



## PSATHYRELLA EUTHYGRAMMA (AGARICALES, BASIDIOMYCOTA), A NEW RECORD FROM BRAZIL

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**Abstract.** Wartchow, F. & A. R. P. Gomes. 2019. *Psathyrella euthygramma* (Agaricales, Basidiomycota), a new record from Brazil. *Darwiniana*, nueva serie 7(1): 187-190.

*Psathyrella euthygramma* is reported for the first time from Brazil, growing on rotting wood in the Atlantic Forest. The diagnostic features are the small basidiomes with stipe bearing a fugacious annulus and densely strigose base, the small basidiospores bearing germ pore and cystidia thin to slightly thick walled.

**Keywords.** Agaricomycetes; Atlantic Forest; Neotropic; Psathyrellaceae.

**Resumen.** Wartchow, F. & A. R. P. Gomes. 2019. *Psathyrella euthygramma* (Agaricales, Basidiomycota), nuevo registro para Brasil. *Darwiniana*, nueva serie 7(1): 187-190.

*Psathyrella euthygramma* es citada por primera vez para Brasil, creciendo sobre madera en descomposición en la Selva Atlántica. Los caracteres diagnósticos son los basidiomas pequeños, el estipe con un anillo fugaz y la base densamente estrigosa, las basidiosporas pequeñas, con poro germinativo y cystidios de paredes finas a ligeramente engrosadas.

**Palabras clave.** Agaricomycetes; Neotrópico; Psathyrellaceae; Selva Atlántica.

### INTRODUCTION

*Psathyrella* (Fr.) Quél. is a huge genus comprising above 600 species with a worldwide distribution (Kirk et al., 2008). However, recent molecular studies refer this genus as polyphyletic on which at least 11 distinct clades among the genus were observed (Padamsee et al., 2008; Örstadius et al., 2015).

Although the high diversity, this genus is poorly known in Brazil and references about this genus is scarce and fragmented. Putzke (1994), the first to account total agarics richness in Brazil, reports only 14 taxa until that date. Many of these taxa were already reported by Rick (1961) from the State of Rio Grande do Sul. Singer (1961, 1989) reported

more species from Amazonas, and Bononi et al. (1981, 1984), Grandi et al. (1984) and Pegler (1997) from São Paulo. Later works recorded more species from the states of Rio Grande do Sul (Cortez & Coelho 2005), Mato Grosso do Sul (Bononi et al. 2008), and Minas Gerais (Rosa & Capelari 2009). Thus, here we report *P. euthygramma* for the first time from the State of Pernambuco, Brazil.

### MATERIAL AND METHODS

The new species was collected in municipality of Igarassu, near of Usina São José (Mata dos Macacos) located in the North coast of State of

Pernambuco (7°40' 7°55'S, 34°54' 35°05'W), where Atlantic Forest is dominant, defined as Lowland Seasonal Semideciduous Forest (De Luna et al., 2016). Microscopic observations were made from material mounted in 3% KOH, Congo red solution and Melzer's reagent. Measurements and statistics are based in 30 spores. Abbreviations include **av.** = average size of basidiospores measured, **Q**= the length: width ratio range as determined from all basidiospores measured, **Qm** = the Q value averaged from all basidiospores measured. Herbarium code follows Thiers (continuously updated, consulted 2019).

## TAXONOMY

***Psathyrella euthygramma*** (Berkeley & M.A. Curtis) Dennis, Kew Bull. 15: 127. 1961.

*Agaricus euthugrammus* Berk. & M.A. Curtis, J. Linn. Soc. 10: 290. 1868.

**Material examined.** Brazil, Pernambuco, Igarassu, Usina São José, Mata dos Macacos, 20-VI-2005, *F. Wartchow* 12/2005 (JPB 63209).

**BASIDIOMATA**, small, fragile, densely gregarious. **PILEUS** 12-24 mm in diam., plane convex, brown (M&P "Stag"), sulcate-striate from the centre, surface glabrous, smooth, dry. **LAMELLAE** adnexed, brown, thin, subclose, with frequent lamellulae. **STIPE** 18-28 × 2-3 mm, central, cylindrical, white to pale grayish, glabrous, except at base that is densely strigose; annulus gracile, fragile, membranous near to pileus, white, soon evanescent. Context very thin, fleshy.

**BASIDIOSPORES** 5-6(-6.5) × 2.5-3.6 µm, **av.** 5.47 × 2.96 µm; **Q** = (1.42-) 1.66-2.40(-2.60), **Qm** = 1.89, elongate-ellipsoid to cylindrical, pale brown in KOH 3%, hilar appendix very indistinct, truncate with a broad germ pore, wall slightly thick. **BASIDIA** 12-15 × 5-6 µm, clavate with two or four sterigmata. **PLEUROCYSTIDIA** 30-42 × 10-13 µm, lageniform to somewhat fusoid, hyaline, thin to slightly thick walled (less than 2 µm thick), with incrustated apex, very common. **CHEILOCYSTIDIA** 20-25(-32) × 7.5-12 µm, ranging from piriform, inflated clavate to fusoid lageniform and utriform, hyaline to very

pale grayish brown, with walls slightly thickened (thinner than pleurocystidia). **PILEIPELLIS** a stratified epithelium with cells 30-47 × 22-35 µm, commonly subglobose, pale grey to almost colorless pigment. **STRIGOSE BASE OF THE STIPE** made of agglomeration of hyphae with parallel orientation presenting clamp connections in all septa.

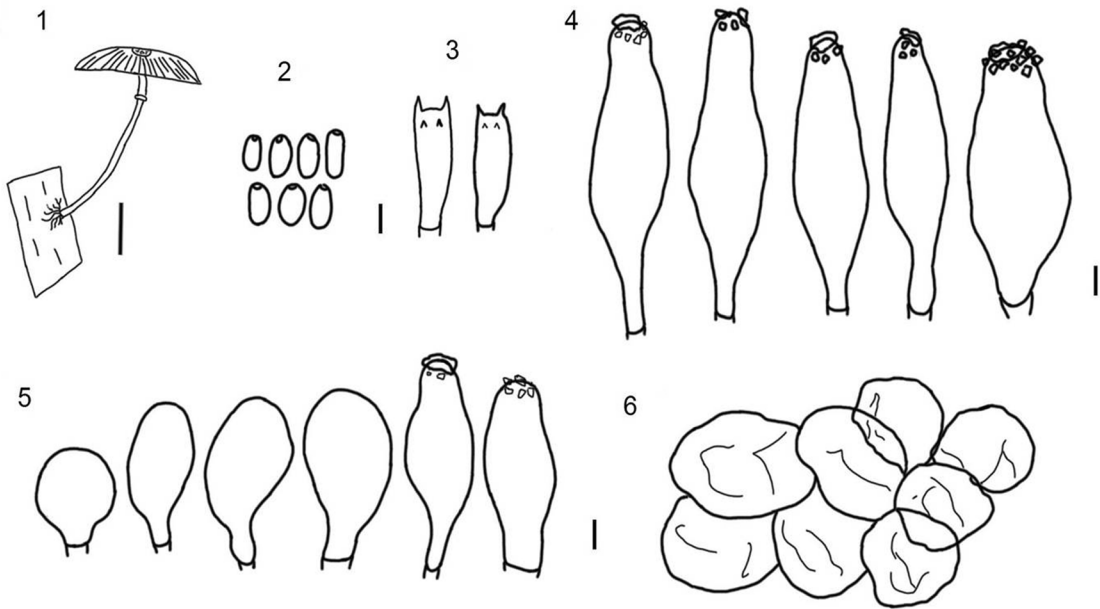
**Known distribution.** Cuba (Berkeley & Curtis 1968), Venezuela (Dennis 1961) and now State of Pernambuco, Brazil.

**Habitat.** gregarious on rotten wood in fragment of tropical rain forest.

## DISCUSSION

*Psathyrella euthygramma* is characterized by its caespitose habit, small and fragile basidiomata, stipe bearing an annulate zone, strigose base bearing thin walled but sometimes thickening to 1.5 µm thick hyphae, and small and narrow basidiospores 5-6 (-6.5) × 2.5-3.6 µm.

Here we consider the species described from Cuba as *Agaricus euthugrammus* Berk. & M.A. Curtis the same entity. It possesses smaller pileus reaching 8 mm in diam. and a filiform stipe that is distinctly strigose at base (Berkeley & Curtis, 1868). Microscopically, Kits van Waveren (1995) found shorter basidiospores 4.5-5 × 3-3.5 µm without germ pore and several thin-walled pleurocystidia and mentioned that Smith's (1972) basidiospores drawings were probably erroneously depicted. Dennis (1961) also did not refer to germ pore in the Venezuelan material of *P. euthygramma*, but he frequently did not cite this feature for almost any species cited by him. Actually, we strongly conclude that our specimens belong to *P. euthygramma*. Although Kits van Waveren (1995) reported the absence of germ pore in the basidiospores of the holotype, is important to mention that the type specimens were described with much smaller pileus diameter (8 mm). Probably the lack of germ pore is due age of the basidiomata, on which only in more mature ones, as occur in Brazilian collection, the germ pore is evident. We consider our collection as mature basing in the size of the basidiomata.



Figs. 1-6. *Psathyrella euthygramma*. 1, Basidioma. Bars = 10 mm. 2, Basidiospores. 3, Basidia. 4, Pleurocystidia. 5, Cheilocystidia. 6, Pileipellis. Bars = 10  $\mu$ m.

The European *P. pygmaea* (Bull.: Fr.) Singer, also can be discussed here, but it is rather distinct from *P. euthygramma* if observing critical macroscopic features: the basionym of *P. pygmaea*, *Agaricus pygmaeus* Bull., was illustrated without any trace of strigose stipe base nor annulus (Bulliard, 1790). Later, Fries (1821) sanctioned *A. pygmaeus* and described it as having fistulous stipe with pubescent base, not exactly strigose base as observed in *P. euthygramma*. Saccardo (1888) reported '*Naucoria (Agaricus) pygmaeus*' as having fistulous and glabrous stipe. Other authors also did not report the strigose stipe base on collections of *P. pygmaea* from Europe (Kits van Waveren, 1985; Breitenbach & Kränzlin, 1995) and East Africa (Pegler, 1977). Basing in the more recent description of *P. pygmaea* from Europe, the basidiospores are distinctly more voluminous  $6-7 \times 3.5-4 \mu$ m, the stipe has not any trace of annular zone and its base is not strigose (Vasutová, 2008). Summarizing, *P. pygmaea* differs from *P. euthygramma* in the lack of annular zone in the stipe, pubescent instead strigose stipe base and the larger basidiospores.

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