RMR Boll. AMER, numero speciale (fuori serie), Anno XXXVII, 2021: 3-33

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FUNGUS FLORA OF THE DOMINICAN REPUBLIC. VII. SOME UNREPORTED POLYPOROID, STEREOID AND CORTICIOID FUNGI

Abstract

Twenty polyporoid (Bresadolia craterella, Ceriporia alachuana, C. microspora, Fomitiporia maxonii, Lindtneria trachyspora, Nigroporus vinosus, Oxyporus lacerus, Perenniporia subannosa, Perenniporiella neofulva, Phaeolus schweinitzii, Polyporus leprieurii, Postia tephroleuca, Pseudofavolus miquelii, Pseudowrightoporia dominicana, Ranadivia modesta, Schizopora flavipora, Steccherinum undigerum, Trametes pavonia, T. villosa, Truncospora tephropora), ten stereoid and corticioid (Cymatoderma caperatum, Podoscypha nitidula, P. thozetii, Steccherinum ciliolatum, Stereum hirsutum, S. striatum, Thelephora dentosa, T. dominicana, T. palmata, T. terrestris) neotropical fungi all collected in the Dominican Republic are here represented and annotated.

Riassunto

Vengono qui rappresentate con brevi note a commento 20 specie poliporoidi (Bresadolia craterella, Ceriporia alachuana, C. microspora, Fomitiporia maxonii, Lindtneria trachyspora, Nigroporus vinosus, Oxyporus lacerus, Perenniporia subannosa, Perenniporiella neofulva, Phaeolus schweinitzii, Polyporus leprieurii, Postia tephroleuca, Pseudofavolus miquelii, Pseudowrightoporia dominicana, Ranadivia modesta, Schizopora flavipora, Steccherinum undigerum, Trametes pavonia, T. villosa, Truncospora tephropora), 10 specie stereoidi e corticioidi (Cymatoderma caperatum, Podoscypha nitidula, P. thozetii, Steccherinum ciliolatum, Stereum hirsutum, S. striatum, Thelephora dentosa, T. dominicana, T. palmata, T. terrestris) di funghi neotropicali raccolti in Repubblica Dominicana.

Key words: Basidiomycota, Aphyllophorales, sub-tropical zone, Caribbean.

Introduction

Following our previous contributions to the knowledge of fungi of Dominican Republic (ANGELINI & LOSI, 2013a, 2013b, 2014, 2015, 2016 and 2018), here are represented other 30 records not previously annotated. The collecting and research areas in the Dominican Republic have been described in detail in ours previous works (ANGELINI & LOSI, 2013a, 2013b, 2014) and on the website "*Neotropical fungi - Hongos de la República Dominicana*" (*www.neotropicalfungi.com*).

TAXONOMY

POLYPOROID FUNGI

Hymenium poroid, rarely lamellar (and hard); **basidiomata** often tough and coriaceous, resupinate to pileate, sessile or stipitate (JÜLICH, 1989).

Family Hymenochaetaceae Imazeki & Toki 1948

(as defined in ANGELINI & LOSI, 2013a)

Genus Fomitiporia Murrill

Fomitiporia is above all characterized by globose to subglobose, thick-walled, cyanophilous and dextrinoid **basidiospores**. **Hyphal system** dimitic (pseudodimitic); **setae** and **cystidioles** variably present. **Basidiomata** resupinate or pileate (CAMPOS-SANTANA *et al.*, 2014).

Fomitiporia maxonii Murrill [as 'maxoni']

Basidiome resupinate, pulvinate, inseparable, hard woody. Margin adnate, irregular, white, sulphurous yellow, bright yellowish, yellowish brown to yellowish orange; pore surface greyish brown, chocolate brown when dried, the pores circular, 7-9 per mm, the dissepiments entire, thin; tubes concolorous, up to 2 mm deep; context thin, yellowish brown. **Hyphal system** dimitic. **Hymenial setae** absent. **Basidiospores** subglobose, broadly ovoid to globose, hyaline, thick-walled, dextrinoid, 5.6-6.6 (-7.2) µm in diam.

Distribution: probably widespread in the neotropics (DECOCK et al., 2007).

Material studied: on fallen trunk in a wood long the mountain river with deciduous trees, 21 Dec. 2018 - Jassica (P.to Plata) DR. Exiccatum: JBSD131257 (Fig. 1)

Remarks

F. maxonii shares with *F. langloisii* Murrill and *F. neotropica* Campos-Santana, Amalfi, R.M. Silveira, Robledo et Decock the basidiospores size; *F. langloisii* differs by a more cushionshaped basidiome, a lighter pore-surface color and slightly larger pores (DECOCK *et al.*, 2007); the distinction among asetose specimens of *F. neotropica* and *F. maxonii* is not unequivocal by using classical morphological characters (CAMPOS-SANTANA, 2014). Moreover in *F. punctata* complex, *F. punctata* (P. Karst.) Murrill and *F. dryophila* Murrill have distinctly larger basidiospores (DECOCK *et al.*, 2007). On the other hand according to VLASÁK *et al.* (2011), *F. maxonii* can be positively determined only after DNA sequencing.

Family *Fomitopsidaceae* Jülich 1982

(as defined in ANGELINI & LOSI, 2015)

Genus Phaeolus (Pat.) Pat.

Phaeolus is characterized by the stipitate and fleshy **basidiomes**, the simple septate **hyphae** and the brown **rot**.

Phaeolus schweinitzii (Fr.) Pat.

Basidiomata pileate, stipitate, with central or lateral, short and stout stipe to sessile, single or imbricate, soft and sappy when fresh, light-weight and brittle when dry. Upper surface orange at first, becoming yellowish brown to reddish brown, faintly zonate or with lilac, violet, chestnut zones, hirsute to tomentose; margin regular to lobed. Pore surface yellowish green to yellowish brown, pores angular, 1-3 per mm, becoming elongated to labyrinthine, decurrent on the stipe. **Hyphal system** monomitic; hyphae with simple septa, hyaline, yellowish to brown, thin- to slightly thick-walled; hyphal ends in the dissepiments often more or less encrusted; **gloeoplerous** hyphae with grainy contents present. **Gloeocystidia** scattered to frequent, projecting, cylindrical, hyaline, thin-walled, up to 110 μ m long and 13 μ m wide, as a rule naked but sometimes apically surrounded by conspicuous masses of reddish brown resinous matter. **Basidiospores** ellipsoid, hyaline, mostly uniguttulate or anyway with oily contentents, thin-walled, smooth, 6.4-9 × 4-5.5 μ m, IKI-.

Distribution: widespread, but rare in the tropical zones (RYVARDEN, 2016).

Material studied: on stumps and roots in a mountain forest with pine trees (*Pinus occidentalis* Sw.), 19 Nov. 2020 - Jarabacoa (La Vega) DR. Exiccatum: ANGE1446; on stump in a mountain forest with pine trees (*Pinus caribaea* Morelet), 22 Feb. 2020 - Pico Isabel de Torres (P.to Plata) DR. Exiccatum: ANGE1184 (**Fig. 2**).



Fig. 1. Fomitiporia maxonii

Photo by Claudio Angelini



Fig. 2. Phaeolus schweinitzii

Photo by Claudio Angelini

Genus Postia Fr.

Basidiomata annual, effuse-reflexed to pileate. **Pileal surface** white or greyish to pale greyish brown; **pore surface** white. **Hyphal system** monomitic, **hyphae** with clamp connections, IKI-, CB-. **Basidiospores** allantoid to cylindrical, hyaline, thin-walled, smooth, IKI-, CB- (SHEN *et al.*, 2019).

Postia tephroleuca (Fr.) Jülich

= Polyporus lacteus Fr.

Basidiomata pileate, single, sessile, fleshy and watery when fresh, rather brittle on drying. Upper surface white to pale cream or very pale greyish, finely velutinous; margin regular to lobed. **Pore surface** white, pores round, 4-8 per mm. **Hyphal system** monomitic, **hyphae** with clamps, hyaline, thin- to mostly thick-walled, tightly packed and somewhat gelatinized in the trama. **Basidiospores** slightly allantoid, $3.5-4.5 \times 0.7-1 \mu m$.

Distribution: in the neotropics reported from Brazil (Brazilian Flora 2020 project) and Central America (CARRANZA & RYVARDEN, 1998).

Material studied: on fallen trunk in a mountain forest with deciduous trees, 24 Jan. 2020 - Pico Isabel de Torres (P.to Plata) DR. Exiccatum: ANGE1196 (Fig. 3).

Genus Ranadivia Zmitr.

Basidiomata of corioloid to fibroporioid habitus; **hymenophore** as a single tube layer with pores small-sized, often sinuose; pinkish tint in all the tissues. **Hyphal system** dimitic with sympodially branched skeletal hyphae; **generative hyphae** clamped. **Basidiospores** cylindrical, slightly curved, thin-walled, IKI-, CB- (ZMITROVICH, 2018).

Ranadivia modesta (Kunze ex Fr.) Zmitr.

Basidiomata pileate, thin, leathery, more or less flexible, single, imbricate or fused laterally, semicircular to flabelliform with contracted and somewhat umbonate base. Upper surface pink to isabelline with lilac shades, brown to pinkish brown towards the base, finely zonate, appressed fibrillose, radially wrinkled with irregular outgrowths at the base; margin white, slightly incised, lobed to entire. **Pore surface** whitish with lilac shades, **pores** round to angular, 6-8 per mm. **Hyphal system** trimitic-like, generative hyphae with clamps. **Basidiospores** cylindrical-ellipsoid, 4-6 × 2.4-2.8 µm.

Distribution: common in tropical America (OVERHOLTS, 1953).

Material studied: on fallen trunk in a man-made wood with deciduous trees, 13 Mar. 2020 - Sosua (P.to Plata) DR. Exiccatum: ANGE1312 (Fig. 4).

Remarks

Basidiospores range seems highly variable: cylindrical, 4.5-6 × 1.5-2 (-2.5) μm in Gilbertson & Ryvarden (1987); broad-ellipsoid, 6-7.5 × 3.5-4 μm in Fidalgo & Fidalgo (1968); 7-9 × 4 μm in Carranza & Ryvarden (1998).

Family Hericiaceae Donk 1964

Hymenophore smooth, odontoid or poroid; **hyphal system** monomitic or dimitic, clamps present; **Basidiospores** predominantly ornamented, amyloid; white **rot**, where noted (BEGEROW *et al.* 2018).



Fig. 3. Postia tephroleuca

Photo by Claudio Angelini



Fig. 4. Ranadivia modesta

Photo by Claudio Angelini

Genus Pseudowrightoporia Y.C. Dai, Jia J. Chen & B.K. Cui

Pseudowrightoporia is characterized by soft corky to corky **basidiocarps** when fresh, shining pores, dimitic **hyphal structure**, ellipsoid to subglobose, finely asperulate and amyloid **basidiospores**, and a subtropical to tropical **distribution** (CHEN *et al.*, 2016).

Pseudowrightoporia dominicana Angelini, Losi & Vizzini

Pseudowrightoporia dominicana is mainly characterized by pileate **basidiome** with a bright pinkish context, very small **basidiospores** and a dimitic-trimitic **hyphal system** (VIZZINI *et al.,* 2018).

Distribution: known only from the type locality in Dominican Republic.

Material studied: on live trunk of a deciduous tree, in a mixed mountain forest with several broadleaved species and pines (*Pinus occidentalis*), 17 Dec. 2016 - Jarabacoa (La Vega) DR. Exiccatum: JBSD127410 (**Fig. 5**).

Family Irpicaceae Spirin & Zmitr. 2003

Corticioid species or **polypores**; **hyphal system** monomitic more rarely dimitic; **hyphae** mostly simple-septate; **cystidia** often absent; **basidiospores** thin-walled, smooth, hyaline; producing a white-**rot**, except for *Leptoporus* (Justo *et al.*, 2017).



Fig. 5. Pseudowrightoporia dominicana

Photo by Claudio Angelini

Genus *Ceriporia* Donk (as defined in Angelini & Losi, 2015)

Ceriporia alachuana (Murrill) Hallenb.

Basidiomata resupinate, thin, rather soft, brittle when dry. Pore surface white to yellowish, drying buff, margin cottony, white; pores angular, (2-) 4-8 per mm, sometimes elongated, at first cupulate; tube layer concolorous, context very thin, white. Hyphal system monomitic,

hyphae simple-septate, thin- to slightly thick-walled, hyaline. Rare, fusoid-subulate **cystidioles** present. **Basidiospores** cylindrical ellipsoid, hyaline, thin-walled, 3.2-4.4 × 1.8-2.2 (-2.4) μm.

Distribution: in the Neotropics reported from Panama, Costa Rica, Puerto Rico, Dominican Republic, Perù, Brazil.

Material studied: on fallen trunk in a man-made wood with deciduous trees, 25 Feb. 2020 - Sosua (P.to Plata) DR. Exiccatum: ANGE1257 (Fig. 6).



Fig. 6. Ceriporia alachuana

Photo by Claudio Angelini

Ceriporia microspora Lindblad & Ryvarden

Basidiomata resupinate, thin, rather soft, brittle when dry. **Pore surface** white, **pores** thinwalled, circular, at first cupulate, 4-8 per mm with entire dissepiments that often become lacerate, **tube** layer and subiculum concolorous; margin white, cottony. **Hyphal system** monomitic, **hyphae** simple-septate, thin- to slightly thick-walled, hyaline, 2.4-8 μ m in diam, sometimes inflated. **Basidiospores** cylindrical ellipsoid, 3.2-3.6 × 1.8-2 μ m.

Distribution: frequently reported from Costa Rica and Venezuela.

Material studied: on fallen trunk in a man-made wood with deciduous trees, 25 Feb. 2020 - Sosua (P.to Plata) DR. Exiccatum: ANGE1258 (Fig. 7).

Family Oxyporaceae Zmitr. & Malysheva 2014

Basidiomes with tubular hymenophore; **hyphal system** pseudodimitic, **hyphae** simpleseptate; **leptocystidia** apically encrusted; **basidiospores** ovoid to subglobose, inamyloid. Causes a white **rot**.

Genus Oxyporus (Bourdot & Galzin) Donk

Description as for the family Oxyporaceae (see above).



Fig. 7. Ceriporia microspora

Photo by Claudio Angelini

Oxyporus lacerus Ryvarden

Basidiomata resupinate, rather soft; **pore surface** white; **pores** 1-4 per mm, circular or angular, usually split, lacerate-denticulate, strongly irregular or labyrinthine; **context** thin and white. **Hyphal system** monomitic; **hyphae** simple-septate, thin- to thick-walled, hyaline. **Cystidia** frequent, cylindrical clavate, thin- to slightly thick-walled, with an apical crown of coarse crystals, up to 20 µm long and 4-5 µm wide. **Basidiospores** ellipsoid, thin-walled, hyaline, 4-4.4 × 2.4-2.6 µm.

Distribution: outside Dominican Republic it seems only reported from the type locality in Belize (RYVARDEN, 2016).

Material studied: on fallen trunk in a man-made wood with deciduous trees, 2 Dec. 2018 - Sosua (P.to Plata) DR. Exiccatum: ANGE1135 (Fig. 8).

Remarks

Superficially it looks like *O. pellicula* (Jungh.) Ryvarden (Ryvarden, 2007) however the latter species has larger basidiospores and slender and heavily encrusted cystidia (Ryvarden & JOHANSEN, 1980). *Oxyporus hexaporoides* Ryvarden & Iturr. has similar basidiospores but angular to hexagonal pores (Ryvarden & IturrIAGA, 2011).

Family *Polyporaceae* Fr. ex Corda 1839 (as defined in Angelini & Losi, 2014)

Genus Bresadolia Speg.

Bresadolia is characterized by centrally to eccentrically **stipitate**, fleshy and sometimes watery when fresh, papery and brittle upon drying. **Hyphal system** dimitic with **generative** and **skeleto**-



Fig. 8. Oxyporus lacerus

Photo by Claudio Angelini

binding hyphae; generative hyphae clamped, inflated, sometimes difficult to differentiated from inflated skeleto-binding hyphae; the former are dominant in the trama which is almost monomitic. **Cystidia** absent. **Basidia** clavate, four sterigmate. **Basidiospores** cylindrical to sub-ellipsoid, hyaline to slightly yellowish, thin-walled, smooth, IKI-, CB+ (MOTATO-VÁSQUEZ *et al.*, 2018).

Bresadolia craterella (Berk. & M.A. Curtis) Audet

Basidiomata single, centrally stipitate, fleshy, up to 2.5 cm high and 2 cm wide. **Pileus** flat or slightly depressed in the centre, radially slightly wrinkled, glabrous or with some tufts of hairs adpressed or glued to the surface, whitish, tan to rust; margin thin, slightly lobate. **Pore surface** whitish, **pores** angular, decurrent on stipe to the base, 3-6 per mm. **Hyphal system** dimitic; **generative hyphae** with clamps, dominant and rather regular in the trama, with swollen parts in the context. **Skeleto-binding hyphae** irregular and difficult to separate from the generative hyphae proper. **Basidiospores** cylindrical ellipsoid, smooth, hyaline, thin-walled, 8-10 × 3.2-4 µm.

Distribution: sub-tropical to tropical America.

Material studied: on fallen branch in a man-made wood with deciduous trees, 22 Nov. 2018 - Sosua (P.to Plata) DR. Exiccatum: ANGE1132 (Fig. 9).

Remarks

B. craterella differs from other species in the genus by the smaller and paler basidiomata without watery consistency when fresh and smaller pores (MOTATO-VÁSQUEZ *et al.*, 2018).



Fig. 9. Bresadolia craterella

Photo by Claudio Angelini

Genus Perenniporia Murrill

(as defined in Angelini & Losi, 2015)

Perenniporia subannosa (Bres.) Decock, S. Herrera & Ryvarden

Basidiomata pileate, solitary, tough, sessile. Upper surface brown, grey, lilac, violet, yellowish green, zonate-sulcate, velvety to glabrous with a blackish brown cuticle 0.2-0.3 mm thick; margin rather thin and rounded, white, regular or slightly wavy. **Pore surface** whitish to cream, **pores** angular, rather irregular, 3-4 per mm, with entire dissepiments; **tubes** up to 1 cm deep, context thin, with a cottony texture. **Tubes** and **context** concolorous with pore surface. **Hyphal system** dimitic, **generative hyphae** with clamps; **skeletal hyphae** unbranched and strongly dextrinoid, in the context (3.2-) 4-6 (-7.2) μm diam. **Basidiospores** ellipsoid to subglobose, smooth, thick-walled, hyaline, not dextrinoid, 3.8-5 × 3-4.2 μm.

Distribution: the species seems to be restricted to Central and South America and the Caribbean area (DECOCK *et al.*, 2001).

Material studied: on stumps in a mountain mixed forest with pine trees (*Pinus occidentalis*), 28 Feb. 2020 - Jarabacoa (La Vega) DR. Exiccatum: ANGE1323 (Fig. 10).

Remarks

Its closest relative is *P. contraria,* which has the margin of the pileus thin and acute, smaller pores (5-) 6-8 per mm and narrower skeletal hyphae in the context 2.5-3.8 (-4.5) μ m diam (DECOCK *et al.,* 2001).

Genus Perenniporiella Decock & Ryvarden

Perenniporiella is characterized by having trametoid **habitus**, a dimitic **hyphal system**, clamped *generative hyphae*, dendroid **skeletal hyphae**, and subglobose, not truncate, smooth, thick-walled, dextrinoid **basidiospores**.



Fig. 10. Perenniporia subannosa

Photo by Claudio Angelini

Perenniporiella neofulva (Lloyd) Decock & Ryvarden

Basidiomata pileate, solitary, sessile to flabelliform, coriaceous, whitish to pale cream in all parts. Upper surface smooth to low tuberculate, glabrous, azonate; **pores** round, (7) 8 (9) per mm. **Hyphal system** dimitic, **generative hyphae** hyaline, with clamps; **skeletal hyphae** variably branched, arboriform, hyaline to pale yellowish, not dextrinoid. **Basidiospores** broadly-ellipsoid to subglobose, hyaline, thick-walled, 3.6-4.4 (-4.8) × 3-4 µm, weakly dextrinoid or apparently not dextrinoid.

Distribution: south America and the Caribbean area (DECOCK & RYVARDEN, 2003).

Material studied: on fallen branch in a mountain forest with deciduous trees, 4 Nov. 2019 - Pico Isabel de Torres (P.to Plata) DR. Exiccatum: ANGE1200 (Fig. 11).

Remarks

The closest relative *P. micropora* has a thinner basidiome, smaller pores and larger basidiospores (RYVARDEN, 1990).

Genus Polyporus P. Micheli ex Adans

(as defined in ANGELINI & LOSI, 2014)

Polyporus leprieurii Mont.

Basidiomata laterally stipitate with a small, irregular, dark reddish disc at the point of attachment, single, coriaceous. **Pileus** flabelliform, up to 4 cm wide and 1-2 mm thick, margin acute, even to undulate; upper surface pale tan to isabelline, glabrous, azonate to faintly zonate, slightly radially striate. **Pore surface** whitish to concolorous with upper surface, **pores** round



Fig. 11. Perenniporiella neofulva

Photo by Claudio Angelini



Fig. 12. Polyporus leprieurii

Photo by Claudio Angelini

to mostly angular, 6-10 per mm, with entire and rather thick dissepiments. **Stipe** up to 1 cm long and 3 mm wide, cylindrical or with one of the sides slightly flattened, black to dark brown, glabrous. **Hyphal system** dimitic, arboriform binding hyphae present; **generative hyphae** with clamps. **Cystidia** lacking. **Basidiospores** narrowly elipsoid, smooth, hyaline, thin-walled, 5.2- $7.2 \times 2.2-3 \mu m$.

Distribution: tropical to subtropical species (Núñez & Ryvarden, 1995).

Material studied: on fallen branch in a mountain mixed forest with pine trees (*Pinus occidentalis*), 28 Nov. 2017 - Jarabacoa (La Vega) DR. Exiccatum: JBSD130259 (Fig. 12).

Remarks

A close species is *Polyporus guianensis* Mont. and in herbaria these two polypores are often confused however *P. guianensis* has larger pores and basidiospores (FIDALGO & FIDALGO, 1967).

Genus Pseudofavolus Pat.

Basidiomata flabelliform to spathulate, narrowing behind to a **stipe** like base, **pileus** glabrous, smooth or tessellate, **context** thin; **pores** large to rather small; **tubes** short. **Hyphal system** dimitic, **generative hyphae** with clamps; **skeleto-binding hyphae** arboriform. **Basidiospores** smooth and large. Causes a white **rot** (GILBERTSON & RYVARDEN, 1987).

Pseudofavolus miquelii (Mont.) Pat.

Basidiomata single, pileate, laterally substipitate or attached with a contracted tapering base with a small, whitish, dark violaceous margined disc at the point of attachment, somewhat flexible but fragile when dry. **Pileus** conchate, up to 5 cm wide and 2 mm thick, upper surface



Fig. 13. Pseudofavolus miquelii

Photo by Claudio Angelini

whitish to pale reddish-brown, glabrous, azonate, minutely tessellate reflecting the bottoms of the pores due to the very thin straw-coloured context; margin acute, even to lobed. **Pore surface** reddish-brown, **pores** angular, 1-2 per mm, dissepiments thin, entire, seldom slightly lacerate or fimbriate. **Hyphal system** dimitic, arboriform **binding hyphae** present; **generative hyphae** with clamps. **Cystidia** none. **Basidiospores** narrowly ellipsoid, smooth, often with oily contents, 14-20 × 4.8-5.6 (-8) µm.

Distribution: pantropical but exact distribution unknown (RYVARDEN, 2016).

Material studied: on fallen branch in a man-made wood with deciduous trees, 17 Dec. 2017 - Sosua (P.to Plata) DR. Exiccatum: JBSD130266 (Fig. 13).

Genus Trametes Fr.

(as defined in Angelini & Losi, 2014)

Trametes pavonia (Hook.) Ryvarden

Basidiomata pileate, sessile, single or imbricate, coriaceous and somewhat flexible. **Pileus** dimidiate to flabelliform, up to 4 cm wide and 3 mm thick; upper surface whitish to brown, narrowly zonate and concentrically sulcate, villose-tomentose, margin acute, slightly wavy to lobed, white. **Pore surface** whitish, **pores** round to angular or slightly elongated radially, 5-8 per mm; **context** white, fibrous. **Hyphal system** trimitic, **generative hyphae** with clamps. **Cystidia** none. **Basidiospores** ellipsoid, smooth, thin- to slightly thick-walled, hyaline, 4.4-5.8 × 3-3.8 µm.

Distribution: widespread and common in tropical America to northern Argentina (Gilbertson & Ryvarden, 1987).

Material studied: on fallen trunk in a man-made wood with deciduous trees, 21 Nov. 2017 -Sosua (P.to Plata) DR. Exiccatum: JBSD130265 (Fig. 14)

Trametes villosa (Sw.) Kreisel

Basidiomata pileate, single or fused laterally, thin, flexible, dimidiate or effused-reflexed. Upper surface whitish, grey, brown, greenish, zonate, strigose to hirsute; margin regular to lobed. **Pore surface** concolorous with the pileus surface, **pores** angular, 2-3 per mm. **Context** white, 0.2-0.3 mm. **Hyphal system** trimitic, **generative hyphae** with clamps. **Basidiospores** cylindrical to suballantoid or narrowly ellipsoid, hyaline, smooth, thin-walled, 6.4-8 × 2.8-3.2 µm.

Distribution: widely reported from Neotropics and Southeastern United States (GILBERTSON & RYVARDEN, 1987).

Material studied: on fallen trunk in a mountain forest with pine trees (*Pinus occidentalis*), 19 Apr. 2013 - Jarabacoa (La Vega) DR. Exiccatum: JBSD124858 (Fig. 15).

Genus Truncospora Pilát

Basidiomata sessile to resupinate, **context** tough-spongy, white to tan. **Hyphal system** dimitic. **Generative hyphae** clamped; **skeletal hyphae** rarely branched, of dendroid appearance, dextrinoid. **Basidiospores** ovate or ellipsoid, thick-walled, yellowish to brownish, dextrinoid (ZMITROVICH, 2018).

Truncospora tephropora (Mont.) Zmitr.

Basidiomata resupinate, 3 cm wide, with a black, tomentose to glabrous, somewhat sulcate, pseudo-pileus at the upper margin. **Pore surface** clay buff, **pores** angular, sometimes slightly elongated radially, 3-6 per mm; **tubes** brown. **Hyphal system** dimitic, **generative hyphae** difficult to find, hyaline, with clamps; **skeletal hyphae** dominating, thick-walled with a distinct



Fig. 14. Trametes pavonia

Photo by Claudio Angelini



Fig. 15. Trametes villosa

Photo by Claudio Angelini

lumen, clearly dextrinoid. **Basidiospores** broadly ellipsoid, sometimes with adaxial side slightly flattened, to truncate, thick-walled, dextrinoid, 4.8-6.4 × 4-4.8 μ m.

Distribution: pantropical species (RYVARDEN, 2016).

Material studied: on construction wood in front of the beach, 21 Nov. 2016 - Sosua (P.to Plata) DR. Exiccatum: ANGE806 (**Fig. 16**).



Fig. 16. Truncospora tephropora

Photo by Claudio Angelini

Family *Schizoporaceae* Jülich 1982 (as defined in Angelini & Losi 2015)

Genus *Schizopora* Velen. emend. Donk (as defined in Angelini & Losi 2018)

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

Basidiomata resupinate to slightly effused-reflexed or somewhat nodulose, tough-fibrous, later woody. **Pore surface** whitish, cream to pale yellow; **pores** angular, elongated or sinuous, at first cupulate, 2-6 per mm; **tubes** cream to buff, **context** concolorous. **Hyphal system** monomitic, **hyphae** with clamps, hyaline, thin- to thick-walled; hyphal ends on the edges of the dissepiments mostly encrusted with granular crystals. **Cystidia** bulbous, smooth, present in the trama. **Basidiospores** broadly ellipsoid to subglobose, hyaline, uniguttulate, thin- to slightly thick-walled, 3.8-4.4 × 3-3.8 µm.

Distribution: very common in tropical zones (Ryvarden, 2016).

Material studied: on fallen trunk in a mountain mixed forest with pine trees (*Pinus occidentalis*), 7 Mar. 2020 - Jarabacoa (La Vega) DR. Exiccatum: ANGE1326 (**Fig. 17**).



Fig. 17. Schizopora flavipora

Photo by Claudio Angelini

Family Steccherinaceae Parmasto 1968

Species with **poroid** or **hydnoid hymenophores**; **hyphal system** dimitic with clamps more rarely monomitic and/or simple septa; **spores** mostly thin-walled, rather small, smooth and hyaline; **cystidia** often present. Producing a white-**rot** (JUSTO *et al.*, 2017).

Genus Nigroporus Murrill

Basidiomata pileate to resupinate, **pileus** when present greyish-blue, vinaceous-brown, pink or violet; **hymenial surface** concolorous. **Hyphal system** dimitic, **generative hyphae** with clamps; **cystidia** none; **basidiospores** mostly small, hyaline, thin-walled, smooth, non amyloid. Causes a white **rot**.

Nigroporus vinosus (Berk.) Murrill

Badidiomata pileate, thin, coriaceous, single, broadly sessile to flabelliform; upper surface glabrous, black-violaceous to vinaceous-brown, faintly zonate sulcate; margin regular to slightly undulate, white or not particularly differentiated. **Pore surface** violaceous brown, **pores** circular to angular, 8-10 per mm. **Hyphal system** dimitic, **generative hyphae** clamped. **Basidiospores** cylindrical suballantoid, 3.8-4.8 × 1.4-1.6 µm.

Distribution: widespread in the tropics (Ryvarden, 2015).

Material studied: on fallen decay trunk in a mountain mixed forest with pine trees (*Pinus occidentalis*), 23 Dec. 2019 - Jarabacoa (La Vega) DR. Exiccatum: ANGE1351 (Fig. 18).

Remarks

Younger specimens are described thicker and velvety-tomentose (OVERHOLTS, 1953).



Fig. 18. Nigroporus vinosus

Photo by Claudio Angelini

Genus Steccherinum Gray

The genus *Steccherinum* seems to be limited to dimitic species with clamps, small spores, encrusted **skeletocystidia** with **poroid** to **hydnoid hymenophore** (MIETTINEN *et al.*, 2012).

Steccherinum undigerum (Berk. & M.A. Curtis) Westphalen & Tomsovsky

Basidiomata pileate, thin, tough when fresh, more fragile when dry, single or usually imbricate, sometimes fused laterally, effused reflexed to dimidiate; upper surface whitish, pinkish to pale brown, faintly zonate sulcate, radially wrinkled, finely tomentose; margin white, more or less regular, wavy to lobed. **Pore surface** concolorous whit the upper surface, **pores** angular, 5-8 per mm. **Hyphal system** dimitic, **generative hyphae** with clamps. **Skeletocystidia** frequently slightly projecting into the hymenium or imbedded, sometimes numerous in the dissepiments edges, cylindrical to clavate or attenuate towards the apex, encrusted apically, rarely smooth, 5.6-11 µm diam. **Basidia** clavate, 4-sterigmate, 14-16 × 5-8 µm. **Basidiospores** broadly ellipsoid, hyaline, smooth, thin- to slightly thick-walled, 4-5.2 (-5.5) × (3-) 3.2-4.2 µm.

Distribution: widespread in the Neotropics, *S. undigerum* is a very common species in southern Brazil (WESTPHALEN *et al.*, 2018).

Material studied: on fallen trunk in a mountain mixed forest with pine trees (*Pinus occidentalis*), 10 Jan. 2020 - Jarabacoa (La Vega) DR. Exiccatum: ANGE1360 (**Fig. 19**).



Fig. 19. Steccherinum undigerum

Photo by Claudio Angelini

Family Stephanosporaceae Oberw. & E. Horak, 1979

Basidiomata gasteroid (*Stephanospora*) or resupinate (*Lindtneria*), characterized by strongly sculptured and more or less coloured **basidiospores**. *Lindtneria* appears quite unlike *Stephanospora*, but molecular, chemical and anatomical data confirm their relationship (CANNON & KIRK, 2007).

Genus Lindtneria Pilát

The genus *Lindtneria* is characterized above all by the **basidia** with cyanophilous granulation and the cyanophilous ornamented **basidiospores** (GORJÓN, 2020).

Lindtneria trachyspora (Bourdot & Galzin) Pilát

Basidiomata resupinate, effused to somewhat nodulose, soft, cottony esp. when young, brittle when dry. **Hymenophore** at first white to pale yellow, smooth, papillate to reticulate then bright yellow to orange, poroid with irregular and large **pores**, 0.5-3 per mm; margin white, cottony fibrillose or not differentiated. **Hyphal system** monomitic; **hyphae** hyaline, thin-walled, simple septate with scattered clamps more common in the subhymenium and mostly present at the basidial bases; **hyphal strands** numerous. **Cystidia** none, but hyphal ends in the hymenium with a bulb of excreted substance may be present. **Basidia** clavate to suburniform, up to 35 µm long and 16 µm wide, hyaline, 4-sterigmate, with cyanophilous globules in the cytoplasma. **Basidiospores** globose, thin- to slightly thick-walled, hyaline to pale brown, usually uniguttulate, aculeate or even with short crests, 6-8 (-9) µm in diam excluding the ornamentation; echinuli up to 1.6 µm long.

Distribution: a rare species in the Neotropics (Ryvarden, 2015).

Material studied: long a river, on fallen decay trunk in a man-made wood with deciduous trees, 4 Dec. 2019 - Sosua (P.to Plata) DR. Exiccatum: ANGE1241 (**Fig. 20**).



Fig. 20. Lindtneria trachyspora

Photo by Claudio Angelini

STEREOID AND CORTICIOID FUNGI

Stereoid fungi: group of many types of **basidiomycetes** characterized by a pileate to effusedreflexed **basidiocarp** and a more or less smooth **hymenial surface** (RYVARDEN, 2010).

Corticioid fungi: **hymenium** smooth to hydnoid; **basidiomata** resupinate rarely pileate, sessile or stipitate (JÜLICH, 1989).

Family Panaceae Miettinen, Justo & Hibbett 2017

Basidiomes pileate-stipitate, **hymenophore** lamellate or smooth. **Hyphal system** dimitic, **generative hyphae** clamped; **spores** hyaline, smooth, non-amyloid, non dextrinoid, thin-walled; **cystidia** present. Producing a white-**rot**.

Genus Cymatoderma Jungh.

Basidiomata lignicolous, coriaceous, dimidiate, flabellate, infundibuliform. Upper surface of the **pileus** with ridges and tomentose. **Hymenial surface** smooth, warty, spiny or with folds, ridges or undulations. **Stipe** lateral or central, well developewd or rudimentary. **Hyphal system** dimitic or trimitic, **generative hyphae** with clamps. **Gloeocystidia** always present, **metuloids** in some species. **Basidiospores** thin-walled, hyaline, non amyloid (REID, 1965).

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

Basidiomata single, infundibuliform with central **stipe**, coriaceous-membranous, up to 10 cm high and 5 cm wide. **Pileus** whitish to pale ochre, irregularly wrinkled and with radiate sharp ridges, hispid-strigose toward the center; margin dentate-lobate, incised-erose, laciniate-fimbriate. **Hymenial surface** whitish, smooth with obtuse longitudinal folds. **Stipe** well developed, cylindrical, pale brown, slightly tomentose, attached to the woody substrate by a small basal disc. **Hyphal system** dimitic; **generative hyphae** with clamps. **Gloeocystidia** frequent, sinuous, several constricted, widest at the base, tapering to the obtuse apex, thin-walled. **Basidiospores** subcylindrical to ellipsoid, hyaline, thin-walled, mostly guttulate, 9-12 × 4.2-5.2 μm.

Distribution: throughout the Neotropics (Welden, 2010).

Material studied: on fallen decay trunk in a man-made wood with deciduous trees, 16 Nov. 2018 - Sosua (P.to Plata) DR. Exiccatum: JBSD131267 (**Fig. 21**).

Remarks

Absence of metuloids and the large ellipsoid basidiospores characterized the species (REID, 1965).



Fig. 21. Cymatoderma caperatum

Photo by Claudio Angelini

Genus *Podoschypha* Pat. (as defined in Angelini & Losi, 2016)

Podoscypha nitidula (Berk.) Pat.

Basidiomata single or in small groups, stipitate, infundibuliform, papery-coriaceous, up to 4 cm high and wide. **Pileus** yellowish, pinkish, golden brown or reddish brown in age, lineate-striate, concentrically more or less zonate, glabrous, sometimes with semi-translucent appearance;



Fig. 22. Podoscypha nitidula

Photo by Claudio Angelini

margin even, slightly wavy to lobed, white or not differentiated. **Hymenial surface** smooth, whitish to pale grey or concolorous with the pileus, faintly zonate. **Stipe** glabrous, short and rudimentary, brown, arising from a basal mycelial pad on exposed wood. **Hyphal system** dimitic; **generative hyphae** clamped. **Gloeocystidia** present, numerous, enclosed or slightly projecting, long, tubular, sinuous and somewhat constricted, mostly tapering to an obtuse apex, thin-walled, with homogeneous contents. **Basidia** mature not seen. **Basidiospores** broadly ellipsoid, hyaline, thin-walled, mostly uniguttulate, 4-4.8 × 2.8-3.5 μm.

Distribution: neotropical species (Welden, 2010).

Material studied: on fallen branches in a mountain mixed forest with pine trees (*Pinus occidentalis*), 18 Nov. 2018 - Jarabacoa (La Vega) DR. Exiccatum: JBSD131258 (Fig. 22).

Podoscypha thozetii (Berk.) Boidin

Basidiomata gregarious, stipitate, infundibuliform, rather soft when fresh, up to 3 cm high and 3.5 cm wide. **Pileus** glabrous, at first pink to light buff and faintly zonate then with clear brown zones; margin white, slightly wavy to lobed or deeply divided. **Hymenial surface** smooth, pink to pale ochre, even or with shallow undulate folds. **Stipe** unevenly brownish, glabrous, often with a ball of earth adhering to the base. **Hyphal system** dimitic; **generative hyphae** thin walled, hyaline, with clamps; **skeletal hyphae**, thick-walled, hyaline, 2.4-5 µm wide. **Gloeocystidia** present, numerous, not or slightly projecting, undulant, thin-walled, tapering to an obtuse apex, subhyaline, with homogeneous protoplasm, 60-80 µm long and 6.4-10 µm wide. **Basidiospores** broadly ellipsoid, hyaline, uniguttulate, thin-walled, 6.4-8.8 × 5.2-6.4 µm.

Distribution: widespread in the tropical zones (Ryvarden, 2020). In the Neotropics reported from Mexico, Panama (Ryvarden, 2010), Brazil (Welden, 2010) and Venezuela (Reid, 1965).

Material studied: on the ground amongst grasses, 2 Jan. 2020 - Near Airport of P.to Plata - DR. Exiccatum: ANGE1317(Fig. 23).



Fig. 23. Podoscypha thozetii

Photo by Claudio Angelini

Family *Steccherinaceae* Parmasto 1968 Genus *Steccherinum* as reported above.

Steccherinum ciliolatum (Berk. & M.A. Curtis) Gilb. & Budington

Basidiomata resupinate, adnate, subceraceous, membranaceous to somewhat fibrous, white to pale ochraceous; margin fimbriate or slightly rhizomorphic. **Hymenial surface** odontoid to hydnoid with irregularly conical aculei, more or less fringed and fimbriate in the apex, up to 1 mm long. **Hyphal system** dimitic with clamped **generative hyphae**. **Cystidia** (pseudocystidia) numerous in aculei, strongly encrusted at distal end. **Basidiospores** ellipsoid, smooth, thinwalled, 3.8-4.2 × 2.2-2.6 µm.

Distribution: it seems rare in the Neotropics: recorded in Mexico (URBIZU *et al.*, 2014) and seems in Colombia (HJORTSTAM & RYVARDEN, 2007).

Material studied: on fallen branches in a man-made wood with deciduous trees, 25 Dec. 2018 - Sosua (P.to Plata) DR. Exiccatum: JBSD131264 (Fig. 24).

Remarks

The closest relative *Steccherinum litschaueri* (Bourdot & Galzin) J. Erikss. has regularly cylindrical, not fimbriate aculei and the basidiospores are less rounded with almost parallel sides (ERIKSSON *et al.*, 1984).



Fig. 24. Steccherinum ciliolatum

Photo by Claudio Angelini

Family *Stereaceae* Pilát 1930 Genus *Stereum* Hill. ex Pers. (as defined in Angelini & Losi, 2013a)

Stereum hirsutum (Willd.) Pers.

Distribution: widespread in Mexico and Central America, Caribbean islands, and South America (Welden, 2010).

Material studied: on fallen branches in a mountain mixed forest with pine trees (*Pinus occidentalis*), 7 Mar. 2020 - Jarabacoa (La Vega) DR. Exiccatum: ANGE1327 (Fig. 25).

Stereum striatum (Fr.) Fr.

Basidiomata pileate, very thin and papery, effused-reflexed, dimidiate, flabelliform or orbicular and attached by a more or less central point, to 4.0 cm wide and long, sometimes imbricate or with laterally fused pileus; upper surface glabrous, shiny, sericeous, radially lineate-striate, zonate, pale grey, whitish, silvery, with brownish or pinkish zones; margin rounded, sometimes lobed or wavy, entire or rarely lacerate. **Hymenial surface** smooth, whitish to pale grey. **Hyphal system** dimitic; **generative hyphae** thin- to slightly thick-walled, simple septate; **skeletal hyphae** thick-walled, seldom branched. **Skeletocystidia** up to 10 μ m wide, cylindrical to subcylindrical, often constricted, thick-walled, with yellowisih contents, apically obtuse or subulate, thin- or slightly thick-walled, sometimes with a schizopapilla. **Acutocystidia** numerous, thin-walled, up to 6 μ m wide. **Basidia** narrowly clavate, 4-sterigmate. **Basidiospores** narrowly ellipsoid to cylindrical, thin-walled, smooth, hyaline, amyloid, 5-6 × 2.2-3 μ m.

Distribution: widespread in the eastern and southern United States and in Central and South America (RYVARDEN, 2010).

Material studied: on fallen branches in a mountain mixed forest with pine trees (*Pinus occidentalis*), 9 May 2018 - Jarabacoa (La Vega) DR. Exiccatum: JBSD130744 and JBSD130745 (Fig. 26).



Fig. 25. Stereum hirsutum

Photo by Claudio Angelini



Fig. 26. Stereum striatum

Photo by Claudio Angelini

Family *Thelephoraceae* Chevall. 1826 Genus *Thelephora* Ehrh. ex Willd. (as defined in Angelini & Losi, 2018).

Thelephora dentosa Berk. & M.A. Curtis

Basidiomata soft-coriaceous, up to 4 cm high, encrusting leaves and small twigs at the base and ascending as free, sessile, clavarioid, spathulate, flabelliform, digitate processes and lobes, purplish brown, blackish brown; margin white; hymenium smooth to velutinous. **Hyphae** clamped, subhyaline to light brown, thin- to slightly thick-walled, sometimes inflated as reported by WELDEN (1968). **Hymenium** cyanescent or not in KOH. **Basidiospores** 6.4-8.4 (-9.6) × 5.6-7.6 µm except the ornamentation, broadly ellipsoid to subglobose, sometimes slightly angular, not lobed, yellowish brown, mostly uniguttulate, echinulate, spines up to 1 (1.2) µm.

Distribution: Cuba, Haiti, Jamaica and Mexico (CHACÓN et al., 2018).

Material studied: on litter, in a man-made wood with deciduous trees, 10 Dec. 2018 - Sosua (P.to Plata) DR. Exiccatum: JBSD131262 (Fig. 27).

Remarks

In the American tropics *Th. paraguayensis* Corner, *Th. cervicornis* Corner, *Th. versatilis* Ramírez-López & M. Villegas and *Th. pseudoversatilis* Ramírez-López & M. Villegas are part of *Th. dentosa* complex characterized by not lobed, not or slightly angular, subglobose, broadly ellipsoid or ovateellipsoid basidiospores. *Th. paraguajensis* and *Th. cervicornis* have clavarioid or palmate basidiome without resupinate, encrusting parts (STALPERS, 1993); *Th. versatilis* and *Th. pseudoversatilis* have more than 5 cm long basidiome and smaller basidiospores (RAMÍREZ-LÓPEZ *et al.*, 2015).



Fig. 27. Thelephora dentosa

Photo by Claudio Angelini

Thelephora dominicana Angelini, Losi & Vizzini

Thelephora dominicana is characterized by small, infundibuliform to spathulate **basidiomes** and brown, globose to subglobose, strongly aculeate **basidiospores** distinctive in the genus *Thelephora* (VIZZINI *et al.*, 2016).

Distribution: Dominican Republic, the type locality, and Mexico (OswALDO et al., 2020).

Material studied: on litter, in a man-made wood with deciduous trees, 3 Dec. 2016 - Sosua (P.to Plata) DR. Exiccatum: JBSD129824 (**Fig. 28**).



Fig. 28. Thelephora dominicana

Photo by Claudio Angelini

Thelephora palmata (Scop.) Fr.

Basidiomata caespitose, fibrous-coriaceous, stipitate and clavarioid with flattened and obtuse branches, up to 5 cm high, resupinate part absent. **Hymenium** amphigenous, smooth, purplish brown, margin white. **Smell** of rotten cabbage when fresh, foetid on drying. **Hyphae** clamped with scattered simple septa, hyaline to subhyaline in 3% KOH, thin- to slightly thick-walled; subhymenial hyphae usually short and inflated, 4.8-9 μ m diam, tramal hyphae regular 3.2-6 μ m diam. **Trama** cyanescent in KOH. **Basidiospores** 8-11 × 6.4-8 μ m except the ornamentation, brown, mostly with oil drops, irregular in outline to lobed, usually elongated along one axis, aculeolate to echinulate, echinuli sometimes bifurcate.

Distribution: in the Neotropics reported from Brazil (Meijer, 2006; Bononi, 1984), Guatemala (Flores Arzù, 2012), Mexico (Jesus Garcia Jimenez, 2013), Venezuela (Dennis, 1970), Cuba (Camino Vitaro *et al.*, 2006).

Material studied: on litter, in a mountain mixed forest with pine trees (*Pinus occidentalis*), 28 Feb. 2020 - Jarabacoa (La Vega) DR. Exiccatum: ANGE1336 (Fig. 29).

Remarks

Th. palmata can be distinguished from ramified states of *Th. anthocephala*, *T. caryophillea*, or *T. regularis* by the foetid smell and the cyanescent trama (CORNER, 1968).



Fig. 29. Thelephora palmata

Photo by Claudio Angelini

Thelephora terrestris Ehrh.

Basidiomata subsessile, fibrous-coriaceous, mostly concrescent, flabellate, up to 1.5 cm wide. **Hymenium** unilateral, inferior, papillate, radially sulcate rugulose, brown chocolate. Abhymenial surface fibrillose rugulose, dark brown to blackish. Margin white, fimbriate and incised. **Hyphae** clamped, subhyaline to pale brown in 3% KOH, slightly thick-walled, 4-6 µm diam; **hyphal cords** present, dark brown in 3% KOH. No parts cyanescent in KOH. **Basidiospores** 8-11.2 × 6-8.8 µm except the ornamentation, brown, mostly with oil drops, irregular in outline to lobed, usually elongated along one axis, aculeolate, echinuli sometimes bifurcate.

Distribution: Cuba (Camino Vitaro *et al.*, 2006), Guatemala (Welden, 1968), Mexico (Sanchez-Jacome & Guzmán -Davalos, 1997), Jamaica, Brazil, Uruguay (Sulzbacher *et al.*, 2013), Panama (Guzmán & Piepenbring, 2011).

Material studied: on litter, in a mountain forest with pine trees (*Pinus occidentalis*), 21 Dec. 2019 - Jarabacoa (La Vega) DR. Exiccatum: ANGEANGE1348 (Fig. 30).

Remarks

Macroscopically the species is very varible (CORNER, 1968) up to wholly and widely resupinate basidiome as *Th. terrestris* f. *radiosa* (P. Karst.) Zmitr.



Fig. 30. Thelephora terrestris

Photo by Claudio Angelini

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