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New records of agaricoid fungi (Basidiomycota) from Paraíba, Brazil

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Resumo

Novos registros de fungos agaricoides (Basidiomycota) na Paraíba, Brasil. O artigo apresenta uma lista de dezoito espécies de fungos agaricoides coletadas na Mata Atlântica paraibana. *Hygrocybe subcaespitosa* e *Marasmius similis* são novos registros para o Brasil. Dezesseis espécies são novos registros para a Paraíba.

Palavras-chave: Agaricales; Cogumelos; Mata Atlântica; Nordeste

Abstract

This work presents a list of eighteen species of agaricoid fungi collected in the Atlantic Forest in the state of Paraíba. *Hygrocybe subcaespitosa* and *Marasmius similis* are new records for Brazil. Sixteen species are new records for Paraíba.

Key words: Agaricales; Atlantic Forest; Mushrooms; Northeastern

Introduction

Agaricoid fungi are traditionally known for their mushrooms and are mostly included in Agaricales *sensu lato* (SINGER, 1986). Modern systematic studies including Agaricales have radically modified the interpretations of the evolution and classification of lamellar mushrooms and their allied groups (HIBBETT et al., 1997; MONCALVO et al., 2002; MATHENY et al., 2006). This has resulted in a larger and morphologically more diverse order that includes 26 families (KIRK et al., 2008).

Several records of agaricoid fungi have been recently published for northeastern Brazil (GIULIETTI; QUEIROZ, 2006; WARTCHOW; MAIA, 2007; WARTCHOW; CAVALCANTI, 2010; WARTCHOW et al., 2007a; 2007b; 2009; 2011; OLIVEIRA, 2009; ARAÚJO et al., 2011; PINHEIRO et al., 2013). A *Guide to the Common Fungi of the Semiarid Region of Brazil* (NEVES et al., 2013) and *Fungos do Parque Nacional do Catimbau* (MAIA, 2015) have revealed a great diversity of macrofungi from the semiarid region; however, very little is known about fungi from the state of Paraíba.

The mosaic vegetation found in Paraíba ranges from Atlantic Forest along the coast to a semiarid region in the interior, and this diversity provides a wide range of ecological niches for fungi. Since European colonization, many areas of northeastern Brazil have been deforested (e.g., for cattle and sugarcane farms), which is threatening the environment in this region (RIBEIRO et al., 2009). The Atlantic Forest once covered ca. 15% of Brazil, of which 20.37% in the Northeast Region. However, only 15.58% of the original forest in the Northeast Region remains (SOS MATA ATLÂNTICA, 2014).

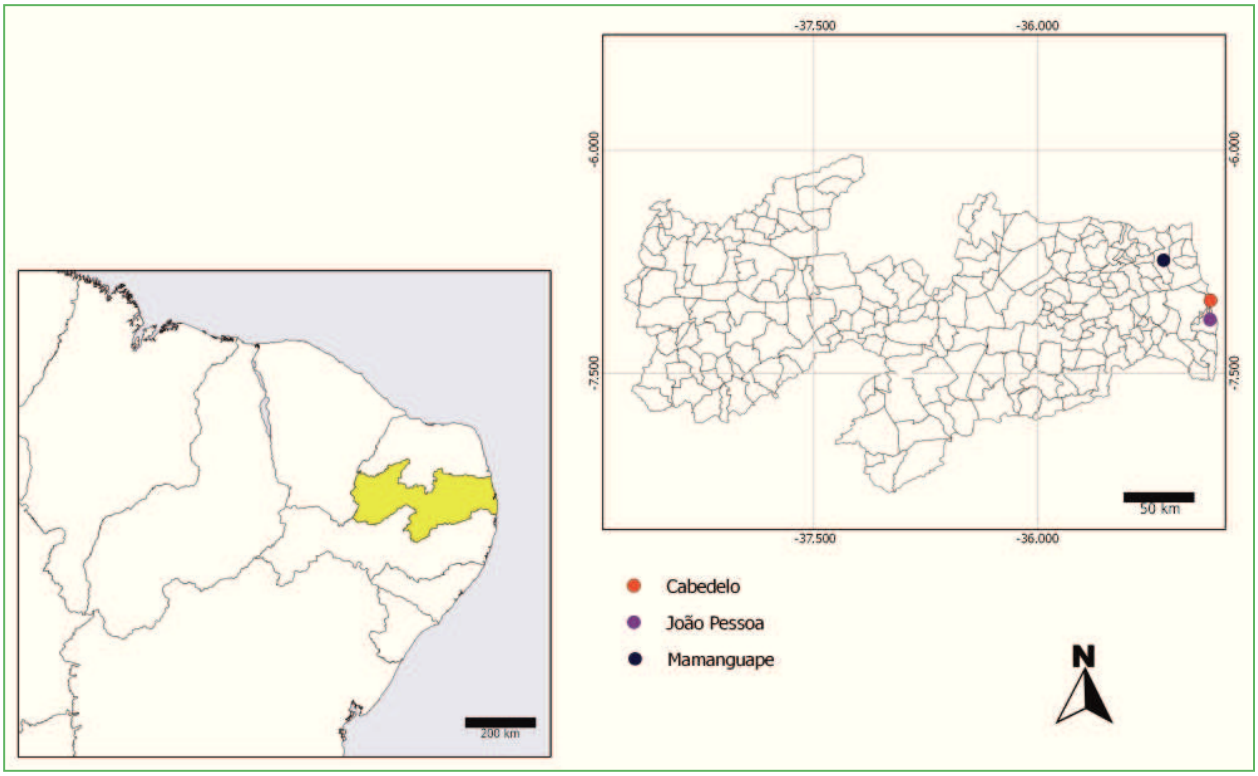
The goals of this work are to present a list of species of agaricoid fungi collected in the Atlantic Forest of Paraíba and to contribute to the knowledge of the tropical mycota.

Material and Methods

Paraíba is located in the Northeast Region of Brazil (Figure 1). It covers an area of 56,439 km² and its coast has a humid tropical climate with abundant rainfall. Further away from the coast, beyond the Borborema Plateau, the state has a semiarid climate that is subjected to prolonged droughts (SILVA et al., 2003; LEAL et al., 2005).

Fieldwork was conducted between May 2009 and July 2011, in the following fragments of Atlantic Forest in Paraíba: João Pessoa, at the Universidade Federal da Paraíba (07°08'S, 34°50'W) and the Jardim Botânico Benjamim Maranhão (07º06'S, 34º52'W); Mamanguape, at the Reserva Biológica Guaribas (06°44'S, 35°9'W); and Cabedelo (06°59'S, 34°49'W).

FIGURE 1: Map of Paraíba showing the collection localities.



The specimens were studied and preserved following traditional methods used in mycology (MULLER et al., 2004). Micro and macroscopic characters of the basidiomes were described according to Largent et al. (1977). Macromorphological observations were based on fresh basidiomes. Color codes (e.g., OAC635) are based on the Online Auction Color Chart (Kramer 2004). For the microscopic observations, thin sections of dried specimens were rehydrated in 70% ethanol, followed by 5% KOH or Melzer's reagent. For the spore measurements, Qm denotes the mean of length × width and n/s the number of spores measured. The specimens were deposited at JPB (THIERS, continuously updated).

Results

Eighteen species in 9 genera, distributed in 9 families within Agaricales, were collected. *Hygrocybe subcaespitosa* and *Marasmius similis* are new records for Brazil (marked with # in the list), and sixteen species are new records for the state of Paraíba (marked with * in the list).

Agaricaceae Chevall.

Leucocoprinus fragilissimus (Berk. & M.A. Curtis) Pat., Essai taxonomique sur les familles et les genres des Hyménomycètes: 171 (1900) (Figure 3A)

Description and illustrations: Smith and Weber (1982), Rother and Silveira (2009).

Distribution in Brazil: Paraíba (present study), Paraná (MEIJER, 2006), Pernambuco (WARTCHOW et al., 2007b), Rio Grande do Sul (RICK, 1961 [as *Lepiota licmophora*]; ALBUQUERQUE et al., 2006; ROTHER; SILVEIRA, 2008; 2009), Rondônia (CAPELARI; MAZIERO, 1988), and São Paulo (BONONI et al., 1981).

Specimen examined: BRAZIL, PARAÍBA: João Pessoa, Jardim Botânico Benjamin Maranhão 23 July 2010, A.C. Magnago 254 (JPB50674).

Comments: *Leucocoprinus fragilissimus* is easily distinguished by its fragile and light yellowish basidiomes. *Leucocoprinus magnicystidiosus* H.V. Sm. & N.S. Weber is a similar species that has a darker colored disc on the pileus surface and much larger and conspicuous cheilocystidia (BRANCO-DIOS, 2003).

Amanitaceae R. Heim ex Pouzar

Amanita crebresulcata Bas, Persoonia 10 (1): 18 (1978) (Figure 3B)

Description and illustrations: Wartchow and Maia (2007).

Distribution in Brazil: Amazonas (BAS, 1978), Paraíba (present study), Paraná (MEIJER, 2006, as "*A.* cf. *crebresulcata*"), Pernambuco (WARTCHOW; MAIA, 2007), and São Paulo (BONONI et al., 1984; GRANDI et al., 1984; PEGLER, 1997).

Specimen examined: BRAZIL, PARAÍBA: João Pessoa, Universidade Federal da Paraíba, 23 June 2010, A.C. Magnago 256 (JPB50676).

Comments: *Amanita crebresulcata* is similar to *A. craseoderma* Bas, but the latter has evanescent dark brown warts on the pileus, a friable volva forming a belt at the stipe base, and globose basidiospores. *Amanita coacta* Bas differs from *A. crebresulcata* mainly by its broader, ellipsoid spores (BAS, 1978; WARTCHOW; MAIA, 2007).

Entolomataceae Kotlaba & Pouzar

Entoloma bloxamii (Berk. & Broome) Sacc., Sylloge Fungorum 5: 684 (1887) (Figure 3C)

Description and illustrations: Meijer (2008).

Distribution in Brazil: Paraíba (present study), and Paraná (MEIJER, 2008).

Specimen examined: BRAZIL, PARAÍBA: João Pessoa, Universidade Federal da Paraíba, 28 June 2010, A.C. Magnago 245 (JPB50671).

Comments: *Entoloma bloxamii* presents a bluish gray to violaceous pileus and is similar to *E. coeruleogracilis* G.M. Gates & Noordel. and *E. kermandii* G. Gates & Noordel. *Entoloma coeruleogracilis* can be distinguished by its small mycenoid basidiomes, and small spores, and *E. kermandii* has more pronounced angled spores (GATES; NOORDELOOS, 2007).

Hygrophoraceae Roze

Hygrocybe batistae Singer, Atas do Instituto de Micologia da Universidade do Recife 2: 20 (1965) (Figure 3D)

Description and illustrations: Singer (1965), Lodge and Ovrebo (2008).

Distribution in Brazil: Pernambuco (SINGER, 1965), and Paraíba (present study).

Specimen examined: BRAZIL, PARAÍBA: Mamanguape, Reserva Biológica Guaribas, 18 July 2009, J. L. Valões 16 (JPB44297).

Comments: *Hygrocybe batistae* belongs to section *Firmae* (Heinemann, 1963) because it has dimorphic basidia and spores in the same basidiome. Two very distinctive characters of *H. batistae* are the presence of coralloid diverticulae and branched pileipellis hyphae. *Hygrocybe batistae* is very similar to *H. paraibensis* Singer, differing from the later by spore size and the shape and arrangement of the hyphae in the pilleipelis (SINGER, 1965).

Hygrocybe occidentalis* var. *scarletina Pegler & Fiard, Kew Bulletin 32 (2): 311 (1978) (Figure 3E)

Descriptions and illustrations: Pegler and Fiard (1978), Lodge and Pegler (1990).

Distribution in Brazil: Paraíba (present study), and São Paulo (PEGLER, 1997).

Specimens examined: BRAZIL, PARAÍBA: Mamanguape, Reserva Biológica Guaribas, 18 July 2009, A.C. Magnago 80 (JPB44272), 81 (JPB44273), 82 (JPB44274).

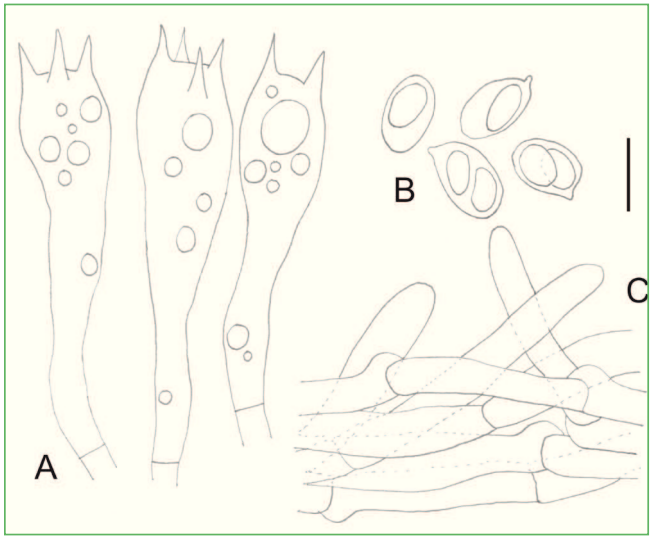
Comments: *Hygrocybe occidentalis* var. *scarletina* is considered a color variant of *H. occidentalis* var. *occidentalis* (Dennis) Pegler. *Hygrocybe occidentalis* var. *scarletina* is characterized by its glabrous, translucent-striate pileus, which is almost always perforated at the center in mature specimens. The hymenophore is never white and the context is soft-aqueous and hygrophanous (PEGLER; FIARD, 1978).

Hygrocybe subcaespitosa (Murrill) Lodge & Pegler, Mycological Research 94(4): 454 (1990) (Figure 2, 3F)

Pileus 0.5-1.5 cm diam., convex to applanate, slightly depressed, surface pruinose and reddish (OAC629) in the center, becoming smooth and red-orange (OAC691) to light orange (OAC763) towards the margin, hygrophanous, margin translucent-striate when moist. *Lamellae* adnate to subdecurrent, waxy, whitish to light yellow (OAC814), closely spaced, lamellulae present, of two lengths. *Stipe* 1.0-3.5 × 0.1-1.5 cm, central, cylindrical, surface smooth to slightly fibrillose, concolor with pileus, hollow, context whitish, mycelium basal white to cream (OAC816). *Spores* 8-10 × 4-6 µm, (Qm=1.8, n/s=20), ovoid to oblong ellipsoid, monomorphic, nonamiloid, hyaline, thin-walled, guttules 1 or 2. *Basidia* 32–50 × 6-13 µm, monomorphics, clavate, 2-4 sterigmate, sterigma 4-6 µm long. *Lamellae edge* fertile. *Cystidia* absent. *Hymenophoral trama* subregular to regular, hyphae 4-11 µm diam. *Pileipellis* repent with some erect hyphae, hyphae 3-10 µm diam., clamp connections present.

Distribution in Brazil: Paraíba (present study).

FIGURE 2: Microstructures of *Hygrocybe subcaespitosa*. A-Basidia, B-Basidiospores, C-Pileipellis. Scale bar=10µm.



Specimens examined: BRAZIL, PARAÍBA: Mamanguape, Reserva Biológica Guaribas, 18 July 2009, A.C. Magnago 49 (JPB44265), 60 (JPB44266), 72 (JPB44271); 01 August 2009, A.C. Magnago 94 (JPB44275), 98 (JPB44279), 103 (JPB44280), 108 (JPB44283).

FIGURE 3: (A) *Leucocoprinus fragilissimus*, (B) *Amanita crebresulcata*, (C) *Entoloma bloxamii*, (D) *Hygrocybe batistae*, (E) *Hygrocybe occidentalis* var. *scarletina*, (F) *Hygrocybe subcaespitosa*. Scale bar = 2.5 cm.

Comments: *Hygrocybe subcaespitosa* resembles *H. miniata* (Fr.) Kummer; however, the lamellae of *H. subcaespitosa* are usually whitish to pale yellow rather than concolor with a pileus like *H. miniata*. In addition, the hyphae in the hymenophoral trama are consistently narrower in *H. subcaespitosa* (LODGE; PEGLER, 1990).

Hygrocybe trinitensis (Dennis) Pegler, Kew Bulletin 32 (2): 306 (1978) (Figure 4A)

Descriptions and illustrations: Pegler and Fiard (1978), Cantrell and Lodge (2001).

Distribution in Brazil: Paraíba (present study), and São Paulo (PEGLER, 1997).

FIGURE 4: (A) *Hygrocybe trinitensis*, (B) *Marasmius crinis-equi*, (C) *Marasmius ferrugineus* var. *gardineri*, (D) *Marasmius* cf. *helvolus*, (E) *Marasmius leoninus*, (F) *Marasmius phaeus*. Scale bar = 2.5 cm.

Specimen examined: BRAZIL, PARAÍBA: Mamanguape, Reserva Biológica Guaribas, 01 August 2009, M.T.M. Figueirêdo 33 (JPB44285).

Comments: *Hygrocybe trinitensis* is minute and bright red. This species lacks cheilocystidia and has a pileus that is cylindric to truncate-parabolic, umbilicate, reaching 10 mm diam., with a scalloped yellow margin (CANTRELL; LODGE, 2001). *Hygrocybe batistae* Singer is similar, but has a larger pileus (to 20 mm diam.) and persistently whitish hymenophore (PEGLER; FIARD, 1978).

Marasmiaceae Rose ex Kuhner

Marasmius crinis-equi F. Muell. ex Kalchbr., in Kalchbrenner, Grevillea 8(48):153 (1880) (Figure 4B)

Description and illustrations: Singer (1976).

Distribution in Brazil: Paraíba (present study), Paraná (MEIJER, 2006), and Santa Catarina (KARSTED; STÜRMER, 2008).

Specimens examined: BRAZIL, PARAÍBA: João Pessoa, Jardim Botânico Benjamim Maranhão, 12 June 2010, A.F. Freitas 32 (JPB48125) , 42 (JPB48129); 09 July 2010, A.F. Freitas 96 (JPB48149); 08 April 2011, A.F. Freitas 193 (JPB48186); Universidade Federal da Paraíba, 03 August 2010, A.F. Freitas 137 (JPB48163); 11 March 2011, A.F. Freitas 168 (JPB48125).

Comments: *Marasmius crinis-equi* belongs to section *Marasmius* subsection *Sicciforme.* This species is characterized by the following: brownish orange to rusty pileus with a sulcate surface; lamellae edges that are concolorous with the pileus; and stipe that grows from black rhizomorphs. *Marasmius crinis-equi* differs from *M. crinis-equi* var. *monocotyledonum* Singer by its shorter spores (7-10 × 3-4 µm in *M. crinis-equi* and 7.7-11 × 3.5-5.1 µm in *M. crinis-equi* var. *monocotyledonum*).

Marasmius ferrugineus* var. *gardneri Singer, Norwegian Journal of Botany 24(2): 223 (1976) (Figure 4C)

Description: Singer (1976).

Distribution in Brazil: Minas Gerais (SINGER, 1976), Paraíba (present study), and Rio de Janeiro (SINGER, 1976).

Specimens examined: BRAZIL, PARAÍBA: João Pessoa: Jardim Botânico Benjamim Maranhão, 23 July 2010, A.F. Freitas 128 (JPB48193); Universidade Federal da Paraíba, 02 July 2010, A.F. Freitas 80 (JPB48142); 29 July 2010, A.F. Freitas 131 (JPB48162); 03 July 2010, A.F. Freitas 141 (JPB48164).

Comments: *Marasmius ferrugineus* var. *gardneri* is placed in section *Sicci* subsection *Siccini* and is characterized by its convex to campanulate orange pileus, white hymenophore, presence of pleurocystidia, and clavate to fusoid spores (15-19 × 3.5-4 µm). *Marasmius persicinus* Desjardin & Horak is similar to *Marasmius ferrugineus* var. *gardneri*, but *M. persicinus* lacks pleurocystidia (DESJARDIN et al., 2000).

Marasmius helvolus Berk., Hooker's Journal of Botany and Kew Garden Miscellany 8: 136 (1856) (Figure 4D)

Description and illustrations: Singer (1965, 1976).

Distribution in Brazil: Amazônia (BERKELEY; CURTIS, 1868; PEGLER, 1988; SACCARDO, 1887; SINGER, 1976), Minas Gerais (ROSA; CAPELARI, 2009), and Paraíba (present study).

Specimens examined: BRAZIL, PARAÍBA: João Pessoa, Jardim Botânico Benjamim Maranhão, 23 July 2010, A.F. Freitas 127 (JPB48159); Universidade Federal da Paraíba, 29 July 2010, A.F. Freitas 130 (JPB48161); 03 August 2010, A.F. Freitas 149 (JPB48170).

Comments: Singer (1976) commented that in *M. helvolus* the cystidia may or may not be present, noting that Brazilian specimens usually have them. Based on the presence of pleurocystidia, Singer included the species in series *Haematocephali*, but he also included the species in the key to series *Leonini* (pleurocystidia absent) (SINGER, 1976; DESJARDIN; OVREBO, 2006).

Marasmius leoninus Berk., Hooker's Journal of Botany and Kew Garden Miscellany 8: 135 (1856) (Figure 4E)

Description and illustrations: Singer (1965; 1976), Pegler (1988).

Distribution in Brazil: Amazonas (BERKELEY, 1856; SINGER, 1976), Minas Gerais, Paraná (ROSA;

CAPELARI, 2009), Paraíba (present study), Rio Grande do Sul (SINGER, 1976), and São Paulo (PEGLER, 1997).

Specimens examined: BRAZIL, PARAÍBA: João Pessoa, Jardim Botânico Benjamim Maranhão, 23 July 2010, A.F. Freitas 126 (JPB48158); Universidade Federal da Paraíba, 18 June 2010, A.F. Freitas 62 (JPB48135); 02 July 2010, A.F. Freitas 84 (JPB48144); 16 July 2010, A.F. Freitas 99 (JPB48150).

Comments: *Marasmius leoninus* belongs to series *Leonini* subsection *Siccini*. This species is characterized by its light to dark orange pileus, fusoid to oblong-ellipsoid spores, and absence of pleurocystidia. The presence of cheilocystidia can vary in this species (SINGER, 1965). *Marasmius bellus* Berk. is very similar to *M. leoninus* but differs by its pileus color and spore size (PUCCINELLI; CAPELARI, 2009).

Marasmius phaeus Berk. & M.A. Curtis, Botanical Journal of the Linnean Society 10: 298 (1869) (Figure 4F)

Description and illustrations: Singer (1965; 1976).

Distribution in Brazil: Minas Gerais (ROSA; CAPELARI, 2009) and Paraíba (present study).

Specimens examined: BRAZIL, PARAÍBA: João Pessoa, Jardim Botânico Benjamim Maranhão, 23 July 2010, A.F. Freitas 113 (JPB48154); 03 August 2010, A.F. Freitas 144 (JPB48166), 146 (JPB48168); 08 April 2011, A.F. Freitas 192 (JPB48185); Universidade Federal da Paraíba, 04 June 2010, A.F. Freitas 26 (JPB48123); 02 July 2010, A.F. Freitas 83 (JPB48143); 18 April 2010, A.F. Freitas 204 (JPB48188), 205 (JPB48189).

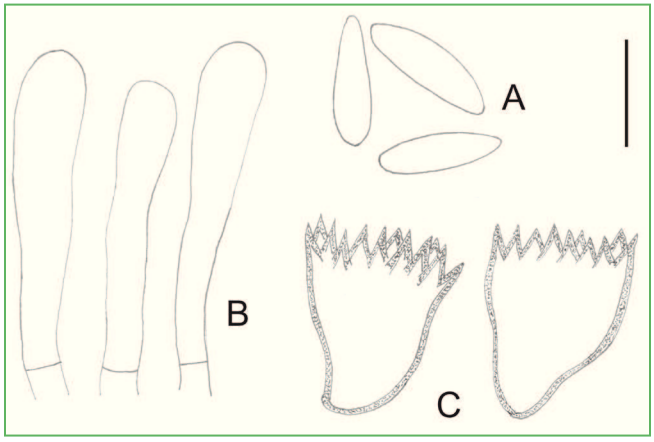
Comments: *Marasmius phaeus* is characterized by its dark orange to reddish-brown pileus with yellowish radial stripes, distant lamellae, rusty stipe, lanceolate to claviform spores, and absence of pleurocystidia. *Marasmius phaeus* resembles *M. tageticolor* Berk., but the later has a darker, blood reddish pileus and acicular to subclavate spores (SINGER, 1976).

#***Marasmius similis*** Berk. & M.A. Curtis, Hooker's Journal of Botany and Kew Garden Miscellany 1: 100 (1849) (Figure 5, 6A)

Pileus 3-4 mm diam., convex to plane-convex, with an umbo in the center, surface white (OAC909), smooth, dry, sulcate towards margin, membranous. *Lamellae* free, not collariate, white, 17-20, distant, lamellulae absent. *Stipe* 10-17 × 0.1-0.3 cm, central, cylindrical, surface smooth, hollow, base dark brown (OAC636), becoming light brown (OAC646) to white at the apex. *Basal mycelium* strigose, light orange (OAC810). Gregarious on angiosperm leaf litter. *Spores* 11-14 × 3-4 µm (Qm=3.92, n/s =20), ellipsoid to fusoid, nonamiloids, hyaline, thin-walled. *Basidia* not observed. *Basidioles* 18-27 × 4-7 µm, clavate to cilindric, 4-sterigmata. *Pleurocystidia* absent. *Cheilocystidia Siccus*-type. *Hymenophoral trama* interwoven, dextrinoid. *Pileipellis* hymeniform composed by *Siccus*-type broom cells, thick walled, pyriform.

Distribution in Brazil: Paraíba (present study).

FIGURE 5: Microstructures of *Marasmius similis*. A-Basidiospores, B-Basidioles, C-Elements Siccus-type of pileipellis. Scale bar=10µm.



Specimens examined: BRAZIL, PARAÍBA: João Pessoa, Jardim Botânico Benjamim Maranhão, 23 July 2010, A.F. Freitas 112 (JPB48153); 10 August 2010, A.F. Freitas 150 (JPB48171), 153 (JPB48172), 158 (JPB48176).

Comments: The morphology fits well with the description of *M. similis*; however, *M. similis* is known from only one collection that was found on twigs in a temperate forest in eastern North America and more specimens from this region need to be collected and studied. *Marasmius similis* belongs to

section *Sicci* subsection *Siccini*. *Marasmius bellus* Berk. is similar but *M. similis* has a larger cream to light yellowish pileus and fusoid spores. *Marasmius cremeus* is almost indistinguishable from *M. similis*, even microscopically, but can be distinguished by its white pileus (WANNATHES et al., 2009).

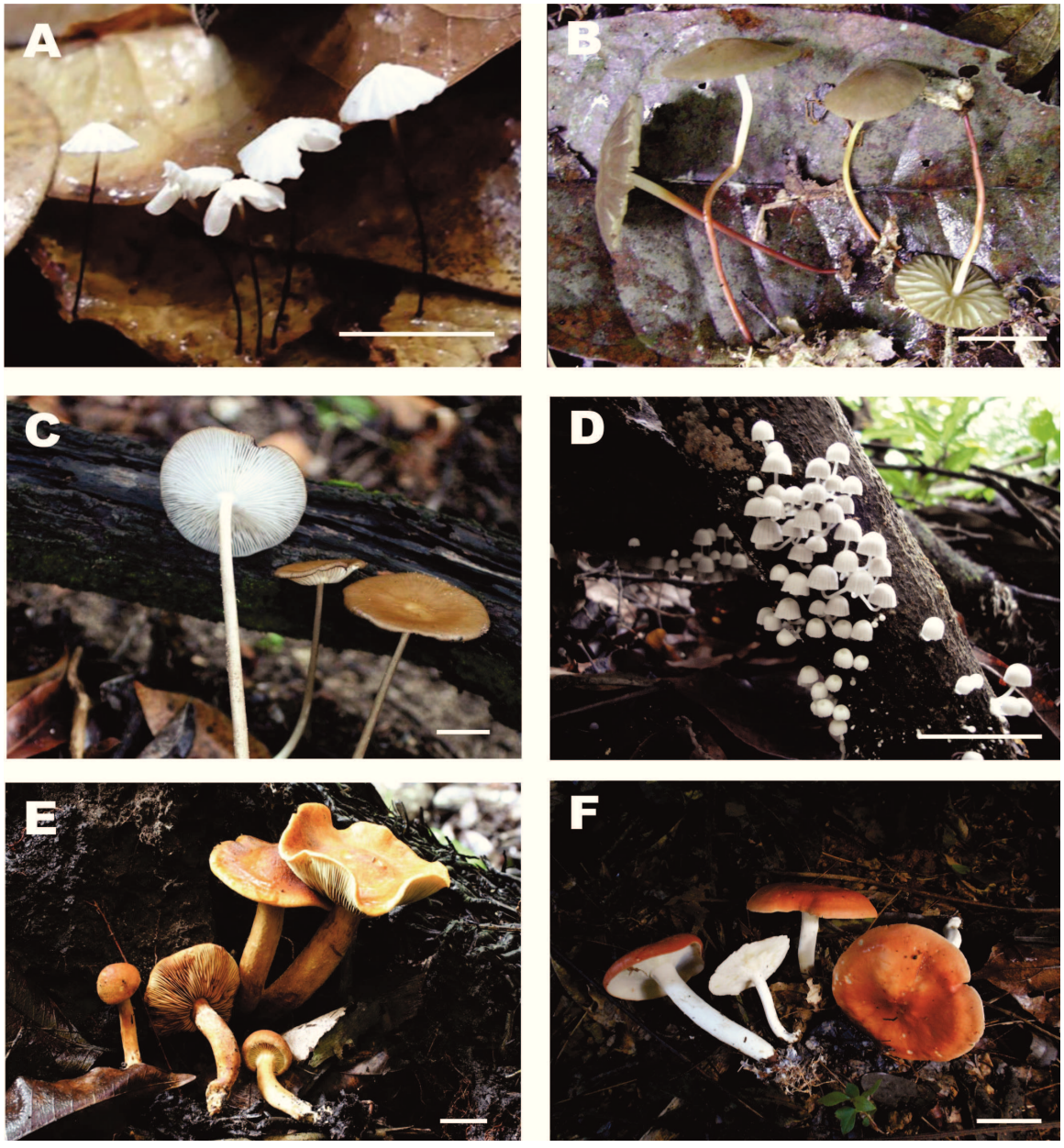
Marasmius trinitatis Dennis, Transactions of the British Mycological Society 34 (4): 425 (1951) (Figure 6B)

Description: Singer (1965).

Distribution in Brazil: Paraíba (present study), Paraná (MEIJER, 2006), and Rio Grande do Sul (SINGER, 1965).

Specimens examined: BRAZIL, PARAÍBA: João Pessoa, Universidade Federal da Paraíba, 18 June 2010, A.F. Freitas 49 (JPB48131), 56 (JPB48133), 64 (JPB48137).

FIGURE 6: (A) *Marasmius similis*, (B) *Marasmius trinitatis*, (C) *Dactylosporina steffenii*, (D) *Coprinellus disseminates*, (E) *Gymnopilus subtropicus*, (F) *Leucopaxillus gracillimus*. Scale bar = 2.5 cm.



Comments: *Marasmius trinitatis* is a common species in the Neotropics and is similar to *M. makok* Wannathes, Desjardin & S. Lumyongand. Both species have an olive green pileus. *Marasmius trinitatis*, however, differs by its campanulate-convex pileus, larger number of lamellae, brownish to fulvous stipe, and smaller basidiospores (SINGER, 1976; WANNATHES et al., 2009).

Physalacriaceae Corner

Dactylosporina steffenii (Rick) Dörfelt, Feddes Repertorium Specierum Novarum Regni Vegetabilis 96: 237 (1985) (Figure 6C)

Description: Capelari and Gugliotta (2005).

Distribution in Brazil: Minas Gerais, Paraíba (present study), Paraná, Pernambuco, Rio Grande do Sul and São Paulo (CAPELARI; GUGLIOTTA, 2005; WARTCHOW et al., 2010).

Specimens examined: BRAZIL, PARAÍBA: João Pessoa, Universidade Federal da Paraíba, 29 April 2010, A.N.M. Furtado 11 (JPB50651); Jardim Botânico Benjamin Maranhão 12 June 2010, A.C. Magnago 225 (JPB50667).

Comments: *Dactylosporina steffenii* and *D. macracantha* (Rick) Dörfelt are closely related species and Singer (1964) points out that the differential character between them is the length of the ornamentations of the spores (1.4-3.5 µm in *D. steffenii* and 3.5-5.5 µm in *D. macracantha*). *Dactylosporina steffenii* also has a slender, longer stipe and larger pileus. Even though both species grow in the tropics, *D. steffenii* is the only one that grows in the subtropics (SINGER, 1964).

Psathyrellaceae Vilgalys, Moncalvo & Redhead

Coprinellus disseminates (Pers.) J.E. Lange, Dansk Botanisk Arkiv 9 (6): 93 (1938) (Figure 6D)

Description and illustrations: Keirle et al. (2004).

Distribution in Brazil: Paraíba (present study), Rio Grande do Sul and São Paulo (PEGLER, 1997).

Specimen examined: BRAZIL, PARAÍBA: João Pessoa, Jardim Botânico Benjamin Maranhão 12 June 2010, A.C. Magnago 230 (JPB50668).

Comments: *Coprinellus disseminatus* is a very common wood decomposer and its deliquescent pileus leads many taxonomists to identify it as *Psathyrella* (Fr.) Quél. or *Coprinus* Pers. However, molecular studies have placed *C. disseminatus* in a well-supported clade with other deliquescent taxa, including *Coprinellus micaceus* (Bull.) Vilgalys, Hopple & Jacq. Johnson (HOPPLE; VILGALYS, 1999). *Coprinellus disseminatus* is commonly confused with *Coprinellus curtus* (Kalchbr.) Vilgalys, Hopple & Jacq. Johnson. Both species grow on wood and form large groups of fragile basidiomes. However, *C. curtus* is brownish red at the center of the pileus and *C. disseminatus* is completely grey.

Strophariaceae Sing. & Smith

Gymnopilus subtropicus Hesler, Mycologia Memoirs 3: 41 (1969) (Figure 6E)

Description: Singer and Gómez (1982).

Distribution in Brazil: Paraíba (present study), Paraná and Rio Grande do Sul (MEIJER, 2006).

Specimen examined: BRASIL, PARAÍBA: João Pessoa, Jardim Botânico Benjamin Maranhão 09 July 2010, A.C. Magnago 246 (JPB50672).

Comments: *Gymnopilus subtropicus* has a yellow-orange to rusty color throughout the basidiome and thin fibrils over the pileus. The basidiomes are robust and resemble *G. junonius* (Fr.) P.D. Orton. However, *G. junonius* has smaller spores with a more persistent, curtain-like veil on the stipe that forms a well-defined ring zone (ARORA, 1986).

Tricholomataceae Roze

Leucopaxillus gracillimus Singer & A.H. Sm., Papers of the Michigan Academy of Sciences 28: 131 (1943) (Figure 6F)

Description and illustrations: Araújo et al. (2011).

Distribution in Brazil: Minas Gerais, Paraná, Pernambuco, Rio Grande do Sul, Santa Catarina (ARAÚJO et al., 2011), and Paraíba (present study).

Specimen examined: BRAZIL, PARAÍBA: João Pessoa, Universidade Federal da Paraíba, 09 March 2010, A.C. Magnago 69 (JPB50662).

Comments: *Leucopaxillus gracillimus* is easily recognized by its dark, orange pileus and whitish hymenophore (PEGLER, 1983). *Leucopaxillus brasiliensis* (Rick) Singer & A.H. Sm. has similar characteristics but can be distinguished by its reddish-brown to brownish-purple pileus, yellowish-orange stem and yellowish hymenophore.

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