

Synopsis Fungorum 41

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A new African *Ganoderma* species

by

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Abstract *Ganoderma insulare* is described as a new based on a specimen from The Seychelles.

Introduction.

During preparation for the forthcoming “Poroid fungi of Africa”, numerous specimens being stored over years after field work in Africa, were examined. Among them a new species was discovered and is described below.

Ganoderma insulare Ryvar den nov. sp. Index Fung.no 557 648

Holotype: Seychelles, Mahe, 2 km east of Anse Brulee, 3. March 1995, on dead palm, Ryvar den 35810 (O) (K-isotype).

Basidiocarps perennial, pileate, dimidiate to almost laterally stipitate, woody hard, semicircular, 8 cm in diam and 1.5 cm thick at the base, upper surface flat, sulcate, glabrous with a distinct cuticle in section, glossy, at first reddish to bay and then black from the base, margin almost vertical and distinctly delimited towards the pore surface, pore surface greyish brown, pores angular to circular, about 5-6 per mm with thick dissepiments, almost invisible to the naked eye, tube layer dark brown, up to 1 cm deep, context up to 1 cm thick at the base, ark brown homogenous.

Hyphal system dimitic; generative hyphae hyaline, thin-walled, with clamps, 2-5 μm in diam, skeletal hyphae abundant, thick-walled, yellowish brown, 2-6 μm in diam, occasionally dichotomously branched in the distal part coming close to arboriform hyphae.

Cuticle of lobate to branched apical cells of generative hyphae, thick-walled, pale yellowish brown, variably amyloid, up to 90 μm long from the clamp where they arise.

Basidiospores 13-14 x 5-6, distinctly turbinate, pale yellowish brown and finely ornamented.

Substrate. On dead palm.

Distribution. Known only from the type locality in the Seychelles.

Remarks. The lobate to branched cuticle cells with rounded branches and the fairly long turbinate spores are characteristic for this species.

Inonotus brasilensis nova sp.

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Abstract *Inonotus brasilensis* is described as new characterized by being pileate and with long setal hyphae, a rare feature in the genus.

Introduction During a running investigation of wood inhabiting fungi in Brazil, we came across a species which did not match any known species (see Ryvar den 2005), and thus, it is described as a new species.

Inonotus brasiliensis Xavier de Lima & Ryvar den, Index Fung. 557716.

Holotype: Brazil, Alagoas state: municipality of Quebrangulo, Biological Reserve of Pedra Talhada, V. Xavier de Lima (PPT184, URM), 06-VII-2017 (isotype in O)

Basidiocarps annual pileate and sessile, semicircular, up to 3 cm wide and 1.5 cm thick, pileus , upper surface yellowish brown, finely velutinate, probably becoming dark and finally blackish by age, judged from black zones in context, margin rounded, pore surface partly sloping, yellowish to cinnamon brown, pores round to angular, 7-9 per almost invisible to the naked eye, in sloping parts larger and angular, tubes concolorous, up to 1 mm deep, context dense, dark cinnamon coloured, stratified and with several black zones, probably reflecting pearlier pileate stages.

Hyphal system monomitic, generative hyphae, pale yellow to yellowish brown, parallel in the trama, 3-6 μm wide, in the context wider and mostly 4-7 μm wide with frequent simple septa.

Setal hyphae abundantly present, parallel with tube walls and projecting in the dissepiments, strongly pointed dark brown 4-15 μm wide and 120 μm long

Hymenial setae absent.

Basidia 12-15 x 4-6 μm . clavate, tetrasterigmatic.

Basidiospores 4-5.5. x 3.5-4.5 μm , subglobose, pale yellowish, slightly thick walled and negative Melzers solution.

Substrata. On dead hardwood

Distribution. Known only from the type locality.

Remarks. The long and thick walled, acute setal hyphae are striking characters in the species. The only other pileate species in Hymenochaetaceae with similar characters is *Phellinus neonoxius* Ryvar den, which however has hyaline basidiospores and a distinct dimitic hyphal system with skeletal hyphae.

Reference

Ryvar den, L. 2005: The genus *Inonotus* –a synopsis. Synopsis Fung. 21:1-129.

Inonotus millmanii nova sp.

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Abstract. *Inonotus millmanii* is described as new based on a collection from Puerto Rico. It is characterized by presences of large setal hyphae combined with a distinct duplex context. A key to all American *Inonotus* species with setal hyphae is provided.

Introduction.

Lawrence Millman, a well-known author and eager mycological amateur, has over years sent me poroid fungi collected while he was travelling around North America. Among his last samples from Puerto Rico there was an unknown *Inonotus* species, which is described in the following.

Inonotus millmanii Ryvarden n. sp. Index Fung. 557 650

Holotype: Puerto Rico, El Yunque, near Casa Cubuy, 2. March 2020, on a dead log of unknown hard wood tree, Leg. L. Millman. Holotype in fungarium FH, isotype in fungarium O.

Etymology: Named after L. Millman amateur mycologist.

Basidiocarps annual, pileate and sessile, pileus up to 1 cm wide, 3 cm long and 8 mm thick, soft when fresh, hard when dry, pileus soft and adpressed velutinate in concentric zones from dark brown at base to yellowish brown along the margin being orange when fresh, pore surface light brown when fresh, darker when dry, pores round to angular, 7-8 per mm, almost invisible to the naked eye, tubes concolorous, up to 3 mm deep, context duplex, lower part dense, homogeneous, yellowish brown, separated by a black line from the upper part, the latter cinnamon coloured, about 1 mm thick, loose in consistency, forming the pileus tomentum.

Hyphal system monomitic, generative hyphae, pale yellow to yellowish brown, parallel in the trama, 2.5-6 μm wide, in the context wider and mostly 4-7 μm wide with frequent simple septa.

Setal hyphae present, dark brown, thick walled, oriented more or less parallel to the tubes, 50-130 x 5-18 μm , sharply pointed.

Hymenial setae absent.

Basidia 14-18 x 4-6 μm , tetrasterigmatic.

Basidiospores 5-6 x 4-5 μm , subglobose to ovoid, thick walled and hyaline to pale yellow.

Substrata. Large fallen hard wood log.

Distribution. Known only from the type locality.

Remarks. The combination of a distinct duplex basidiocarp with a thin black zone separating lower and upper part of the pileus, small pores, presence of setal hyphae and absence of hymenial setae, make this a very distinct species.



**Key to American *Inonotus* species with setal hyphae
(For other *Inonotus* species, see Ryvarden 2005.)**

-
- 1. Basidiospores longer than 9 μm **I. quercustris**
 - 1. Basidiospores shorter than 9 μm **2**

 - 2. Chlamydospores present in context or on pileus **I. rickii**
 - 2. Chlamydospores absent **3**

 - 3. Basidiospores 6-9 μm long **I. patouillardii**
 - 3. Basidiospores up to 6 μm long **4**

 - 4. Hymenial setae absent **5**
 - 4. Hymenial setae present **6**

 - 5. Pores 3-4 per mmm, context homogenous **I. dentiporus**
 - 5. Pores 7-8 per mm, context distinctly duplex with black zone **I. millmanii**

 - 6. Basidiocarps resupinate to effused reflexed, pores angular 3-5 per mm, North American species **I. glomeratus**
 - 6. Basidiocarps distinctly pileate, pores 4-6 per mm, South American species.....
..... **I. pseudoglomeratus**

Reference

Ryvarden, L. 2005: The genus *Inonotus* –a synopsis. Synopsis Fung. 21:1-129.

Amnocutis, a new corticioid genus with affinities to water-soaked wood

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Abstract

The new genus and species *Amnocutis rivularis* are described from material collected in Norway and Sweden. Basidiomata develop on dead wood that becomes periodically submerged. The genus shares ecology with *Bulbillomyces* but differs by lacking an anamorph state. Morphologically *Amnocutis* is most similar to *Amphinema* but can not be placed in this genus because it does not form ectomycorrhiza.

Introduction

The fungus we describe here was first encountered on an excursion to Dovre mountain region in Central Norway 1982. Along a rivulet in a not very remarkable spruce forest, three small specimens of a white corticioid fungus were collected, all of them occurring on stems lying close to the water or even partly submerged. After examination these specimens remained unrecognized and provisionally filed as *Hypochnicium* sp. The next collecting season one of us visited the northern conifer forests of Sweden and then deliberately searched for new specimens of the unknown fungus, concentrating searches to riverbeds. At an abandoned saw-mill with abundant remnants of logs and wood products two specimens were found, again of small dimensions and again close to water. Later the same year the fungus was found in Norway on a second locality with settings very similar to the first one but now some 150 km further south. Since all specimens were small it was not obvious that the new species could be adequately described and there was also the problem of finding a suitable genus for it.

Twenty years later a fine specimen of the unknown fungus was discovered in a brook on one of the islands on the Norwegian West coast, not far from Kristiansund. This opened up an opportunity to investigate the species through molecular methods. DNA was extracted but sequencing failed. We still find it useful to describe the species in order to make it known and hopefully searched for by other corticiologists.

Materials and methods

Drawings and measurements were made from preparations in cotton blue in lactic acid and viewed in a Zeiss Standard light microscope equipped with Planapo phase-contrast lenses for oil-immersion. Material was also studied in preparations with 2 % KOH and Melzer's reagent. Acronyms for herbaria follow Thiers (2020).

Taxonomy

Amnocytes K.H. Larss. gen. nov.

Mycobank MB 834967

Basidiomata effused, soft, submembranous, whitish; hyphal system monomitic, all septa with clamps, subicular hyphae firm-walled; cystidia present, developing from subicular hyphae and extending beyond the hymenium; basidia clavate to clavo-pedunculate, with four sterigmata; basidiospores smooth, globose to subglobose, thin-walled.

Etymology: *amnys* (lat.) = stream and *cutis* (lat.) = skin.

Type species: *Amnocytes rivularis* (see below)

Amnocytes rivularis K.H. Larss. & F.G. Oldervik sp. nov.

Mycobank MB 834981

Holotypus. Norway. Møre & Romsdal, Aure, Ertvågsdalen, on deciduous wood in a stream, 5 July 2003, Leg. F. G. Oldervik 335.03 (herb. O, O-F-110333)

Basidiomata resupinate, effused, thin, soft, white to cream, older hymenium slightly brownish, loosely attached to the substrate, when young strongly porose and almost arachnoid, then minutely tufted and at maturity continuous and submembranous, slightly pilose from emerging cystidia, margin not differentiated. Hyphal system monomitic, all septa with distinct, often slightly flattened clamps, hyphae usually branching at or opposite a clamp, the emerging hypha often distinctly narrowed immediately beyond the branching point. Subiculum well developed, consisting of loosely interwoven, straight, moderately branched, 3–5 µm wide hyphae, many of them slightly thick-walled. Subhymenium only a thin transition between the subiculum and the basidial layer, with richly branched ca 4 µm wide, often strongly encrusted hyphae. Cystidia simple, hypha-like, developing from subicular hyphae, with thickened walls, projecting up to 20 µm beyond the basidia, basally often branched, septate, the apical cell often slightly widened and then lancet-like or narrowly clavate, 40–100 × 5–7 µm, slightly thick-walled, at first smooth, then heavily encrusted. Basidia clavate to clavopedunculate, thin-walled, 30–40 × 7–10 µm, with four, slightly curved up to 5.5 µm long sterigmata. Sterigmata often drawn slightly together and sitting 6–7 µm apart. Basidiospores subglobose to globose, thin-walled, with one large guttule, 5–5.5(–6) × 4.5–5(–5.5) µm, neither cyanophilous nor amyloid or dextrinoid.

Etymology: *rivularis* (lat.) = pertaining to running water.

Additional material examined. Norway. Hedmark, Öyer, Bårdsengbekken. 4 Oct. 1984. K.H. Larsson, KHL 4647 (GB); Sør-Trøndelag, Rennebu, Kløfta bru, Merrabekken, 24 Aug. 1982, leg. K. Hjortstam & K.H. Larsson, Hjm 12747 (K), 12748 (K), 12749 (K). Sweden. Lycksele Lappmark, Sorsele par., Grannäs, abandoned sawmill at the rivulet Västra Lairobäcken, on weathered timber close to the water, 28 Aug. 1983. K.H. Larsson, KHL 4102 (GB), *ibid.* 29 Aug. 1983. K.H. Larsson, KHL 4186 (GB).

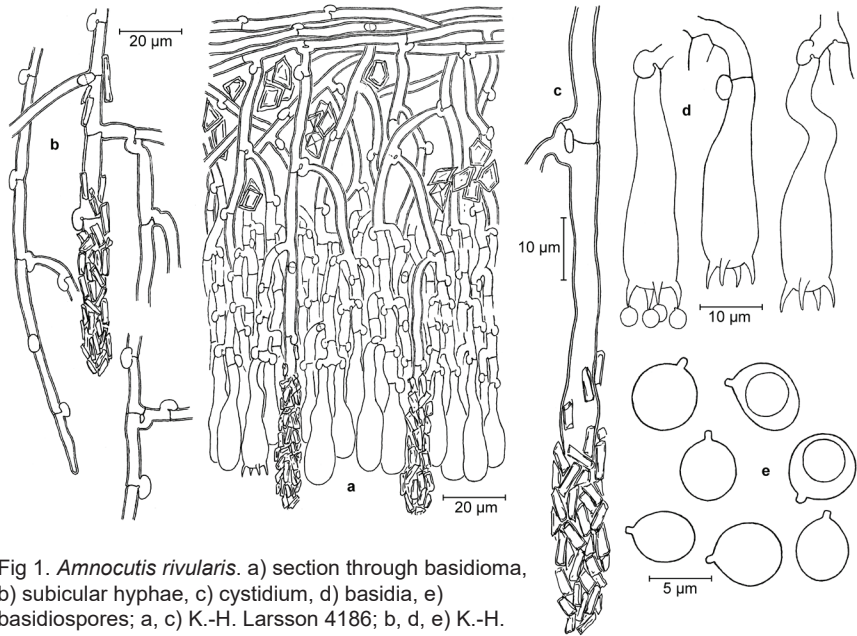


Fig 1. *Amnocyttis rivularis*. a) section through basidioma, b) subicular hyphae, c) cystidium, d) basidia, e) basidiospores; a, c) K.-H. Larsson 4186; b, d, e) K.-H. Larsson 4102.

Choosing a suitable genus for the new species proved difficult and the final solution was to introduce a new one. The initial idea to place the species in *Hypochnicium* could not be defended since basidiospores are not clearly thick-walled. *Bulbillomyces* is another interesting alternative because the type species, *B. farinosus*, has a similar ecology and also shares some morphological characters like incrustated cystidia, and subglobose spores. On the other hand, *Bulbillomyces* features an anamorph state, cystidia originate in the subhymenium, and basidia are cylindrical to utriform. A third possibility is *Amphinema* with which *Amnocyttis* shares the morphology of cystidia and, to some extent, also basidial form. However, true *Amphinema* species are ectomycorrhizal and it is unlikely that fruiting would take place in the wet environment where we find *Amnocyttis rivularis*.

All collections of this species were made close to running water and always on wood becoming periodically submerged. Basidiomata were always small and appeared as elongated patches on decorticated wood. It is probably not as rare as the number of finds indicates. Rather its habitat is usually not scrutinized by mycologists looking for wood-inhabiting fungi.

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Gloiothele olearia – a new name for a known species (Russulales, Basidiomycota)

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Abstract

Gloiothele olearia is described and illustrated. This species, primarily growing on *Olea europaea*, was earlier known as *Gloiothele torrendii*. A formal description under another name became necessary when the basionym, *Corticium torrendii*, was typified with material not conforming to the definition of *Gloiothele*. *Corticium torrendii* is currently placed in *Leptocorticium*.

Introduction

The genus *Gloiothele* comprises resupinate basidiomycetes with simple-septate hyphae, true gloeocystidia generated from gloeoplerous hyphae, and smooth, thin-walled, amyloid basidiospores. It belongs in Russulales and is most closely related to *Asterostroma*, *Scytinostroma*, and *Vesiculomyces* (Larsson and Larsson 2003). The genus is typified by the tropical species *Gloiothele lamellosa*, which deviates from other members of the genus by its coarsely hydroid-tuberculate hymenophore. From Europe two species are reported, the widespread *Gloiothele lactescens*, growing on a diversity of frondose trees, and the rare and little collected *G. torrendii*, originally described as *Corticium torrendii*, a species that eventually grows exclusively on olive trees.

Ghobad-Nejhad (2009) studied original material of *Corticium torrendii* and showed that specimens identified by Bresadola and Torrend and stored in herb S belonged to two different species. Ghobad-Nejhad (2009) selected one of the S specimens as type and her choice implied that *Corticium torrendii* became the name for a species with clamped hyphae, dendrohyphidia, little differentiated enclosed cystidia, and smooth, inamyloid basidiospores. Ghobad-Nejhad (2009) referred the species to *Leptocorticium*. This means that the species currently called *Gloiothele torrendii* is without a valid name. It is here described as *Gloiothele olearia*.

Materials and methods

Studied material is listed in the taxonomy section below. Specimens were studied in a Zeiss Axiomat compound microscope equipped with phase contrast immersion oil lenses for both 40X and 100X magnifications. Crush preparations were mounted in 2% KOH, Melzer's solution, or Cotton blue. Measurements were made in Melzer's solution.

Taxonomy

Gloiothele olearia K.H. Larss., Melo & Salcedo nov. sp.

= *Gloiothele torrendii* (Bres.) Boidin & Michel sensu auct., Bull. Trimestriel Soc. Mycol.

France 113: 95, 1997; non *Corticium torrendii* Bres., Atti Imp. Regia Acad. Roveretana

Ser. 3, 8: 131, 1902 = *Leptocorticium torrendii* (Bres.) Ghobad-Nejhad.

Mycobank MB 835045

Etymology: olearius = belonging to *Olea*

Basidiomata resupinate, effused but usually of small dimensions, rather thin, ceraceous to membranous, pale to dark ochraceous when fresh, margin pruinose or not differentiated. Hyphal system monomitic, hyphae 2–4 µm wide, thin-walled and without clamps, subiculum not very distinct, subhymenium thickening, composed of densely united, vertically growing hyphae. Gloeocystidia numerous, cylindrical to fusiform, often gradually tapering, 40–100 × 8–10 µm, with yellowish, often granular contents, giving a bluish-black reaction when mounted in sulfo-vanillin. Basidia narrowly clavate to suburniform, 45–60 × 6–7 µm, with (2–)4 sterigmata. Basidiospores globose to subglobose, 7–8.5(–9.5) × 6–7.5 µm, smooth, thin-walled, weakly amyloid, most easily observed in clusters of empty basidiospores.

Holotype: SPAIN. La Gomera, Agulo, Parque Nacional de Garajonay, Meriga, on angiosperm, 3 Feb. 2007, leg. I. Salcedo et al. 11189IS (herb. BIO, BIO-Fungi 11969; isotype GB); GenBank MT240525

Hitherto only with certainty collected on olive, *Olea europaea*, usually on the trunks of living trees (Melo 1994). A rare species reported only a few times in Portugal, Spain, and Southeast France, but probably with a much wider distribution in the Mediterranean area where *Olea europaea* is grown.

Additional material studied. PORTUGAL. Lisboa. Ad truncus *Olea eur.*, leg. Torrend 402 (S F14598); Lisboa, Tapada do Ajuda. Ad ramos Oleae, 1910-04, leg. C. Torrend, Fungi Sel. Exs. No 64 (S F325801; TAM); ad truncus Oleae vulg., leg. C. Torrend (PC 0085654); Ribatejo, Torres Novas, Zibreira, 39°28'47.7"N 8°36'06.4"W, 132 msl, on a living trunk of *Olea europaea*, 11 Mars 2014, I. Melo & J. Cardoso, 12301 IM (LISU 254023; dupl. in GB) SPAIN. La Gomera, Agulo, Parque Nacional de Garajonay, Meriga, on angiosperm, 3 Feb. 2007, leg. I. Salcedo et al. 11188IS (herb. BIO, BIO-Fungi 11968); ibid. on cf. *Persea*, 3 Feb. 2007, leg. I. Salcedo et al. 11192IS (herb. BIO, BIO-Fungi 11972).

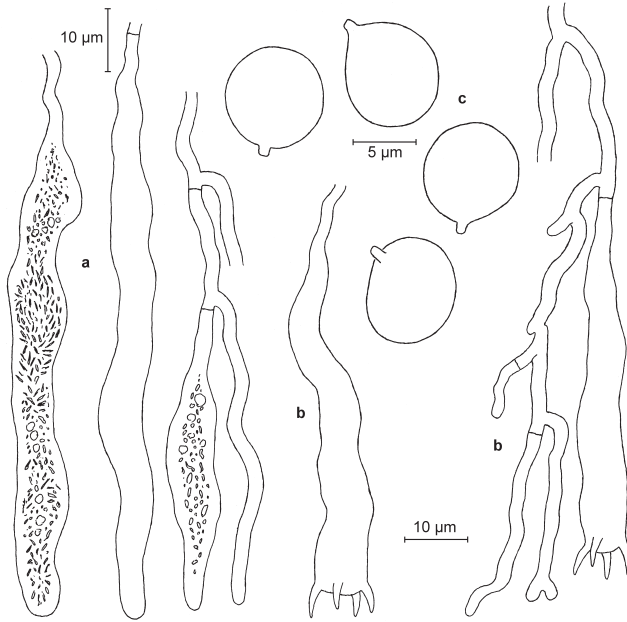


Fig. 1.
Gloiothele olearia.
 a) gloeocystidia,
 b) basidia,
 c) basidiospores.
 Holotype.

Discussion

Corticium torrendii was described by Bresadola on material collected and communicated by Torrend (Bresadola 1902). The confusion around the identity of *Corticium torrendii* started when Torrend later discovered what he considered to be the same species at another locality (Tapada da Ajuda) but now reported it as *Gloeocystidium torrendii* (Bres.) Torrend (Torrend 1913). The original, rather brief species description was emended with information about numerous enclosed gloeocystidia and accompanied by an illustration, clearly showing typical gloeocystidia with granular contents. Torrend remarked that the species exuded pale milk and he noted the similarities to *Gloeocystidium (Gloiothele) lactescens*.

Donk (1956) made the combination to *Gloeocystidiellum* but it is unclear if he ever studied authentic material. The species was then encountered in France 1996 and this discovery inspired Boidin and Michel (1997) to study also Torrend material sent to Bourdot and preserved at herb. PC. Since Boidin and Michel (1997), in accordance with the description by Bourdot and Galzin (1928), found hyphae to be simple-septate they concluded that *Corticium torrendii* should be placed in *Gloiothele* and also made the appropriate combination.

We restudied five Torrend collections stored at herb. S, one collection from herb. PC, and two collections from herb TAM, where some of Torrend's herbarium is kept. All collections were made from olive trees. Four collections contain a fungus without clamps. One of these specimens (F14598, herb S) is not dated and collected in the vicinity of Lisboa. The second specimen (F325801) was distributed by Torrend in his *Fungi Selecti Exsiccati* as number 64a and is a part of the specimen from Tapada da Ajuda that Torrend (1913) reported as *Gloeocystidium torrendii*. The third specimen, received from TAM but unfortunately in rather bad condition, is presumably a part of the same exsiccate specimen. The specimen sent by Torrend to Bourdot and kept in PC does not carry a date or a specified locality. The remaining three specimens from herb S, including the one reported as a holotype by Ghobad-Nejhad, and the second specimen from TAM have clamped hyphae and are conspecific.

Hjortstam (1989) studied *Corticium scariosum* Berk. & M.A. Curtis and observed clampless hyphae, presence of sulfo-aldehyde negative gloeocystidia and subglobose, inamyloid basidiospores measuring 10–12 µm. Hjortstam concluded that these characters were essentially the same as in *Gloeocystidium torrendii* (Bres.) Torrend but he was at that time not aware of the true identity of the latter species and thus refrained from making any combination. We agree with Boidin & Michel (1997) that the characters reported for *Corticium scariosum* makes it unlikely that it is a synonym of *Gloiothele olearia*.

Larsson and Larsson (2003) included *Gloiothele olearia* (as *G. torrendii*) in a molecular phylogenetic study of Russulales. The sequence they used was generated from a culture of one of the collections from France reported by Boidin & Michel (1997), viz LY 16815. We compared this ribosomal sequence (5.8S, ITS2, LSU) with the sequence we generated from the holotype of *G. olearia* and found them to be identical.

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Some polypores from Cameroon

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&

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Abstract

Antrodiella bicontexta Henkel & Ryvarden, *Ceriporiopsis aurantica* Henkel & Ryvarden, *Ceriporiopsis minisporus* Henkel & Ryvarden and *Junghuhnia confusa* Henkel & Ryvarden are described as new species based on specimens from Dja Biosphere reserve in Cameroon.

Introduction

One of us (T.H.) has made mycological explorations of the rainforest in the Dja Biosphere Reserve in Region East of Cameroon over a period of 4 years. The main object was to investigate the Ectomycorrhizal Mycota. However, on many of the fallen dead trees in the forest, it was unavoidable not to observe many polypores out of which some were collected. They were later sent to the second author for examination. The specimens and holotypes are deposited in The Humboldt State University Fungarium, HSC with duplicates and the lectotypes in the Oslo university Fungarium, O. The numbering is that of the first author.

List of species

- Abundisporus fuscopurpureus* (Pers.) Ryvarden, 11025.
- Amauroderma kwiluensis* (Beeli) Ryvarden, 11019.
- Amauroderma rugosum* (Fr.) Torrend, 11022.
- Antrodiella cinerea* Tseingang, Mossebo & Ryvarden, 11008.
- Coltricia dependens* (Berk.) Murrill, 10374.
- Cymatoderma elegans* Junghuhn, 10606.
- Donkia sanguinea* (Beeli) Maas Geest., 10642.
- Ganoderma chalceum* (Cooke) Steyaert, 11020.
- Ganoderma hildebrandii* (Henn.) Ryvarden, 11021.
- Haddowia longipes* (Lev.) Steyaert, 10758.
- Perenniporia inflexibilis* (Berk. & M. A. Curtis) Ryvarden, 11007.
- Perenniporia martia* (Berk.) Ryvarden, 10989.
- Phellinus fastuosus* (Lev.) Ryvarden, 10716.
- Rigidoporus lineatus* (Pers.) Ryvarden, 10715.
- Rigidoporus ulmarius* (Fr-) Imazeki, 10618.
- Rigidoporus undatus* (Pat.) Ryvarden, 10987.

Rigidoporus vinctus (Berk.) Ryvardeen, 10656.
Schizopora paradoxa (Fr.) Donk, 10766.
Scytinostroma duriusculum (Berk.) Donk, 10709.
Serpula similis (Berk. & Broome) Ginns, 10654.
Tinctoporellus epimiltinus (Berk.) Ryvardeen, 1099, 11005.
Trametes cotonea (Pat. & Hariot) Ryvardeen, 10992.
Trametes inaequabilis (Berk.) Ryvardeen, 10605.
Trametes menziesii (Berk.) Ryvardeen, 11026.
Trametes sanguinea (Fr.) Lloyd, 11018.

New species

Antrodiella bicontexta Henkel & Ryvardeen, Index Fung. 557 651

Holotype: Cameroon, Dja River Basin, 3 km S. of Somaloma village, Coll. Henkel 11023 in Humboldt State University Fungarium, HSC, isotype in O.

Basidiocarps annual, pileate, dimidiate with contracted base, about 2 x 2 cm and 4 mm thick, soft when fresh, rigid when dry, tough when fresh, hard and brittle when dry, pileus citric yellow, glabrous, smooth when dry slightly wrinkled radially when dry, margin even and sharp, pore surface white, pores angular, 4-5 per mm, tubes white and 2 mm deep, context duplex, the lower part up to 0.6 mm thick white and dense, upper parts sharply delimited and citric yellow.

Hyphal system dimitic; generative hyphae with clamps, hyaline, thin-walled, 2-5 µm wide and with distinct even thick walls when observed in Melzers solution, slightly swollen in 3 % KOH, skeletal hyphae seen as very long hyphal segment (up to 90 µm long) terminated with a clamp. It may be discussed whether these hyphae represent sklerified generative hyphae or skeletal hyphae as such, occurring as segments between sections of ordinary generative hyphae.

Basidia 8-12 x 4-6 µm tetrasterigmatic.

Basidiospores 2.5-3 x 2-2.5 subglobose. smooth, hyaline, non dextrinoid.

Substrate: Dead hard wood log.

Distribution. Known only from the type locality.

Remarks. The differently coloured context, reflected in the Latin epithet, is a distinct character for this species.

Ceriporiopsis aurantica Henkel & Ryvardeen, Index Fung. 557 652

Holotype: Cameroon, Dja River Basin, 3 km S. of Somaloma village, Coll. Henkel 10988 in Humboldt State University Fungarium, HSC, isotype in O.

Basidiocarps annual, resupinate about 2 x 2 cm and 4 mm thick, soft when fresh, hard and brittle when dry, margin narrow, 1-2 mm wide, pale orange, pore surface deep orange, pores angular, thin walled, 6-7 per mm, tubes yellowish orange, resinous hard and dense, up to 5 mm deep, subiculum whitish to pale orange, almost invisible to the naked eye.

Hyphal system monomitic, generative hyphae with clamps, hyaline, thin-walled, 2-5 µm wide.

Basidia 8-12 x 4-6 µm tetrasterigmatic.

Basidiospores 1 x 3.5-4, allantoid, smooth, hyaline, non dextrinoid.

Substrate: Dead hard wood log.

Distribution. Known only from the type locality.

Remarks. The beautiful orange colour, the dense structure and the small allantoid spores make this a distinct species.

Ceriporiopsis minisorus Henkel & Ryvardeen, Index Fung. 557 653

Holotype: Cameroon, Dja River Basin, 3 km S. of Somaloma village, Coll. Henkel 11009 in Humboldt State University Fungarium, HSC, isotype in O.

Basidiocarps annual, resupinate about 5 x 2 cm and 3 mm thick, soft when fresh, hard and brittle when dry, margin wide to narrow, 1-6 mm wide, white, pore surface white, pores angular, thin walled, 1-4 per mm, tubes white, up to 3 mm deep, subiculum white, 0.5 mm thick.

Hyphal system monomitic, generative hyphae with clamps, hyaline, thin-walled, 2-4 μ m wide.

Basidia 8-10 x 4-5 μ m tetrasterigmatic.

Basidiospores subglobose, 2 x 2.5 μ m, 1 x 3.5-4, smooth, hyaline, non dextrinoid.

Substrate: Dead hard wood log.

Distribution. Known only from the type locality.

Remarks. The angular pores, the pure white basidiocarp and the small spores and distinct characters for this species.

Junghuhnia confusa Henkel & Ryvardeen, Index Fung. 557 654

Holotype: Cameroon, Dja River Basin, 3 km S. of Somaloma village, Coll. Henkel 10991 in Humboldt State University Fungarium, HSC, isotype in O.

Basidiocarps annual, resupinate, adnate about 6 x 2 cm and 2 mm thick, soft when fresh, hard and brittle when dry, margin narrow to absent, pore surface whitish to ochraceous with a slight violet tinge, pores angular, 7-9 per mm almost invisible to the naked eye, tubes concolorous with the tubes, up to 2 mm deep, subiculum almost absent, whitish.

Hyphal system dimitic; generative hyphae with clamps, hyaline, thin-walled, 2-4 μ m wide, skeletal hyphae hyaline to slightly brownish, 2-5 μ m wide.

Cystidia smooth, partly embedded as swollen organs, partly bending into the hymenium and pointed swollen hyphal ends, those embedded slightly thick walled, 4-12 μ m wide, up to 80 μ m long,

Basidia 8-10 x 4-5 μ m tetrasterigmatic.

Basidiospores 3-3.3 x 2-2.2 subglobose. smooth, hyaline, non dextrinoid.

Substrate: Dead hard wood log.

Distribution. Known only from the type locality.

Remarks. The partly swollen hyphal cystidia, the dense structure and the small spores characterize this species.

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Some new polypores from Cameroon

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Abstract

Amauroderma albocontexta Ryvarden, *Antrodiella alba* Ryvarden, *Ceriporiopsis alba* Ryvarden, *Ceriporiopsis subalba* Ryvarden, *Ceriporiopsis minispora* Ryvarden, *Diplomitoporus phellinicola* Ryvarden, *Junghuhnia multicystidiata* Ryvarden *Navisporus cinnamomea* Ryvarden and *Tyromyces minutellus* Ryvarden and are described as new based on collections from Dja Biosphere Reserve in Cameroon.

Introduction

The Dja Biosphere Reserve in Region East of Cameroon is mycologically a very rich area. I had the opportunity to collect poroid and corticoid fungi there together with professor T. Henkel and his collaborators for 12 days in September 2019. Previous collections by professor Henkel are reported in a separate paper in this series. In the following the poroid species is listed alphabetically according to genus and as all collecting numbers are within my 50 000 series, only the three last digits are given. All collections are deposited in the Oslo Fungarium (O) with duplicates in the university herbarium in Yaoundé (YA). The determinations of the corticoid species, done by Dr V. Spirin at the Helsinki University, will be reported later.

List of species

Corticiaceae (s. alto)

Cymatoderma dendriticum (Pers.) D. Reid.

C. elegans Junghuhn.

Laxitextum lutescens Hjortstam & Ryvarden.

Podocypha bolleana (Mont.) Boidin.

P. involuta (Kl.) Imazeki.

P. thozetii (Berk.) Boidin.

P. venustula (Speg.) D. Reid.

P. parvula (Lloyd) D. Reid.

Trechispora brasiliensis (Corner) K.J. Larsson.

Beenakia sanguinea (Beeli) Maas.Geest.

Ganodermataceae

Amauroderma albocontexta Ryvarden, nova species Index Fung. 557 655

Holotype: Cameroon, Dja Biosphere Reserve, NW Dja sector, 3 km S of Somalomo village, 15 September 2019, on dead hard wood log, Coll. Ryvarden 50426 in Fungarium

Oslo University, O, isotype in (Herbarium of the Department of Plant Biology and Physiology of the University of Yaoundé 1 in Cameroon).

Basidiocarps centrally stipitate, pileus up to 7 cm wide and centrally depressed, about 2 mm thick, pileus initially white becoming grayish to light ochraceous, glabrous, slightly radially wrinkled when dry, cortex very thin to apparently absent, stipe single to a few together from the same base, up to 7 cm long and 5 mm wide, brown, dull, longitudinally wrinkled when dry, context white below a thin addressed tomentum below which there is a thin dark cortex, the core dense with a hollow central core and with a faint dark zone between the core and the outer cortex, pore surface ochraceous, pores round, 7-9 per mm, hardly visible to the naked eye, tubes 1 mm deep, ochraceous, context white, about 1 mm thick.

Hyphal system dimitic, generative hyphae with clamps, hyaline, 2-4 μm wide, arboriform hyphae dominate in the basidiocarp, hyaline, up to 6 μm wide in the main stem, non-dextrinoid.

Basidia semi globose, up to 20 μm high and 12 μm wide with 4 sterigmata.

Basidiospores 7-9 (10) μm in diameter, globose, pale yellowish when mature, finely ornamented, dextrinoid in Melzers solution.

Substrata On the ground in tropical forest.

Distribution Only the type and an isotype have been seen.

Amauroderma kwiluensis (Beeli) Ryvarden.

A. sericatum (Lloyd) Wakef.

A. preussii (Henn.) Steyaert.

A. rugosum Schw. & Nees) Torrend.

Ganoderma allaudii Pat. & Hariot.

G. chalceum (Cooke) Steyaert.

G. hildebrandii Hennings.

G. simulans Wakef.

Haddowia longipes (Lev.) Steyaert.

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Hericiaceae

Amylonotus flavus (Ryvarden) Ryvarden.

Dentipellis leptodon (Mont.) Maas-Gest.

Gloiodon strigosus (Fr.) P. Karst.

Hymenochaetaceae

Coltricia cinnamomea (Fr.) Murrill.

Hymenochaete pinnatifida Burt.

Phellinus carteri (Cooke) Ryvarden.

P. contiguus (Fr.) Pat.

P. fastuosus (Lev.) Ryvarden.

P. ferruginosus (Fr.) Pat.

P. gilvus (Schw.) Pat.

P. nilgheriensis (Berk.) Cunningh.

Polyporaceae

Abundisporus fuscopurpureus (Pers.) Ryvarden.

Antrodiella afrocitrina Ipulet & Ryvarden.

Antrodiella alba Ryvarden, nova species, Index Fung. 557 656

Holotype: Cameroon, Dja Biosphere Reserve, NW Dja sector, 3 km S of Somalomo village, 15 September 2019, on dead hard wood log, Coll. Ryvarden 50495 in Fungarium Oslo University, O, isotype in the Herbarium of the Department of Plant Biology and Physiology of the University of Yaoundé 1 in Cameroon,

Basidiocarps annual, pileate, pileus white, 1 cm wide, 2-4 mm thick, soft when fresh, hard and brittle when dry, white, glabrous, smooth when fresh, slightly scurpouse and radially wrinkled when dry, margin sharp, pore surface white, pores angular, 4-5 (6) per mm, tubes up to 2 mm deep, white, subiculum 0.5 mm thick, white.

Hyphal system dimitic; generative hyphae with clamps, hyaline, thin-walled, branched, 2-5 µm wide, skeletal hyphae thick walled, 2-4 µm wide.

Basidia 10-14 x 4-6 µm, clavate with 4 sterigmata.

Basidiospores 4-5 x 2-2.2 µm, cylindrical, smooth, hyaline, non dextrinoid.

Substrate: Dead hard wood log.

Distribution. Known only from the type.

Remarks. The whitish basidiocarps with angular pores and small cylindrical spores characterize this species.

A. duracina (Pat.) Lindblad & Ryvarden.

A. hydrophila (Berk. & M. A. Curtis) Ryvarden.

A. xantha (David & Rajchenb.) Ryvarden.

Ceriporia leptoderma (Berk. & Broome) Ryvarden.

C. mucida (Pers.) Gilbn. & Ryvarden.

Ceriporiopsis angulatosporus Ryvarden.

Ceriporiopsis alba Ryvarden, nova species, Index Fung. 557 657

Holotype: Cameroon, Dja Biosphere Reserve, NW Dja sector, 3 km S of Somalomo village, 15 September 2019, on dead hard wood log, Coll. Ryvarden 50665 in Fungarium Oslo University, O, isotype in the Herbarium of the Department of Plant Biology and Physiology of the University of Yaoundé 1 in Cameroon),

Basidiocarps annual, resupinate, soft when fresh, hard and brittle when dry, margin narrow, white, pore surface white, pores round, 7-9 per mm, almost invisible to the naked eye, tubes up to 1 mm deep, white, subiculum hardly visible and white,

Hyphal system monomitic; generative hyphae with clamps, hyaline, thin-walled, branched, 2-5 µm wide.

Basidia 8-12 x 4-6 µm, clavate with 4 sterigmata.

Basidiospores 4-5 x 3-3.5 µm, elliptic, smooth, hyaline, non dextrinoid.

Substrate: Dead hard wood log.

Distribution. Known only from the type locality.

Remarks. A pure white basidiocarp, tiny pores and elliptic spores characterize this species.

Ceriporiopsis subalba Ryvarden, nova species, Index Fung. 557 658

Holotype: Cameroon, Dja Biosphere Reserve, NW Dja sector, 3 km S of Somalomo village, 15 September 2019, on dead hard wood log, Coll. Ryvarden 50657 in Fungarium Oslo University, O, isotype in (Herbarium of the Department of Plant Biology and Physiology of the University of Yaoundé 1 in Cameroon),

Basidiocarps annual, resupinate, soft when fresh, brittle when dry, margin wide in part on sloping areas white, pore surface whitish with faint pale brown areas, pores round, 5-6 per mm, tubes up to 1 mm deep, white, subiculum hardly visible and white,

Hyphal system monomitic; generative hyphae with clamps, hyaline, thin-walled, branched, 2-5 μm wide.

Basidia 10-16 x 4-6 μm , clavate with 4 sterigmata.

Basidiospores 4.5-5 x 3.5-4 μm , oblong elliptic to almost subcylindrical, smooth, hyaline, non dextrinoid.

Substrate: Dead hard wood log.

Distribution. Known only from the type locality.

Remarks. A pure white basidiocarp and the oblong elliptic spores characterize this species.

C. globosporum Ryvarden.

C. gilvescens (Bres.) Domanski.

Cerrena meyenii (Kl.) Hansen.

Datronia caperata (Berk.) Ryvarden.

Dichomitus camerooniensis Ryvarden.

Diplomitoporus africanus Ryvarden.

D allantoporus Ryvarden.

D. ethiopicus Ryvarden.

D. irregularis Ryvarden.

Diplomitoporus phellinicola Ryvarden, nova species Index Fung. 557 659

Holotype: Cameroon, Dja Biosphere Reserve, NW Dja sector, 3 km S of Somalomo village, 15 September 2019, on dead basidiocarp of *Phellinus* sp., Coll. Ryvarden 50473 in Fungarium Oslo University, O, isotype in (Herbarium of the Department of Plant Biology and Physiology of the University of Yaoundé 1 in Cameroon),

Basidiocarps resupinate, up to 400 μm thick, adnate, brittle when dry, margin white hardly visible, pores minute, hardly visible to the naked eye, 7-9 per mm wide, pore surface white to pale ochraceous, tube layer concolorous with pores, up to 400 μm thick, subiculum very thin, white.

Hyphal system dimittic, generative hyphae with clamps, 2-4 μm wide, skeletal hyphae, solid to thick-walled, hyaline, negative in Melzer's reagent, 2-5 μm in diam.

Basidiospores 3-3.5 x 1, allantoid, smooth, negative in Melzers solution.

Basidia not seen.

Substrate. Dead basidiocarp of a *Phellinus* sp.

Distribution. Known only from the type locality.

Remarks. The species is remarkable by its tiny allantoid spores and the substrate.

Grammothele africana Ryvarden.

Junghuhnia multicystidiata Ryvarden, Index Fung. 557 660

Holotype: Cameroon, Dja Biosphere Reserve, NW Dja sector, 3 km S of Somalomo village, 15 September 2019, on dead hard wood log, Coll. Ryvarden 50710 in Fungarium Oslo University, O, isotype in (Herbarium of the Department of Plant Biology and Physiology of the University of Yaoundé 1 in Cameroon).

Basidiocarps annual, resupinate, soft when fresh, dense and hard when dry, margin white narrow to almost absent, pore surface white with a faint bluish tinge, pores tiny, invisible to the naked eye, 12-14 per mm. round, tubes 2 mm deep, pale ochraceous.

Hyphal system dimitic, generative hyphae delicately thin walled, hyaline, difficult to observe, 2-4 μm wide and with clamps, skeletal hyphae thick walled, hyaline to slightly brownish, 2-6 μm wide, running distinctly parallel to pore walls.

Cystidia numerous, prominent, partly projecting, smooth, mostly thin walled, hyphoid, in part slightly swollen, 5-10 μm wide, measured up to 110 μm long, mostly straight, but often bent into the hymenium.

Basidia not seen.

Basidiospores 2-3 x 1 μm , few seen.

Substrata: Dead hard wood.

Distribution. Known only from the type.

Remarks. The very small pores, the dense consistency, the numerous hyphoid cystidia and the tiny spores characterize this species.

Microporellus colybiaeformis (Beeli) Ryvarden.

M. obovatus (Jungh.) Ryvarden.

Microporus affinis (Bl. & Nees: Fr.) Kunth.

M. vernicipes (Berk.) Ryvarden.

M. xanthopus (Fr.) Kunth.

Navisporus cinnamomea Ryvarden, Index Fung. 557 661

Holotype: Cameroon, Dja Biosphere Reserve, NW Dja sector, 3 km S of Somalomo village, 15 September 2019, on dead hard wood log, Coll. Ryvarden 50512 in Fungarium Oslo University, O, isotype in (Herbarium of the Department of Plant Biology and Physiology of the University of Yaoundé 1 in Cameroon).

Basidiocarps annual, laterally stipitate, pileus semicircular, up to 2 cm wide, up to 5 mm thick, tough to corky, upper surface evenly cinnamon brown, dull, slightly radially rugulose, margin sharp, pore surface white, pores round to slightly irregular, 1-2 per mm, tubes white up to 3 mm deep in center, context homogenous cinnamon brown, continuing into the stipe core.

Hyphal system dimitic, generative hyphae hyaline, delicately thin-walled, with clamps, 2-4 μm wide, skeletal hyphae dominating, hyaline, thick-walled with distinct lumen, 3-5 μm wide, slightly dextrinoid.

Basidia 15-22 x 4-7 μm , tetrasterigmatic.

Basidiospores 7-8 x 4.5-5.5 μm , ovoid to elliptic, hyaline, smooth and non-dextrinoid.

Distribution. Known only from the type locality in Cameroon

Remarks. The lateral, robust basidiocarps with a even cinnamon colour on pileus and stipe besides the large, partly angular pores, characterize this peculiar species. Even if the spores are not navicular, the other characters seem to indicate that *Navisporus* is a correct genus for this distinct and beautiful species

Nigrofomes melanoporus (Mont.) Murrill.
Nigroporus durus (Jungh.) Corner.
Perenniporia afrostopitata Ryvarden.
P. inflexibilis (Berk. & M. A. Curtis) Ryvarden.
P. mundula (Wakef.) Ryvarden.
Polyporus dictyopus Mont.
P. grammocephalus Berk.
P. hemicapnoides Berk. & Broome.
P. philippinensis Berk.
P. tenuiculus (Beauv.) Fr.
Porogramme azurica Ryvarden.
Rigidoporus crocatus (Kl.) Ryvarden.
R. ulmarius (Fr.) Imazeki.
R. undatus (Berk.) Ryvarden.
R. vincatus (Berk.) Ryvarden.
Schizopora cystidiata David & Rachjenb.
S. paradoxa (Fr.) Donk.
S. trichilae (Van d. Byl.) Ryvarden.
Sidera vulgaris (Fr.) Miettinen.
Skeletocutis afronivea Ryvarden.
S. nivea (Jungh.) Keller.
Tinctoporellus epimiltinus (Berk.) Ryvarden.
Trametes byrsina (Mont.) Pat.
T. inaequabilis (Berk.) Ryvarden.
T. menziesii (Berk.) Ryvarden.
T. polyzona (Pers.) Corner.
T. varians Van d. Byl.
T. vespacea (Pers.) Zimtr.
T. villosa (Fr.) Kreisel.
Trichaptum durum (Jungh.) Corner.
Tyromyces globosporus Ipulet & Ryvarden.
T. kenyensis Ryvarden.

Tyromyces minitellus Ryvarden, Index Fung. 557 661

Holotype: Cameroon, Dja Biosphere Reserve, NW Dja sector, 3 km S of Somalomo village, 15 September 2019, on dead hard wood log, Coll. Ryvarden 50491 in Fungarium Oslo University, O, isotype in (Herbarium of the Department of Plant Biology and Physiology of the University of Yaoundé 1 in Cameroon).

Basidiocarps annual, sessile, pileus semicircular, up to 4 cm long, 1 cm wide, up to 6 mm thick, soft when fresh, more fragile when dry, pileus glabrous, white, minutely scrupose,

azonate adpressed cottony, in parts with brown tinges where touch in fresh condition, margin sharp, pore surface whitish to pale ochraceous with brownish shades where touched in fresh condition, pores thin-walled, angular and in parts slightly irregular 1-4 per mm, tubes white, up to 1 mm deep, context up to 5 mm thick, homogenous and white.

Hyphal system monomitic, generative hyphae hyaline, thin to slightly thick walled and with clamps, 3-10 μm wide,

Basidia 15-20 x 4-7 μm , tetrasterigmatic.

Basidiospores 5-6 (7) x 4-5 μm , elliptic, hyaline, smooth and non-dextrinoid.

Distribution. Known only from the type locality in Cameroon

Remarks. The large angular pores, the whitish colours and the fairly large elliptic spores characterize this species.

Wrightoporia africana Johansen & Ryvarden.

W. avellanea (Bres.) Pouzar.

Xylobolus P. Karst. A synopsis

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Abstract Descriptions and a key to accepted species in *Xylobolus* is provided.

Introduction

The genus *Xylobolus* P. Karst. was described for a small number of species previously placed in *Stereum* characterized by numerous achantocystidia, small, ellipsoid and amyloid spores, a dense consistency and a distinct pocket rot. Over time 15 species has been described in or transferred to *Xylobolus* and many of them have seemingly a doubtful position in the genus. Thus, to obtain a stricter concept of the genus, a key and descriptions to accepted species are provided as well as a nomenclator showing the disposition of all names published in the genus.

Xylobolus P. Karst.,

Medd. Soc. Fauna Fl. Fenn. 6:11, 1881.

Basidiocarps perennial, resupinate to pileate, hard and stiff, upper surface deep brown to black, glabrous to tomentose or hirsute, hymenium smooth to undulant, beige to pale brown, hyphal system dimitic, generative hyphae with simple septa, skeletal hyphae thick-walled to solid with vertically arranged, skeletocystidia and achantocystidia present, basidia clavate, tetrasterigmatic, sometimes with small protuberances in the upper part (acanthobasidia), basidiospores ellipsoid smooth and amyloid, causes a white pocket rot.

Type species: *Thelephora frustulata* Pers.: Fr.

Remarks. The genus is related to *Stereum* but separated from it by the ellipsoid spores, numerous achantocystidia and lack of the cystidia like smooth conducting hyphae that penetrate all *Stereum* species. Further all *Xylobolus* species has a distinct pocket rot which is unknown in *Stereum*. All species in the genus has more or less the same microscopical characters except *X. gongyloides* which has longer spores than the other species in the genus.

The species are in general separated on basis on colour and macroscopical characters which are strongly influenced by environmental conditions. In large collections, like that of the Kew herbarium, there are transitions between the flabellate up to 15 cm wide specimens and the knoblike to nodulose ones, as in the type of *X. annosus* (Berk. & Br.) Boidin and it is impossible to draw a satisfactory line between the different forms. Sequencing of representative specimens will show whether we are confronted with a group of species which all are very strongly related to each other or just a single very variable species.

Key to species

1. Basidiocarps pulvinate to resupinate 2
1. Basidiocarps distinctly pileate 3

2. Basidiocarps resupinate usually deeply cracked, basidiocarps up to 5.5 μm long, acanthobasidia absent or very rare, cosmopolitan species, almost exclusively on *Quercus* **X. frustulatus**
2. Basidiocarps resupinate to knoblike, basidiospores 5-7 μm long, acanthobasidia common, South American species on different hardwoods **X. gongyloides**

3. Pileus hirsute and brown, temperate species **X. subpileatus**
3. Pileus becoming black and glabrous or almost so, tropical species 4

4. Hymenial surface first bluish, then ochraceous to grey, pileus rarely above 1 cm wide West Himalayan species **X. ahmadii**
4. Hymenial surface ochraceous becoming pale brown, pileus 2-10 cm wide, pantropical species **X. princeps**

Xylobolus ahmadii (Boidin) Boidin,

Revue Mycol., Paris 23: 341, 1958. - *Stereum ahmadii* Boidin, Biologia, Lahore 2: 217, 1956. Isotype in K!

Basidiocarp perennial, pileate, individual pilei up to 1 cm wide and long, in the type fused to more elongated compound basidiocarps, in parts imbricate, pileus black, glabrous, sulcate in narrow zones, margin sharp and wavy, hymenial surface smooth to slightly tuberculate, first distinct dark blue becoming grey with black spots and patches, in section distinctly stratified with very narrow distinct zones in variable whitish cream, ochraceous to pale brown, in the isotype counted up to 17 zones, in older parts darker than in younger ones, woody hard.

Hyphal system monomitic, hyphae 3.5-5 μm wide and with clamps, short celled, hyaline to yellowish brown (in older layers more strongly pigmented), sparsely branched, vertically arranged with transitions to achantocystidia; other hyphae tramal hyphae) 3-5 μm wide, few in number or not always found, most easily observed in very thin sections, also vertically arranged, thin to moderately thick-walled, with transitions to skeletocystidia.

Cystidia present, of two kinds;

Skeletocystidia, 18-25 x 4-6 μm , thin to moderately thick-walled, barely or not projects above the basidia and the achantocystidia.

Acanthocystidia 25-30 μm x 4-5 μm , abundant, especially so in sterile specimens.

Basidia not seen. Basidiospores 4.5-5(-5.5) x 3-3.2(-3.5) μm , shortly ellipsoid, thin-walled or occasionally slightly thick-walled, smooth, amyloid.

Substrate. On decorticated hard hardwood, both of deciduous trees such as *Quercus incana* and conifers such as *Cedrus deodara*.

Distribution. Restricted to Himalayas in Western Pakistan.

Remarks. The blue hymenial surface when fresh and actively growing is a distinct character separating from all other species in the genus. Old specimens are rather similar to species of *X. princeps* of the type frequently named *X. annosus*.

Xylobolus frustulatus (Pers.: Fr.) Boidin, Fig. 1

Rev. Mycol. (Paris) 23:341, 1958. - *Thelephora frustulata* Pers.: Fr., Syst. Mycol. 1:445, 1821. - *Thelephora frustulata* Pers., Syn. meth. Fung. p. 577, 1801.

Basidiocarp perennial, usually resupinate, rarely with a narrow black, zonate and glabrous pileus, woody textured, normally 1-2 mm thick, but in old specimens may be considerably thicker, in section distinctly stratified into several layers, soon cracked into small, angular polygons. Hymenium smooth, young layers pale ochraceous, older ones dull to deep brown.

Hyphal system monomitic, hyphae 3.5-5 µm wide and with clamps, short celled, hyaline to yellowish brown (in older layers more strongly pigmented), sparsely branched, vertically arranged with transitions to acanthocystidia; other hyphae (tramal hyphae) 3-5 µm wide, few in number or not always found, most easily observed in very thin sections, also vertically arranged, thin to moderately thick walled, with transitions to skeletocystidia.

Cystidia present, of two kinds;

Skeletocystidia 18-25 x 4-6 µm, thin to moderately thick-walled, barely or not projects above the basidia and the acanthocystidia.

Acanthocystidia 25-30 µm x 4-5 µm, abundant, especially so in sterile specimens.

Basidia 25-30 x 4-5 µm, elongate clavate, smooth or with a few basal protuberances (acanthobasidia), tetrasterigmatic.

Basidiospores 4.5-5(-5.5) x 3-3.2(-3.5) µm, shortly ellipsoid, thin-walled or occasionally slightly thick-walled, smooth, amyloid.

Substrate. Most commonly on hard, decorticate wood, usually fallen branches or trunks of *Quercus*, but also known on other types of hard woods.

Distribution. Follows *Quercus* throughout its range but is rather rare, especially in the north.

Remarks. Easily recognizable in the field due to the strongly cracked often polygonal basidiocarps.

Xylobolus gongylodes Popoff & J.E. Wright,

Mycotaxon 51:321, 1994.

Basidiocarp perennial, resupinate to irregularly pulvinate, 3-4 mm thick, usually deeply cracked when dry, first wart like, then confluent to more compound basidiocarps and then becoming nodulose with pileus black to dark brown, zonate, hymenial surface smooth to tuberculate, greyish cream to greyish blue when wet, in section with numerous very narrow zones.

Hyphal system monomitic, hyphae 3.5-5 µm wide, short-celled, simple septate, vertically arranged and with transitions to acanthocystidia.

Cystidia present, of two kinds;

Skeletocystidia 30-60 x 4-8 µm, thin to moderately thick-walled, embedded or barely projecting above the basidia and acanthocystidia.

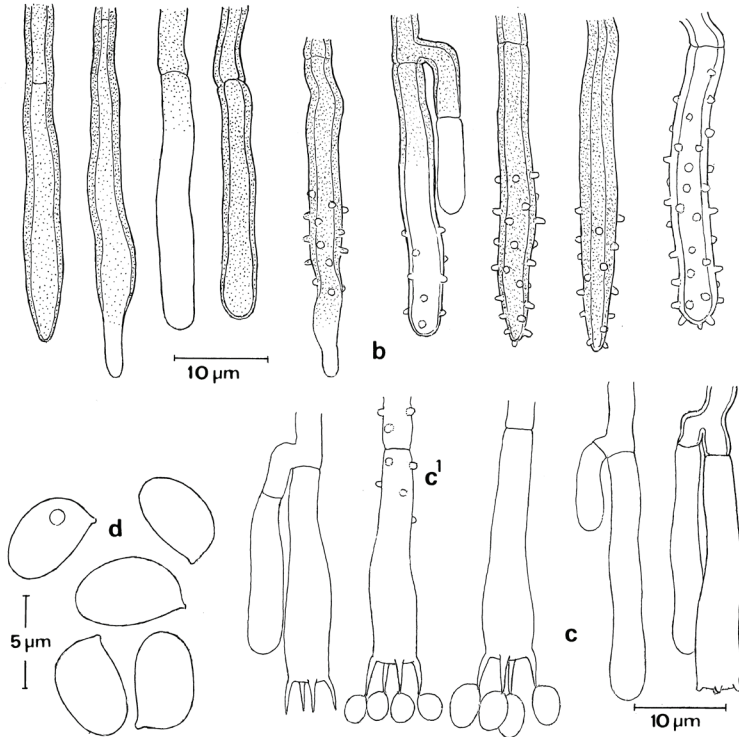
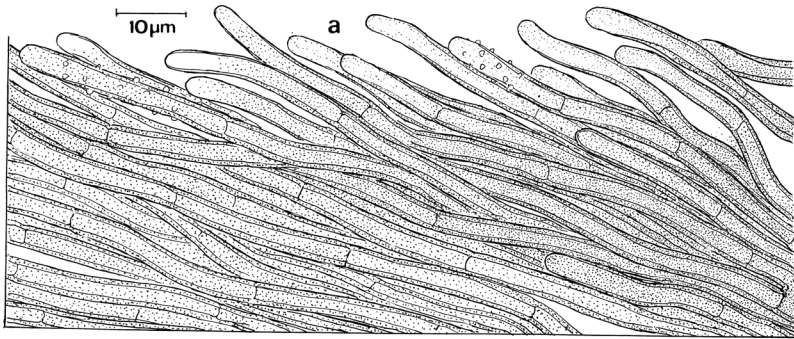


Fig. 1. *Xylobolus frustulatus*, section through the basidiocarp, showing a fertile and a sterile hymenium. Del. John Eriksson.

Acanthocystidia 17-30 μm long and 4-6 μm wide, variable in shape, abundant, especially so in sterile specimens.

Basidia 25-30 x 5-6.5 μm , elongated clavate, tetrasterigmatic and usually as acanthobasidia with numerous protuberances in the upper part.

Basidiospores 5.3-7.3 x 3.5-4.8 μm , ellipsoid to ovoid, thin-walled or occasionally slightly thick-walled, smooth, amyloid.

Substrate. On decorticate logs of hard woods.

Distribution. Known only from Paraguay and Northern Argentine.

Remarks. The species comes close to *X. frustulatus* but separated by longer spores and a more distinctly pileate shape when fully developed.

Xylobolus princeps (Jungh.) Boidin,

Revue Mycol., Paris 23: 341, 1958.

Thelephora princeps Jungh., Praem. Fl. Crypt. Javae (Batavia) p. 38, 1838. Holotype L!, isotypes in PC and K!.

Basidiocarp perennial, effused-reflexed, nodulose, triquetrous to fan shaped or semicircular, in larger specimens often lobed and incised, up to 10 cm wide and 7 cm wide, 4 mm thick, dense and hard when dry, pileus smooth to sulcate in concentric zones, black and glabrous or with some apparently ephemeral narrow and thin velvety zones, hymenial surface smooth to tuberculate, cream coloured to ochraceous or pale brown with age, in section evenly brown, but with numerous very narrow zones.

Hyphal system monomitic, hyphae 3.5-5 μm wide, short-celled, lacking clamp connections, vertically arranged and with transitions to acanthocystidia.

Cystidia present, of two kinds;

Skeletocystidia 20-50 x 4-8 μm , thin to moderately thick-walled, embedded or barely projecting above the basidia and acanthocystidia.

Acanthocystidia, 25-30 μm long and 4-5 μm wide, abundant, especially so in sterile specimens.

Basidia 25-30 x 4-5 μm , elongated clavate and tetrasterigmatic, usually smooth but occasionally with some scattered protuberances in the upper part.

Basidiospores 4.5-5.0(-5.5) x 2.5-3.0(3.2) μm , shortly ellipsoid, thin-walled or occasionally slightly thick-walled, smooth, amyloid.

Substrate. On decorticate logs of hard woods of many kinds.

Distribution. Pantropical, the type came from Java, but specimens have been examined from Taiwan, Kenya, Uganda, Brazil and Costa Rica.

Remarks. The species is recognized by the often wide black pileus, more or less glabrous. Specimens with an almost a triquetrous basidiocarps with pilei rarely above 2 cm wide, has previously been called *X. annosus*, based on specimens from Sri Lanka. However, as seen in the Kew herbarium, there are transitions from effused reflexed and nodulose specimens to these being distinctly spatulate or fan shaped. Thus, a wide species concept is accepted here.

Xylobolus subpileatus (Berk. & M. A. Curtis.) Boidin,

Rev. Mycol. 23:341, 1958. - *Stereum subpileatum* Berk. & W. A. Curtis, Hooker J. Botany 1:238, 1849. K!

Basidiocarp perennial, effused-reflexed to distinctly pileate and dimidiate to slightly pendant and often attached by a central point, to 7.0 cm wide and long, coriaceous when fresh, dense and hard when dry, pileus velvety to tomentose or even hispid in various shades of brown, sometimes with violet tints, often furrowed and sulcate, becoming glabrous in zones when older, exposing a black cuticle, hymenium initially smooth then slightly tuberculate, sometimes concentrically ridged, grey to orange becoming light brown with age, fertile parts often stratified, context pale ochraceous, with a black cuticle below the pileus tomentum Hyphal system monomitic, hyphae 3.5-5 µm wide, short-celled, lacking clamp connections, vertically arranged and with transitions to acanthocystidia.

Cystidia present, of two kinds;

Skeletocystidia 20-50 x 4-8 µm, thin to moderately thick-walled, embedded or barely projecting above the basidia and acanthocystidia.

Acanthocystidia, 25-30 µm long and 4-5 µm wide, abundant, especially so in sterile specimens.

Basidia 25-30 x 4-5 µm, elongated clavate and tetrasterigmatic.

Basidiospores 4.5-5.0(-5.5) x 2.5-3.0(3.2) µm, shortly ellipsoid, thin-walled or occasionally slightly thick-walled, smooth, amyloid.

Substrate. Usually on decorticate wood of *Quercus* spp., but also known from other hardwoods.

Distribution. Seemingly follows the oak almost throughout the range of the genus, except in northern Europe.

Remarks. Recognized by the pileate basidiocarps with an upper brown, often zoned tomentum. Microscopically, the numerous acanthocystidia will immediately separate it from similarly coloured species of *Stereum*.

Nomenclator

The accepted species are written in boldface

Xylobolus ahmadii (Boidin) Boidin.

Xylobolus annosus (Berk. & Broome) Boidin 1958. = *Xylobolus princeps* (Jungh.) Boidin.

Xylobolus apricans (Bourdot) Sheng H. Wu, Boidin & C.Y. Chien = *Aleurodiscus apricans* Bourdot.

Xylobolus areolatus (Chaillat ex Fr.) P. Karst. = *Amylostereum areolatum* (Pers.) Boidin.

Xylobolus frustulatus (Pers.) Boidin.

Xylobolus frustulosus (Fr.) P. Karst. = *Xylobolus frustulatus* (Pers) P. Karst.

Xylobolus gongyloides Popoff & J.E. Wright.

Xylobolus hiugensis (Imazeki) Imazeki & Hongo. = *Xylobolus subpileatus* (Berk. & M.A. Curtis) Boidin.

Xylobolus illudens (Berk.) Boidin. = *Stereum illudens* Berk.

Xylobolus princeps (Jungh.) Boidin 1958.

Xylobolus repandus (Fr.) P. Karst. = *Stereum repandum* (Fr.) Fr. 1838, type is not

found and it is a species of unknown disposition.

Xylobolus spectabilis (Klotzsch) Boidin. = *Stereum versicolor* (Sw.) Fr.

Xylobolus subpileatus (Berk. & M.A. Curtis) Boidin.

Xylobolus thoenii (Boidin, Lanq. & Gilles) Tura, Zmitr., Wasser & Spirin

= *Aleurodiscus thoenii* (Boidin, Lanq. & Gilles) Núñez & Ryvarden

Xylobolus tumulosus P. Karst. = *Peniophora cinerea* (Pers.) Cooke.

References

Imazeki, R. 1939: Observations on Japanese Fungi III, J. Jap. Bot. 15:578-588.

Popoff, O. & Wright, J. E. 1994: Two new corticioid fungi (Aphylophorales) from NE Argentina and Paraguay, Mycotaxon 61:317-324.

The genus *Irpex* - a synopsis

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Abstract

180 names described in *Irpex* have been examined and their taxonomic status evaluated mostly based on type studies. Currently the genus is restricted to two species while the other species have been transferred to other genera or treated as taxonomic synonyms. The type species, i.e. *I. lacteus* is described and illustrated.

Introduction

Irpex Fr (1828) was originally used for all sorts for wood inhabiting, mostly pileate fungi with a hydroid hymenophore. However, it became evident rather soon that the genus included many species with different evolutionary back ground, and over time all most all species were transferred to other genera. Today the genus is either treated as monotypic or with a few more species.

In the following there is a list of all *Irpex* names and their current taxonomic affiliation as far as it is known. Some names have been left without further designation as their types have either been lost or are in a condition that made further identification impossible.

Irpex Fr.,

Elench. Fung. 1:142, 1828, - Syst. Orb. Veg. p. 81, 1825.

Basidiocarps annual, sessile, effused-reflexed, or resupinate, hymenophore becoming strongly hydroid; pileus surface tomentose to hirsute, white to pale buff; hyphal system dimitic; generative hyphae simple-septate; cystidia thick-walled, encrusted; basidiospores cylindrical, negative in Melzer's reagent; causing a white rot of dead hardwoods, more rarely in conifers.

Type species: *Hydnum lacteum* Fr.:Fr.

Remarks. The genus is closely related to the poroid genus *Junghuhnia* and the hydroid *Steccherinum* and is in principle separated only by the simple septate generative hyphae. Previously the genus was used to accommodate all types of hydroid basidiomycetes with an effused-reflexed basidiocarp. For a survey of species previously placed in the genus, see below together with a description of the type species.

Key to species

1. Spores cylindrical 2-3 μ m wide, cosmopolitan *I. lacteus*
1. Spores elliptic, spores 3.5-4 μ m wide, known only from Korea *I. hydroides*
-

Irpex hydroides Lim & Jung,

Mycologia 95:695, 2003.

Basidiocarps annual, usually effused reflexed or resupinate at first, occasionally sessile, confluent and effused, up to 25 cm along the substrate, pilei often laterally fused, up to 5 mm wide, upper surface white to whitish cream coloured, densely tomentose to hirsute, azonate to faintly zonate, smooth or shallowly sulcate, margin concolorous; lower surface white to cream becoming ochraceous, hydroid, teeth up to 4 mm long, mostly flattened, occasionally fused at the base and often denticulate to incised; context white to pale tan, soft to fibrous, azonate, up to 2 mm thick; tube layer concolorous and continuous with the context, up to 3 mm thick.

Hyphal system dimitic; contextual generative hyphae thin- to thick walled, with frequent branching, simple septa, 2-5 μm in diam; contextual skeletal hyphae hyaline, thick walled, rarely with simple septa and rare branching, 4-6 μm in diam; tramal hyphae similar.

Cystidia 50-110 x 5-10 μm , conspicuous, abundant, thick walled, heavily encrusted apically projecting up to 50 μm , originating in the subhymenium from tramal skeletal hyphae.

Basidia 25-30 x 6-7 μm , clavate, tetrasterigmatic, developing in intricately branched candelabra simple septate at the base.

Basidiospores 5.5-6.5 x 3.5-4 μm , elliptic.

Substrata. Dead hard wood, known only from *Quercus* sp.

Distribution. Known only from the type locality in Taebak Mountains in Korea.

Remarks. The species has probably a wider distribution than indicated above, and a re-examination of the numerous collections of *I. lacteus* in Asian fungaria may well reveal more specimens of *I. hydroides*.

Irpex lacteus (Fr.:Fr.) Fr.,

Elench. Fung., p. 145, 1828. - *Sistotrema lacteum* Fr., Obs. Mycol. 2:226, 1818. - *Hydnum lacteum* Fr.:Fr., Syst. Mycol. 1:412, 1821. For numerous other synonyms, see below.

Basidiocarps annual, usually effused-reflexed or resupinate at first, occasionally sessile, pilei usually imbricate, dimidiate or laterally fused, up to 1 x 7 x .5 cm; upper surface white to cream colored or pale buff, densely tomentose to hirsute, azonate to faintly zonate, smooth or shallowly sulcate, margin concolorous; pore surface white to cream, the pores angular, 2-3 per mm near the margin with thin deeply split dissepiments so soon there is an irpiciform to hydroid hymenophore; context white to pale tan, soft-fibrous, azonate, up to 2 mm thick; tube layer concolorous and continuous with the context, up to 3 mm thick.

Hyphal system dimitic; contextual generative hyphae thin- to firm-walled, with frequent branching, simple-septate, 2-4 μm in diam; contextual skeletal hyphae hyaline, thick-walled, occasionally simple-septate, with rare branching, 2.5-6 μm in diam; tramal hyphae similar.

Cystidia conspicuous, abundant, thick-walled, heavily encrusted apically, 50-110 x 5-10 μm , projecting up to 40 μm , originating in the subhymenium from tramal skeletal hyphae.

Basidia clavate, 4-sterigmate, developing in intricately branched candelabra, 20-30 x 4-6 μm , simple-septate at the base.

Basidiospores 5-7 x 2-3 μm oblong to cylindrical, straight to slightly curved.
Substrata. Dead wood of numerous hardwood genera, frequently on dead branches or on trunks of dead standing trees.
Distribution. Cosmopolitan species except the boreal zones.
Remarks. The strongly hydroid hymenophore, conspicuous encrusted cystidia, and simple-septate hyphae are the diagnostic characters for *I. lacteus*.

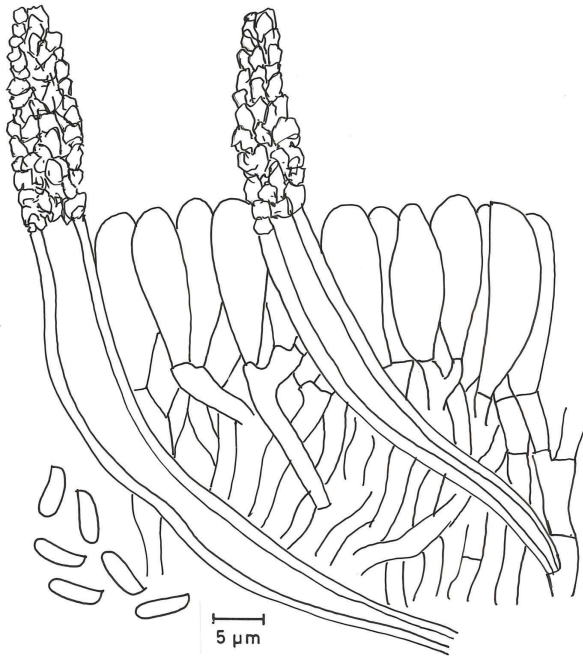


Fig. 1 *Irpex lacteus*, part of hymenium with cystidia and basidiospores, Coll. Ryvarden 13305 (from Norway).

Nomenclator

List of excluded species

- africanus Irpex van der Byl, *Annale Univ. Stellenbosch* 12:5, 1934.
= Irregular *Trametes* species? See Maas Geest. 1974:457.
- alaskensis Irpex (Lindsey & Gilb.) Kotir. & Saaren., *Polish Bot. J.* 47: 104, 2002.
= *Steccherinum alaskense* Lindsey & Gilb. 1980.
- albofuscus Irpex (Pat.) Sacc. & Trott., *Syll. Fung.* 21:376, 1912.
= *Coriolus albofuscus* Pat., *Bull. Soc. mycol. Fr.* 23:81, 1907.
= *Ganoderma chalconum* (Cooke) Steyart, in an irregular state.
- alboluteus Irpex Rick, *Iheringia (Bot.)* 5:189, 1959.
= Type not found, probably lost..
- ambiguus Irpex Peck, *Rep. N.Y. St. Mus. nat. Hist.* 40:55, 1887.
= *Hyphodontia spathulata* (Schrad.:Fr.) Eriksson, teste Gilbertson 1963:660.
- anomalus Irpex Wettst., *Schr. Kais. Akad. Wiss. math. naturw. Kl.* 94:62, 1887.
= *Sistotrema confluens* Pers. ex Fr. (see Maas Geesteranus, 1959:141).
- arborescens Irpex Rick, *Iheringia (Bot.)* No.5:191, 1959.
= *Peniophorella rude* (Bres.) K.-H. Larsson.
- archeri Irpex Berk., *Hook. fil., Fl. Tasm.* 2:257, 1860.
= *Schizopora archeri* (Berk.) Nakasone.
- aridus Irpex (Svrček) Kotir. & Saaren., *Polish Bot. J.* 47: 104, 2002.
= *Steccherinum aridum* Svrček.
- atropurpureus Irpex Speg., *An. Soc. Cient. argent.* 12:27, 1881.
= *Punctularia atropurpurascens* (Berk. & Broome) Petch.
- basibadius Irpex (Banker) Kotir. & Saaren., *Polish Bot. J.* 47: 104, 2002.
= *Steccherinum basibadium* Banker.
- bresadolae, Irpex Schulzer, *Hedwigia* 24:146, 1885.
= *Irpex lacteus* (Fr.) Fr.
- brevidens Irpex Pat., *Bull. Herb. Boissier* 3:55, 1895.
= *Hyphodontia brevidens* (Pat.) Ryvarden.
- brevis Irpex Berk., *Fl. Novae Zel.* 2 (2):181, 1855.
= *Antrodiella zonata* (Berk.) Ryvarden.

- caespitosus Irpex Berk., J. Linn. Soc. 10:326, 1868.
= Eaten by insects, totally destroyed.
- calcareus Irpex (Cooke & Masee) Wakef., Bull. bot. Gdns Kew: 367, 1915.
= *Hydnum calcareus* Cooke & Masee, Grevillea 21:38, 1892.
- candidus Irpex (Ehrenb.) Weinm., Hym. Gasteromyc.: 376, 1836.
= *Sistotrema candidus* Ehrenb., Sylv. mycol. berol.: 19:30, 1818.
- cansecens, Irpex Fr., Elench. Fung. 1: 145, 1828.
= *Irpex lacteus* (Fr.) Fr.
- carneoalbus Irpex Fr., Epicr. Syst. Mycol.: 521, 1838.
= Type not in the Fries collection in Uppsala, apparently lost.
- carneus Irpex (Fr. ex Fr.) Fr., Elench. Fung. 1: 148, 1828.
= *Sistotrema carneum* Fr., Obs. mycol. 2: 268, 1818.
= *Phlebia radiata* Fr.
- cartilagineus Irpex Speg., An. Soc. Cient. Argent. 10: 130, 1880.
= *Fuscocerrena portoricensis* (Fr.) Ryvarden,
- castaneus Irpex (Lloyd) Lloyd, Mycol. Writ. 6: 1060, 1921.
= *Merulius castaneus* Lloyd, Lloyd Mycol. Writ. 4: 555, 1916.
= *Phlebiopsis castaneus* (Lloyd) Miettinen & Spirin.
- cerasi Irpex (Pers.: Fr.) Fr., Elench. Fung. 1: 146, 1828.
= *Odontia cerasi* Pers., Obs. mycol. 2: 16, 1799.
= *Basidoradulum radula* (Fr.) Nobles.
- cervinus Irpex Rick., Egatea 17: 211, 1932.
= *Cystidiodontia laminifera* (Berk. & M.A. Curtis) Hjortst
- cinerascens Irpex (Schw.) Schw., Trans. Am. phil. Soc., N.S. 4): 164, 1832.
= *Boletus cinerascens* Schw., Schr. naturf. Ges. Leipzig 1:99, 1822.
= *Irpex lacteus* (Fr.) Fr.
- cingulatus Irpex Lloyd, Lloyd Mycol. Writ. 5: 795, 1918.
= *Antrodiella zonata* (Berk.) Ryvarden.
- cinamomeus Irpex Fr., Epicr. Syst. mycol. p.524, 1838.
= *Hydnochaete olivacea* (Schw.:Fr.) Banker.
- citrinus Irpex Rabenh., Hedwigia 17: 113, 1878.
= *Flavodon flavus* (Kl.) Ryvarden.

- citrinus Irpex Bres., Bull. Soc. r. Bot. Belg. 38:156, 1899.
 = *Nomen illegit. non Rabenh.* 1878.
- colliculosus Irpex Berk. & Br., J. Linn. Soc. 14:61, 1873.
 = *Pirex subvinosa* (Berk. & Broome) Hjortst.
- concrescens Irpex Lloyd, Lloyd Mycol. Writ. 4 (Lett. 60):9, 1915.
 = *Oxyporus latemarginatus* (Durieu & Mont.) Donk.
- confluens Irpex (Pers. ex Fr.) Kummer, Führer Pilzk.:49, 1871.
 = *Sistoterema confluens* Pers.: Fr.
- conjunctus Irpex Britz., Bot. Zbl. 71: 88, 1897.
 = Type not located, probably lost,
- consors Irpex Berk., J. Linn. Soc. 16: 51, 1877.
 = *Antrodiella zonata* (Berk.) Ryvarden.
- coriaceus Irpex Berk. & Rav., Grevillea 1:101, 1873.
 = *Fuscoerrena portoricensis* (Fr.) Ryvarden,
- corticoides Irpex Rick, Iheringia 5: 187, 1959.
 = *Hyphodontia corticoidea* (Rick) Baltazar & Rajchenb.
- crassius Irpex Lloyd, Lloyd Mycol. Writ. 6: 909, 1920.
 = *Spongipellis pachydon* (Pers.) Kotl. & Pouzar.
- crassus Irpex Berk. & Curt., Hook. J. Bot. 1: 236, 1849.
 = *Spongipellis pachydon* (Pers.) Kotl. & Pouzar.
- crispatus Irpex Berk., Grevillea 19:109, 1891.
 = The type is sterile; its identity is unknown.
- crispus Irpex (Schaff. ex Fr.) Fr., Epicr. Syst. mycol.:521, 1838.
 = *Hydnum crispum* Schaeff., Fung. Icon. 4: 97, 1774.
 = *Nomen illegit., non Scop.* 1772.
 = *Irpex crispus* Fr., Syst mycol. p. 521, 1838.
 Fries made a *nomen novum* without being aware of it.
- cubensis Irpex Berk. & M. A. Curtis, J. Linn. Soc. 10: 32, 1868.
 = *Radulodon* sp? The type is sterile.
- daedaleaeformis Irpex Vel., Ceske houby p. 743,1922.
 = *Schizopora paradoxa* (Fr.) Donk.

- decolorans Irpex Cooke, Grevillea 19: 109, 1891.
= *Radulodon* sp.? fide Hjortstam in Kew.
- decumbens Irpex Rick, Egatea 17: 211, 1932.
= *Schizopora paradoxa* (Fr.) Donk.
- decurrens Irpex Berk., Grevillea 19: 109, 1891.
= *Antrodiella zonata* (Berk.) Ryvar den.
- deformis Irpex Fr., Elench. Fung. 1: 147, 1828.
= *Schizopora paradoxa* (Fr.) Donk.
- depauperatus Irpex Berk. & Broome, J. Linn. Soc. 14: 61, 1873.
= *Odonticium depauperatum* (Berk. & Broome) Nakasone.
- depauperatus Irpex Masse, Kew Bull. 1901, 157, 1901.
= nomen illegit., non Berk. & Broome 1873.
- destruens Irpex Petch, Ann. R. bot. Gdns. Peradeniya 4: 300. 1909.
= The type is sterile and its identity is unknown. See Maas Geest. 1974:473.
- diabolicus Irpex (Speg.) Bres., Boln Acad. nac. Cienc. Córdoba 23: 428, 1919.
= *Daedalea diabolica* Speg. 1889.
= *Irpex lacteus* (Fr.) Fr.
- discolor Irpex Berk. & Curtis, Grevillea 1: 145, 1873.
= *Gloeodontia discolor* (Berk. & M. A. Curtis) Boidin.
- dregeanus Irpex (Berk.) Talbot, Bothalia 6: 344. 1954.
= *Corticium dregeanus* Berk., Lond. J. Bot. 5: 3.1846
= *Australohydnum dregeanum* (Berk.) Hjortst. & Ryvar den.
- durescens Irpex (Cooke.) Cooke, Grevillea 13: 4, 1884.
= *Hydnum durescens* Cooke, Grevillea 9: 98, 1881.
= *Daedalea stereoides* (Fr.) Ryvar den.
- effusus Irpex P. Henn., Hedwigia 36: 198. 1897.
= *Hyphodontia spathulata* (Schrad.) Parmasto.
- elongatus Irpex (Berk.) Lloyd, Lloyd Mycol. Writ. 7: 1231, 1923.
= *Trichaptum biforme* (Fr. in Kl.) Ryvar den.
- epiphyllus Irpex Schw., Trans. Am. phil. Soc., N.S. 4: 164, 1832.
= *Trametes cervina* (Schw.) Bresadola.

- epitephrus Irpex Cleland, Trans. & Proc. Roy. Soc. S. Australia 59: 219, 1936.
= The type is lost, and there is no information about its identity.
- ethiopicus Irpex (Maas Geest.) Kotir. & Saaren., *Polish Bot. J.* 47: 105, 2002.
= *Steccherinum ethiopicum* Maas Geest. 1974.
- farinaceus Irpex Fr., *Linnaea* 5: 523, 1830.
= *Fuscocerrena portoricensis* (Fr.) Ryvar den 1982.
- ferrirae Irpex Bres. et Torrend, M. Ferreira / IV (19)09”(Z).
= *Hydnum ferrirae* Bres. & Torrend, *Fungi sel. exs.*, ser.14, No. 35. 1910.
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