiocarps white to cream, basidiospores globose to subglobose, 5–6 × 4–5 µm. .... **W. lenta**
6. Basidiocarps cream to pale brown, usually with darker patches, basidiospores subglobose to broadly ellipsoid, 3.5–4.5 ×2.5–3.5(4) µm ..... **W. avellanea**

7. Skeletal hyphae non-dextrinoid **8**
7. Skeletal hyphae dextrinoid **9**

8. Pore surface, tubes and context cream coloured..... **W. cremella**
8. Pore surface ochraceous to pale olivaceous, tubes pale olivaceous brown, subiculum pink ..... **W. roseocontexta**

9. Basidiocarps soft and fragile, margin mycelioid, pores 4–6 per mm, basidiospores globose to subglobose 3–4 × 3–3.5 µm, on gymnosperms *(Araucaria*) ..... **W. araucariae**
9. Basidiocarps tough, margin rounded, pores 6–8 per mm, basidiospores ellipsoid 3–3.5(4) × 2.5–3 µm, on angiosperms ..... **W. neotropica**

10. Upper surface brown to chestnut coloured **11**
10. Upper surface wood coloured or ochraceous **12**

11. Basidiocarps effused reflexed, pileus chestnut coloured, basidiospores ellipsoid, context duplex ..... **W. brunneo-ochraceo**
11. Basidiocarps dimdiate with tapering base, pileus pale brown, basidiospores globose, context homogenous ..... **W. palmicola**

12. Pores 1-3 per mm, ... **W. porilacerata**
12. Pores smaller **13**

13. Spores subcylindrical 5-6 x 3.5-4 µm ..... **Amylosporus auxiladorae**
13. Spores subglobose, 3-4 µm in diameter ..... **W. cremea**

Amylosporus auxiladorae Drechsler-Santos & Ryvarden,
Synopsis Fung. 35:5, 2016.
Basidiocarp annual, dimidiate to almost semistipitate, fanshaped with contracted base, 8 cm wide and 6 cm to the base from margin 1 cm thick at base, hard, pileus deep ochraceous, azonate, glabrous, but soft to feel as fine velvet,; pore surface dark ochraceous, pores round to angular, 3-5 pores per mm, a few even larger, dissepiments thin, tubes up to 2 mm deep, concolorous with the pore surface; context ochraceous, slightly darker towards to pileus, homogenous, dense and up to 8 mm thick.
Hyphal system dimitic; generative hyphae clamped, hyaline and thin-walled, 1.5-2.5 µm in diameter; skeletal hyphae dominating in the basidiocarp thick-walled to solid, hyaline, conspicuously wide, most 4- 8 µm wide, in the trama, negative in Melzers reagent, those of the context slightly dextrinoid in masses.
Basidia 14 -18 x 5-7 µm, clavate, 4-sterigmate,
Basidiospores 5-6 (7) 3.5-4 µm, subcylindrical to oblong ellipsoid finely asperulate, thin walled and amyloid.
Substrata. On dead hard wood.
Distribution. Known only from the type locality in Brazil.
Remarks. Macroscopically the species is similar to *W. palmicola,* but the dull azonate and soft pileus is different and it has also a more dimidiate to semistipitate basidiocarp. The

latter is the reason why it was described in *Amylosporus* rather than in *Wrightoporia*. Due to its intermediate shape it is included here with the *Wrightoporia* species.

Wrightoporia araucariae Westphalen & Reck,
Phytotaxa 162:95, 2014.
Basidiocarps annual, resupinate, thin, up to 3.5 mm thick, easily separable from the substratum, very soft and fragile when fresh, becoming somewhat tough upon drying; sterile margin white, narrow to wide, up to 9 mm, cottony and rhizomorphic; pore surface cream to white, pores regular, circular to angular, sometimes slightly elongated, 4–6 per mm, with entire and fragile dissepiments; tubes concolorous with the pore surface, up to 3 mm long; subiculum white to light cream, cottony, very thin, up to 0.5 mm thick.
Hyphal system dimitic; generative hyphae with clamps, hyaline and thin-walled, 2–2.5 µm diam., skeletal hyphae strongly dextrinoid, dominant in trama and context, hyaline, thick-walled, unbranched and sinuous, 1.5–4 µm diam, gloeopleurous hyphae hyaline, staining strongly in phloxine, 4.0–6.0 µm diam,
Basidia 13–15 × 4.5–5 µm clavate, tetrasterigmatic.
Basidiospores 3.5–4 × 3–4 µm, globose to subglobose, distinctly amyloid, hyaline, thin to slightly thick-walled, apparently smooth both in Melzer's reagent and KOH, finely verrucose under SEM.
Substrate. Dead logs of *Araucaria angustifolia*.
Distribution: Known only from the type locality in Rio Grande do Sul State in Brazil.
Remarks. *W. araucariae* is characterized by its very soft resupinate basidiocarps, its gloeopleurous hyphae, its host and the smooth spores when viewed in KOH or Melzers reagent.
W. avellanea has similar soft basidiocarps, but have larger pores (1–3/mm) and ellipsoid and distinctly asperulate basidiospores (3.5–4.5 × 2.5–3.5 µm).

Wrightoporia avellanea (Bres.) Pouzar,
Ceská Mycol. 20:173, 1966. - *Poria avellanea* Bres. in v. Höhnel, K. Akad. Wiss. Math. Naturw. Klas. Denk. Schr. 83:14, 1907.
Basidiocarp annual, resupinate, becoming widely effused, up to 12 cm in diameter and 8 mm thick, easily separable from the substrate, margin white to pale fulvous, membranaceous to arachnoid, often with several lobes, consistency soft fibrous-tough when dry; pore surface cream to pale fulvous, often with darker brown patches, dull, pores round to more irregular on near vertical surfaces, 1.5-3 per mm, dissepiments thin to rather thick; tubes up to 8 mm long, concolorous or slightly paler than the pore surface; subiculum fibrous, up to 1 mm thick, concolorous and continuing without change into the dissepiments.
Hyphal system dimitic; generative hyphae clamped, hyaline and thin-walled, 1.5-2.5 µm in diameter; skeletal hyphae dominating in the fruitbody, thick-walled to solid, hyaline to pale yellow, sometimes weakly branched, 1.5-2(3) µm wide, thick-walled, strongly dextrinoid.
Basidia 10-14 x 4-6 µm, clavate, 4-sterigmate.
Basidiospores subglobose to broadly elliptical, hyaline, slightly asperulate, thin- to slightly thick-walled, 3.5-4.5 x 2.5-3.5(4) µm, distinctly amyloid.

Substrata. Most common on hard wood, rarely on conifers.
Distribution. Widespread in the tropics, in the neotropics seen from Brazil, Jamaica, French Guiana and Venezuela.
Remarks. The species is recognized by the fairly large pores.

Wrightoporia bracei (Murrill) Lindblad & Ryvarden,
Mycotaxon 71:357, 1999. - *Polyporus bracei* Murrill, Mycologia 13:91, 1921. - *Amylosporus wrightii* Rajchenb., Mycotaxon 16:500, 1983. - *Wrightoporia efibulata* Lindblad & Ryvarden, Mycotaxon 71:357, 1999.
Basidiocarp annual, dimidiate to almost semistipitate, fanshaped with contracted base, 8 cm wide and 6 cm to the base from margin 3-8 mm thick, dense and slightly contracted and bent when dry; pileus dark brown, dull, slightly sulcate reflecting different stages of growth, pore surface dark ochraceous to fulvous towards the base, pores round to angular, 5-6 pores per mm, dissepiments thin, tubes up to 2 mm deep, concolorous with the pore surface; context ochraceous, homogenous, dense with a few thin black lines reflecting different stages of growth and up to 7 mm thick.
Hyphal system dimitic; generative hyphae with clamps, hyaline and thin-walled, 1.5-2.5 µm in diameter; skeletal hyphae dominating in the basidiocarp thick-walled to solid, hyaline, 1.5-2(3) µm wide, negative in Melzers reagent.
Basidia 10-14 x 4-6 µm, clavate, tetrasterigmatic.
Basidiospores globose 3-4 µm in diameter, finely asperulate, thin- to slightly thick-walled, distinctly amyloid.
Substrata. On root of living palm.
Distribution. Known from Costa Rica, Bahamas and Brazil.
Remarks. The species is unique by its combination of globose spores, dimdiate basidiocarp with small pores and the non dextrinoid skeletal

Wrightoporia brunneo-ochraceo David & Rajchenb.,
Mycotaxon 22:319, 1985.
Basidiocarp annual, effused reflexed, pileus up to 1 cm wide, upper surface cottony adpressed, chestnut coloured, pore surface cream to wood-coloured, pores irregular to angular, 3-4 per mm, some elongated to 2 mm, tubes concolorous with pore surface, context, duplex, the lower part concolorous with the tubes, the upper part pale chestnut-coloured.
Hyphal system dimitic to trimitic?; generative hyphae clamped, hyaline and slightly thick-walled 2.4 µm in diameter with some strongly branched side branches that may be taken for binding hyphae; skeletal hyphae thick-walled to solid, 2-6 µm wide, non dextrinoid.
Cystidia and other sterile hymenial elements absent.
Basidia not seen.
Basidiospores 3-3.5 x 2 µm, ellipsoid, asperulate, thin- to slightly thick-walled, distinctly amyloid.
Distribution. Known only from the type locality in Guadeloupe
Remarks. The species is recognized by chestnut coloured pileus and the duplex context besides the ellipsoid spores.

Wrightoporia cremea Ryvarden,
Mycotaxon 28:540, 1987.
Basidiocarp annual, pileate, broadly attached, up to 3 cm wide and long, upper surface cream to pale ochraceous, velutinate to glabrous, azonate consistency corky to soft fibrous-tough when dry; pore surface cream to wood-coloured, pores round to angular, 3-4 per mm, dissepiments thin to rather thick; tubes concolorous with pore surface, in the type with the distinct layers (biannual?), context, concolorous and up to 3 mm thick.
Hyphal system dimitic; generative hyphae clamped, hyaline and thin-walled, 1.5-3 µm in diameter; skeletal hyphae thick-walled to solid, 2-5 µm wide, strongly dextrinoid.
Basidia not seen.
Basidiospores subglobose, slightly asperulate, thin- to slightly thick-walled, 3 - 4.um in diameter or longest dimension, distinctly amyloid.
Distribution. Known only from the type locality in Brazil: Amazonas, Roraima.
Remarks. The species is recognized by the fairly large pores, pileate basidiocarp and cream coloured pileus.

Wrightoporia cremella Ryvarden nov. sp.,
Holotype: Costa Rica, Punta Arenas, Valle Coto Brus, Progreso Canino, Cotonceto, 1550 ma.s.l.,
3. November 2004, L. Ryvarden 46781 in herb. O.
Index Fungorum no. 552566.
Basidiocarp annual, resupinate,, up to 3 cm wide and long, soft, pore surface cream coloured, pores round, 7-8 per mm, tubes concolorous with pore surface, up to 2 mm deep, context thin, up to 300 µm thick, concolorous with the tubes.
Hyphal system dimitic; generative hyphae clamped, hyaline and thin-walled, 2-3 µm in diameter; skeletal hyphae thick-walled to solid, 2-5 µm wide, without reaction in Melzers reagent.
Basidia not seen.
Basidiospores, 3-3.5 x 4 µm, subglobose, slightly asperulate, thin-walled, distinctly amyloid.
Substrata. On a dead hardwood tree.
Distribution. Known only from the type locality in Costa Rica.
Remarks. The species is recognized by is even cream colour and soft consistency.

Wrightoporia lenta (Overh. & Lowe) Pouzar,
Ceská Mycol. 20:173, 1966. - *Poria lenta* Overh. & Lowe, Mycologia 38:210, 1946.
Basidiocarp resupinate, effused, up to 3 mm thick, separable to slightly adnate, tough when dry; pore surface white to cream, margin white, pores round to angular, often slightly sinuous on oblique substrates, on average 2-3 mm, thin-walled, tubes concolorous with pore surface, up to 2 mm deep; context thin and white.
Hyphal system dimitic; generative hyphae with clamps, 1-3 µm wide; skeletal hyphae thick-walled to solid, 1.5-3 µm wide, strongly dextrinoid; gloeopleurous hyphae rare and scattered, irregular and often with blunt side-branches, slightly yellowish when mounted in KOH, but negative in Melzer's reagent, diameter variable, mostly 3-6 µm, but parts up to 15 µm wide.

Basidia 15-20 x 4-8 µm, clavate, 4-sterigmate.
Basidiospores 5-6 x 4.5-5.5 µm, globose, finely asperulate, hyaline, amyloid.
Substrata. On deciduous wood and palms in subtropical and tropical areas.
Distribution. Widespread in United States, Central and South America and Africa.
Remarks. The species is recognized by its spores, larger those of the other species in the genus.

Wrightoporia monomitica Soares & Ryvarden, in sched.
Basidiocarp annual, resupinate, 3-4 cm in the largest piece, soft and fragile, margin white and very narrow, pore surface white to pale cream, pores round to more irregular on near vertical surfaces, 1-2 per mm, some slightly more irregular, tubes up to 1 mm deep, concolorous with the pore surface; subiculum very thin, almost invisible, cottony and white.
Hyphal system monomitic; generative hyphae with clamps, hyaline and thin-walled, 1.5-2.5 µm in diameter.
Cystidia and other sterile hymenial elements absent.
Basidia 12-15 x 4-6 µm, clavate, 4-sterigmate and with a basal clamp,
Basidiospores 4-5 x 3-4 µm, subglobose to broadly elliptical, hyaline, slightly asperulate, thin- thick-walled, distinctly amyloid.
Substrata. Found on a hard wood log.
Distribution. Known only from the type locality in Brazil.
Remarks. This is a remarkable species being the first one in the genus, to our knowledge, that has a monomitic hyphal system with a complete lack of skeletal hyphae which are present in all the other species. The ornamented amyloid spores point to *Wrightoporia* as the best genus, since *Anomoloma*, the alternative, includes only species with smooth amyloid spores.

Wrightoporia neotropica Ryvarden,
Karstenia 40 : 156, 2000. - *Wrightoporia. microporella* Ryvarden Synopsis Fung- 32 :79, 2014. **-** *Wrightoporia micropora* Aime & Ryvarden, Synopsis Fung. 23:28, 2007, non *Wrightoporia micropora* Buchanan & Ryvarden 2000.
Basidiocarps annual, resupinate, effused, up to 8 cm wide and 3 mm thick, strongly attached, soft when fresh, becoming contracted and partly curled when dry, pore surface . pore surface pale brown bruising darker brown when fresh, pores round, entire, 6–7 per mm, tube layer pale cinnamon brown, dense and hard, up to 1 mm thick, subiculum dense, pale cinnamon, up to 2 mm thick.
Hyphal system dimitic, generative hyphae hyaline, thin-walled, with clamps, 3–4 µm wide; skeletal hyphae thick-walled to solid, hyaline, distinctly dextrinoid, 4–5 µm wide.
Basidia 10–12 x 6–8 µm with 4 sterigmata.
Basidiospores 3–4 x 3 µm, subglobose, hyaline, finely asperate, thin-walled, amyloid.
Substrate. On dead hardwood in a *Dicymbe*-dominated forest.
Distribution. Known from Venezuela, Domnica, Jamaica and Guyana(type locality).
Remarks. The species is characterized by the nearly invisible pores, the pale cinnamon tubes, the subglobose amyloid spores, and dextrinoid skeletal hyphae. *Wrightoporia*

roseocontexta from Venezuela, is a similar species that differs in possessing a pink, soft and cottony context and subiculum, and an olivaceous pore surface.

Wrightoporia palmicola Baltazar & Ryvarden nov. sp.
Holotype: Brazil, Pernambuco, Recife, Hospital das Clinicas, Campus UFPT, 1, April 2008, Leg. Juliano M. Baltazar 317, on root of living palm. Herb. O.
Index Fung. No. 552567.
Basidiocarp annual, dimidiate to almost semistipitate, fanshaped with contracted base, 8 cm wide and 6 cm to the base from margin 3-8 mm thick, dense and slightly contracted and bent when dry; pileus dark brown, dull, slightly sulcate reflecting different stages of growth, pore surface dark ochraceous to fulvous towards the base, pores round to angular, 5-6 pores per mm, dissepiments thin, tubes up to 2 mm deep, concolorous with the pore surface; context ochraceous, homogenous, dense with a few thin black lines reflecting different stages of growth and up to 7 mm thick.
Hyphal system dimitic; generative hyphae clamped, hyaline and thin-walled, 1.5-2.5 µm in diameter; skeletal hyphae dominating in the basidiocarp thick-walled to solid, hyaline, 1.5-2(3) µm wide, negative in Melzers reagent.
Basidia 10-14 x 4-6 µm, clavate.
Basidiospores globose 3-4 µm in diameter, finely asperulate, thin- to slightly thick-walled, distinctly amyloid.
Substrata. On root of living palm.
Distribution. Known only from the type locality.
Remarks. The species is unique by its combination of globose spores, dimdiate basidiocarp with small pores and the non dextrinoid skeletal hyphae.

Wrightoporia porilacerata Leite, Gerber & Ryvarden,
Mycotaxon 67:252, 1998.
Basidiocarp annual, pileate, broadly attached, up to 13,5 long, 8.7 cm wide and 2 cm thick at the base, soft and fleshy when fresh, lightly of weight and fragile when dry, upper surface cream to pale ochraceous, glabrous, azonate; pore surface cream to wood-coloured, pores round to angular, x-y per mm, dissepiments thin and partly dentate; tubes concolorous with pore surface, in the holotype up to xx cm deep, lighter than the tubes, cream to almost white, soft and cottony. up to bb mm thick.
Hyphal system monomitic, generative hyphae with scattered clamps, hyaline and thin-to very thick-walled, 3-8 µm wide, very sparingly branched and segments of up to 400 µm seen without a clamp, non-dextrinoid.
The long segments without clamps may be interpreted as intercalary skeletal hyphae but since there are even transitions from the most delicately thin-walled hyphae to wide and almost solid ones, we interpret the thick-walled hyphae as so called sklerified generative hyphae.
Basidia clavate, 8-12 x 4-5 µm with 4 sterigmata and a basal clamp.
Basidiospores 3-3.5 (4) x 2-2.5 µm, subcylindrical to broadly ellipsoid, slightly asperulate, and strongly amyloid.
Distribution. Known only from the type locality.

Remarks. The species is recognized by the large, fleshy ochraceous basidiocarps, fairly large pores, its monomitic hyphal system with strongly variable width and wall thickness besides the subcylindrical amyloid spores. *W. cremea* is separated by almost globose spores and dextrinoid skeletal hyphae.

W. roseocontexta Ryvarden & Iturriaga,
Mycologia 95: 1076, 2003.
Basidiocarps annual, resupinate, effused, up to 3 cm wide and 1.5 mm thick, easily attached, soft when fresh, contracts and partly curled when dry, pore surface ochraceous to pale olivaceous brown, pores round, entire, 8-10 per mm; tube layer pale olivaceous brown, dense, resinous fragile, up to 07. mm thick, subiculum cottony, pink, up to 1 mm thick.
Hyphal system dimitic, generative hyphae hyaline, thin-walled, with clamps, 3-4 µm wide, skeletal hyphae thick-walled to solid, hyaline, non-dextrinoid, 4-5 µm wide.
Basidia 8-10 x 6-8 µm, barrel shaped,.
Basidiospores 3-4 µm in diameter, globose, hyaline, finely asperulate, thin-walled, amyloid,.
Distribution. Only known from the type locality in Venezuela.
Remarks. The species is recognized by the tiny pores, the pale olivaceous tubes, the globose spores and above all by a cottony distinctly pink context or subiculum.

Wrightoporia tropicalis (Cooke) Ryvarden,
Prelim. polypore flora East Afr. p. 619, 1980.- *Fomes tropicalis* Cooke, Grevillea 15:22, 1886.
Basidiocarp perennial, resupinate to semipileate becoming widely effused, up to 15 cm in diameter and 2.5 cm thick, consistency woody, hard and dense when dry, pileus fragmentary or absent, appearing as a black upper portion of the pore surface especially on vertical substrata, glabrous, dull or slightly shining, smooth or weakly sulcate, the pilear surface is darker brown towards the pore surface, but there is no distinct margin, only a thin white line towards the sterile margin round the pore surface, pore surface pale grey or brown with a whitish tint, pores circular to slightly elongated in radial direction, 6-7 per mm, dissepiments thin and entire, tubes distinctly stratified, totally up to 2.5 cm long, each stratum up to 1.5 mm long, colour grey to brownish near the pore surface, but in thick specimens more fulvous, rusty red to bay in the older parts, context fragmentary or lacking, light rusty brown.
Hyphal system trimitic, generative hyphae with simple septa, hyaline and thin-walled, 1.2-3 µm wide, soon collapsing and then very difficult to septa, skeletal hyphae dominant, thick-walled to solid, yellow to pale brown, weakly to heavily dextrinoid in Melzer's reagent, 3-4 µm in diameter, sometimes a few skeletal hyphae become strongly swollen at the apex, simulating clavate cystidia, with a diameter up to 10 µm. They occur infrequently and have only been seen deeply embedded in the trama.
Cystidia present as apical heavily encrusted ends of skeletal hyphae, crystal masses up to 20 µm in diameter and obscuring the apical end of the skeletal hyphae.
Gloeocystidia present, thin-walled to slightly thick-walled with granular to oily contents appearing refractive in phase contrast, 5-17 µm in diameter, up to 150 µm long, mostly

embedded in the trama but also curving into the hymenium but not projecting beyond it. In dried specimens they are partly collapsed and difficult to tease apart.
Basidiospores subglobose to broadly ellipsoid, hyaline, smooth to weakly verrucose (seen under SEM), thin-walled, 3-4 x 2-3 μm, weakly to strongly amyloid.
Substrata. On hard wood.
Distribution. Neotropical species from Puerto Rico and Guadeloupe to Brazil.
Remarks. The species is separated from the other ones in the genus by its thick, woody hard basidiocarps, the greyish to pale brownish pore surface, the gloeocystidia and the heavily encrusted skeletal cystidia. Macroscopically it reminds one of *Rigidoporus vinctus*, but this has simple septate generative hyphae and non-amyloid spores.
The genus *Larssoniporia* Y.C. Dai, Jia J. Chen & B.K. Cui 2015 has been described with this species as type.
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