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Fungiflora

Studies in Neotropical polypores 41, a new species of *Amylosporus* from Caatinga dry woodlands, Brazil

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Abstract

A new polypore, *Amylosporus auxiliadora*, from Caatinga dry woodlands in Brazil, is described and illustrated and is characterized by eccentrically stipitate basidiomata, 3-6 pores per mm and dextrinoid skeletal hyphae. A key to the *Amylosporus* species is provided.

Key words: russuloid fungi; semiarid region; taxonomy.

Introduction

Amylosporus Ryvarden is characterized by annual or perennial, more or less whitish and resupinate to stipitate basidiomata. Micromorphologically, the genus is characterized by asperulate, small and amyloid bisidiospores and simple septate or multi-clamped generative hyphae (Ryvarden 1991, David & Rajchenberg 1985, 1987, Hattori 2008, Chen et al. 2015). Currently, *Amylosporus* comprises eight species, i.e. *Amylosporus campbellii* (Berk.) Ryvarden (the genus type), *A. succulentus* Jia J. Chen & L.L. Shen, *A. casuarinicola* (Y.C. Dai & B.K. Cui) Y.C. Dai, Jia J. Chen & B.K. Cui, *A. rubellus* (Y.C. Dai) Y.C. Dai, Jia J. Chen & B.K. Cui, *A. iobaphus* (Pat.) A. David & Rajchenb., *A. bracei* (Murrill) A. David & Rajchenb., *A. ryvardenii* Stalpers and *A. efibulatus* (I. Lindblad & Ryvarden) Y.C. Dai, Jia J. Chen & B.K. Cui (Stalpers 1966, Lindblad & Ryvarden 1999, Dai & Cui 2006, Chen & Shen 2014, Chen et al. 2015). In Brazil, only *A. brucei* and *A. campbellii* were recorded as occurring in the southern Brazilian Atlantic Forest (Drechsler-Santos et al. 2008, Baltazar et al. 2009).

During collecting in the Caatinga dry woodlands, a northeastern Brazilian part of the Seasonally Dry Tropical Forests biome - SDTFs (Särkinen et al. 2011), one of us (E.R.D-S) came across two specimens that macro and microscopically resemble the *A. campbellii*. However, they were however, distinctly morphologically different, even after a comparison with other *Amylosporus* species.

Material and Methods

The specimens studied, from Brazilian semi-arid region of Parque Nacional do Catimbau (Buíque, Pernambuco state) and Serra da Jibóia (Santa Teresinha, Bahia state). Both areas are considered into the seasonally dry forest of SDTFs (Särkinen et al. 2011). Macro and microscopic characters were studied and used for identification (Ryvarden 1991). Colours are based on Watling (1969). Microscopic examinations were made from freehand sections mounted in 5% KOH solution and 1% aqueous phloxine solution, reaction (amyloid or dextrinoid) or not were observed in Melzer reagent (Melzer 1924). Microscopic structures were observed and measured in the optical microscopy. Scan-Electron Microscopy (SEM) were used to access the ornamentation pattern of the basidiospores. The specimens are deposited in the URM (URM78878) and HUEFS (HUEFS 61531) herbaria, and with duplicates in the Oslo herbarium (O) (Herbarium codes follow Thiers (2015)).

Taxonomy

Amylosporus auxiliadora Drechsler-Santos & Ryvarden sp. nov. Fig. (1a-g)
Wrightoporiaceae Jülich (Russulales Kreisel ex P.M. Kirk, P.F. Cannon & J.C. David)
Index Fungorum 552272.

Fructificatio pileatae stipitatae, pileus glaber; hymenophorus regulariter porideus, 3-6 per mm; systema hyarum dimiticum, hyphae generativae efibulate, fibulatae et multifibulate, skeleticae dextrinoidea; sporae elipsoidae vel ovoidae, 2.5-4.0 x 4-6.5 µm, tunica laevi, hyalinae, amyloideis. Holotypous URM herbarium (78878) et Isotypous O herbarium conservatur.

Holotype: URM78878; isotype in O. Brazil, Pernambuco State, Parque Nacional do Catimbau, Morro do Cachorro, March 2006, col. J. Ferreira DS1015

Etymology: *auxiliadora*, in honor of Dr. Maria Axiliadora de Queiroz Cavalcanti.

Basidioma annual, pileate, eccentrically stipitate. Pileus orbicular, up to 8.0 × 7.0 × 1.0 cm, solitary, soft to slightly coriaceous when dry; upper surface smooth, buff (52) to clay buff (32); margin sterile, concolours; pores surface buff (52), clay buff (32) to straw, 3-6 per mm, with irregular pores (not round) to lacerate in old portions; tubes concolorous, up to 2.0 mm deep; context homogenous, buff (52), up to 1.3 cm thick at the base; stipe as a contract base of the pileus, buff (52), 2 x 2.5 cm, with poroid portions decurrently, rigid when dry.

Hyphal system dimitic, generative hyphae thin-walled in different size, up to 10 µm wide, simple septate, sometimes septa with single or multiple clamps (verticillate septa

with up to 4 clamps); skeletal hyphae slightly to strongly thick-walled, slightly to dextrinoid, up to 7.0 μm wide, sometimes branched; clamp connections are absent in hymenium; gloeopleural hyphae, hyphal pegs and cystidia not observed.

Basidia 10.0-15.0 \times 6.0-8.0 μm , clavate.

Basidiospores ellipsoid to ovoid, 4.0-5.0 \times 2.5-4.0 μm , hyaline, 1-gutulate, thin-walled, finely asperulate and amyloid in Melzers reagent.

Substrata. The holotype was found in sandy soil with litter of branches in advanced decomposition. The HUEFS exsiccata had no information on the substrate, However an examination of the specimen revealed a mix of clay soil and debris at stipe base.

Distribution. Currently known only from the Brazilian semiarid region, i. e. the type locality at Parque Nacional do Catimbau (Pernambuco state) and Serra da Jibóia (Bahia state).

Examined specimens: Brazil, Bahia State, Santa Terezinha, Serra da Jibóia (12°51'S x 39°28'W), 17 march 2001, col. M.F.O. Marques 004 (HUEFS 61531, as *Wrightoporia* sp.), "Poonah (Pune area, India), India orientalis, D. Campbell", lectotype of *Amylosporus campbellii* (K).

Remarks. The combination of buff to clay buff basidiomata with an eccentrically stipe, 3-6 pores/mm, generative hyphae predominantly with simple septa or with single or multiple clamps and the size of ellipsoid to ovoid, finely asperulate and amyloid basidiospores characterize this species. *Amylosporus campbellii*, despite its similarity with simple and verticillate septa, has additional prominent e and frequently gloeopleurous hyphae. The skeletal hyphae of *A. campbellii* are not dextrinoid and pores are slightly larger, 2-3/mm (Dai 2007), than those of *A. auxiliadora*. *Amylosporus succulentus* has dextrinoid skeletal hyphae too, however presents slighter larger pores (2-4/mm), frequently gloeopleurous hyphae and slightly thick-walled basidiospores (Chen & Shen 2014). Additionally, both species, *A. campbellii* and *A. succulentus*, were originally described from India and China, respectively (Ryvarden 1991, Chen & Shen 2014). In this case, records of *A. campbellii* from Brazilian Atlantic Forest and from other South American ecosystems should be revised in order to confirm if the species in fact occur in the Neotropical region.

Wrightoporia Pouzar and *Amylosporus*, as originally proposed, are morphologically very close (Larsson & Larsson 2003). The concepts of both genera had been debated by some authors (David and Rajchenberg 1985, 1987, Ryvarden 1991) and recently it was demonstrated that the genera are polyphyletic (Chen & Shen 2014, Chen et al. 2015). Several species of *Wrightoporia* were positioned in different clades for which there were proposed, new genera, such as, *Larssoniporia* Y.C. Dai, Jia J. Chen & B.K. Cui, *Pseudowrightoporia* Y.C. Dai, Jia J. Chen & B.K. Cui and *Wrightoporiopsis* Y.C. Dai, Jia J. Chen & B.K. Cui; then *Wrightoporia* s.s., *Amylonotus* Ryvarden and *Amylosporus* were morphologically redefined according to the phylogenetic analyses (Chen et al. 2015). *Wrightoporia* and *Amylosporus* were recovered in the same clade, named Wrightoporiaceae, while other genera were positioned in other clades corresponding to other families. In the proposed system generative hyphae with clamps characterize and distinguish *Amylosporus* from other genera (Chen et al. 2015).

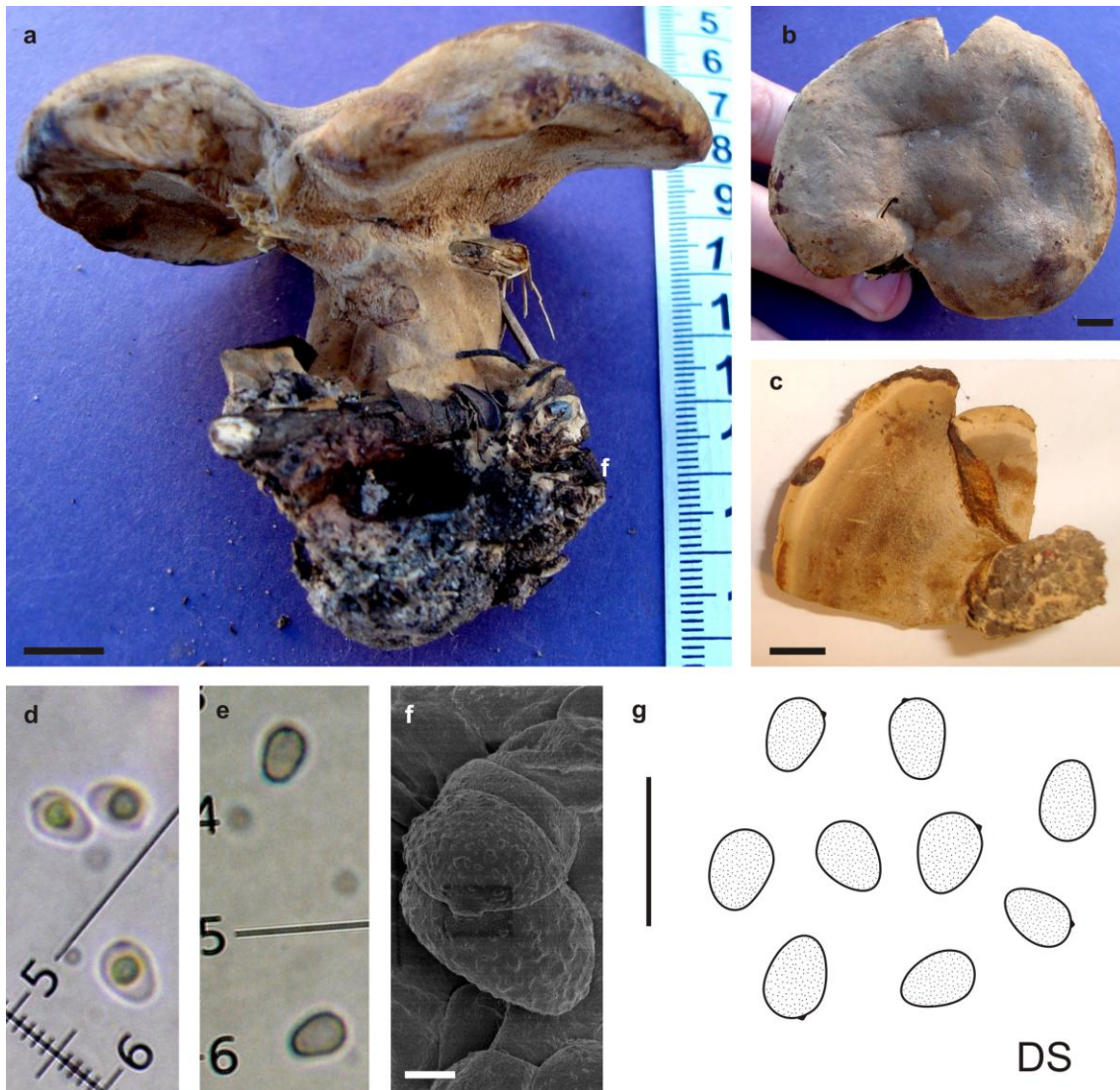


Figure 1. Morphological features of *Amylosporus auxiliadora*: a-c. Basidioma: a. Holotype (URM78878), b. upper surface in detail, c. pores surface in detail (HUEFS 61531), d-g. Basidiospores: d. MO with KOH 5%, e. MO with Melzer reagent, f. SEM showing the finely asperulate ornamentation, g. illustration of ellipsoid to ovoid basidiospores (scales: a, b, c = 1 cm; f = 1 μ m; g = 10 μ m)

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