



Short Communication

Phaeoseptum aquaticum (Halotthiaceae): new record for American continent in a new host for science

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Abstract

Phaeoseptum aquaticum (Ascomycota: Halotthiaceae) described for France, Haute Garonne, Palaminy, in a swamp, on submerged branch of *Robinia pseudoacacia* and at Martres Tolosane, e Moulin, banks of Garonne River, on driftwood of *Salix* sp., is reported as a new record for American continent in Juá village, municipality of Paulo Afonso, Bahia state, northeastern Brazil, colonizing a new host, *Syagrus coronata*, palm tree well suited to dry and arid regions from the Caatinga biome.

Key words: Areaceae, Ascomycota, Caatinga bioma, taxonomy.

Resumo

Phaeoseptum aquaticum (Ascomycota: Halotthiaceae) descrito para a França, Haute Garonne, Palaminy, em um pântano, no ramo submerso de *Robinia pseudoacacia* e em Martres Tolosane, e Moulin, bancos do rio Garonne, em troncos de *Salix* sp., é relatado como um novo registro para o continente americano no Povoado Juá, município de Paulo Afonso, estado da Bahia, nordeste do Brasil, colonizando um novo hospedeiro, *Syagrus coronata*, palmeira bem adaptada às regiões áridas e secas do bioma Caatinga.

Palavras-chave: Areaceae, Ascomycota, bioma da Caatinga, taxonomia.

Syagrus coronata (Mart.) Becc., licuri or ouricury palm tree, is a species typical of the semi-arid northeast that has a clear preference for the dry and arid regions of the caatingas (Noblick 1986). Several parts of *S. coronata* are exploited by people in the semi-arid of Bahia for the manufacture of objects that are sold, playing an important role in the local subsistence economy (Crepaldi *et al.* 2004).

The palm tree *S. coronata* also presents great ecological value, representing a source of resources for the native fauna, especially in the Caatinga domain. The licuri is the main food for the maintenance and growth of the native population of the bird *Anodorhynchus leari* Bonaparte 1858, the blue-eared macaw. Endemic bird of the Caatinga that is extremely endangered (Rocha 2005).

Systematic surveys of the mycota colonizing *S. coronata* (licuri) are still scarce. In the Brazilian northeast, stand out the works of Santos *et al.* (2016) that registered some species of Ascomycota on licuri in areas of Caatinga in the semi-arid region of Bahia and Cruz and Gusmão (2009) where three conidial fungi are documented on the same host.

Phaeoseptum Y. Zhang, J. Fourn. & K.D. Hyde is a genus monotypic with ascomata immersed under pseudoclypeus, scattered to gregarious, depressed globose, papillate, ostiolate. Pseudoparaphyses narrowly cellular, belonging to Halotthiaceae family. Asci 8-spored, bitunicate, cylindrical-clavate, with a small ocular chamber and apical ring best seen in immature asci. Ascospores fusiform, slightly curved, dictyosporous with

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thickened septa. This genera was introduced to accommodate a freshwater taxon (Zhang *et al.* 2013), *Phaeoseptum aquaticum* Y. Zhang, J. Fourn. & K.D. Hyde.

Haloththiaceae was described to accommodate four aquatic genera: *Phaeoseptum*, *Haloththia* Kohlm., *Mauritiana* Poonyth, K.D. Hyde, Aptroot & Peeraly, and *Pontoporeia* Kohlm. *Phaeoseptum aquaticum* was described for France in this work it was found on dried petioles in decomposition of *S. coronata* still attached to the plant, during a recent mycological search of Pezizomycotina (Ascomycota) on palms tree in Caatinga biome, Brazil.

Dried petioles in decomposition of *S. coronata* attached to the plant were collected in March 2016 in the Juá village, municipality of Paulo Afonso, Bahia (BA) states. Identification work was carried out in the Science Laboratory of the State University of Bahia (UNEB), Campus VIII. The signs of the fungi on surface of the host were examined under a stereoscopic microscope (Carl Zeiss). Posteriorly the fungal structures were mounted with lacto-glycerol cotton blue, Melzer reagent and water. Furthermore, permanent slides with PVL resin (polyvinyl alcohol + lactophenol) were made. Slides and the specimens were deposited in the URM Herbarium of the Federal University of Pernambuco (UFPE), Recife, Brazil. Examination of the microscopic preparations allowed the morphological characterization of the fungal structures which were measured with the aid of an ocular micrometer. Photomicrographs were taken using a digital camera (Sony W830), adjusted to the eyepieces of the microscope and the stereoscope.

Phaeoseptum aquaticum Ying Zhang, J. Fourn. & K.D. Hyde, in Zhang, Fournier, Phookamsak, Bahkali & Hyde, *Mycologia* 105(3): 606 (2013). Fig. 1a-i

Ascomata immersed, scattered to gregarious, developing beneath black, raised, soft, papillate dome shaped areas on the host surface. Ascomata 300–395 × 422,5–425 µm in section, subglobose, ostiolate; peridium 20–27.5 µm thick, pseudoparenchymatous. Hamathecium of cellular pseudoparaphyses, 2.5–3 µm broad, septate, anastomosing. Asci 112.5–137.5 × 20–22.5 µm, 8-spored, bitunicate, cylindrical-clavate, pedicel well defined; ocular chamber small and truncate, ascus apex thickened. Ascospores 25–32.5 × 10–12.5 µm, dictyosporous, initially pale-brown, becoming heavily pigmented at maturity, smooth walled, uniseriate at base and overlapping triseriate at apex, broadly fusoid with broadly rounded ends, slightly curved, 9–12-transversally septate, end cells usually larger than others, with a vertical septum in nearly all cells.

The species distribution are France (Zhang *et al.* 2013), and Brazil (this paper).

The known hosts are *Robinia pseudoacacia* L. (Fabaceae), *Salix* sp. (Flacourtiaceae) and *Syagrus coronata* (Arecaceae, this paper).

Material examined: BRAZIL. BAHIA: Juá village, Paulo Afonso, on dried petiole in decomposition of *S. coronata* attached to the plant, 9°25.893'S, 38°25.449'W, 380 m, 31.III.2016, *Maiara A.L.S.* (URM 90190).

The specimen found is similar in ascomata, ascus and ascospores morphology to *P. aquaticum* (Zhang *et al.* 2013) and the material examined is

Table 1 – Morphology comparison of *Phaeoseptum aquaticum* (Zhang *et al.* 2013) with material this study.

	(Zhang <i>et al.</i> 2013)		(This study)	
	Shaped	Measurements	Shaped	Measurements
Ascomata	depressed spherical, immersed	300–400 × 400–600 µm	subglobose to depressed spherical, immersed	300–395 × 422,5–425 µm
Ascus	cylindrical-clavate	135–190 × 19–25 µm	cylindrical-clavate	112.5–137.5 × 20–22.5 µm
Ascospores	broadly fusoid and broadly rounded	30.5–38 × 9.5–12 µm	broadly fusoid and broadly rounded	25–32.5 × 10–12.5 µm
Number of transversalsepta	9–13(–16)		9–12	

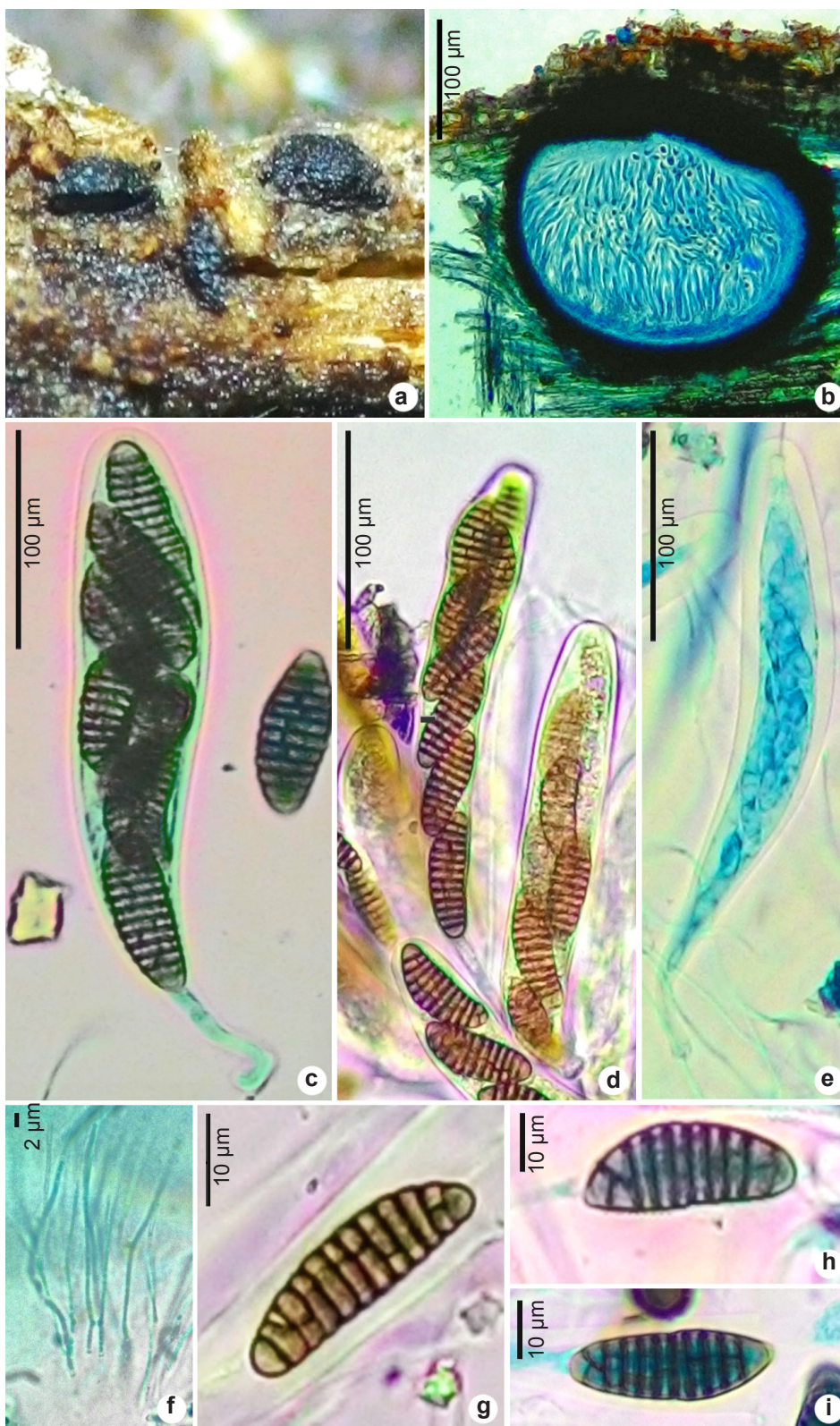


Figure 1 – *Phaeoseptum aquaticum* – a. ascomas na superfície do hospedeiro; b. ascoma em section vertical; c-d. asci mature; e. asci immature; f. pseudoparaphyses; g-i. ascospores. Source: Santos MAL.

compared with the original description in Table 1. *Phaeoseptum aquaticum* was collected once during this study. It was not possible to perform the isolation of the fungus due to the scarcity of the material. Additional collections are necessary to isolate this species in pure culture and make the molecular characterization of it. In this work, *P. aquaticum* on a new host for science is described and illustrated.

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