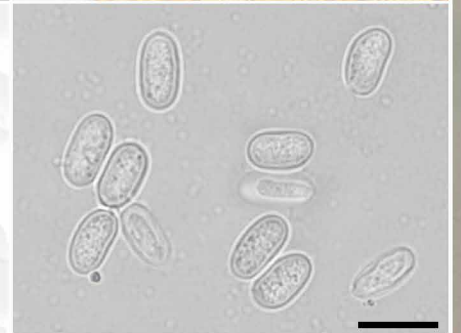
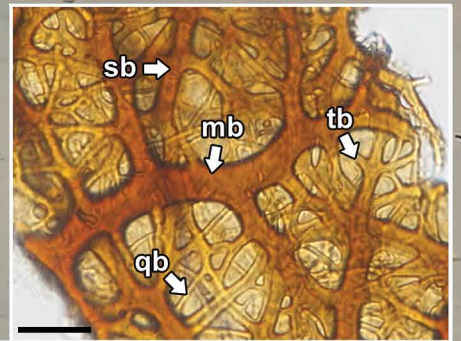
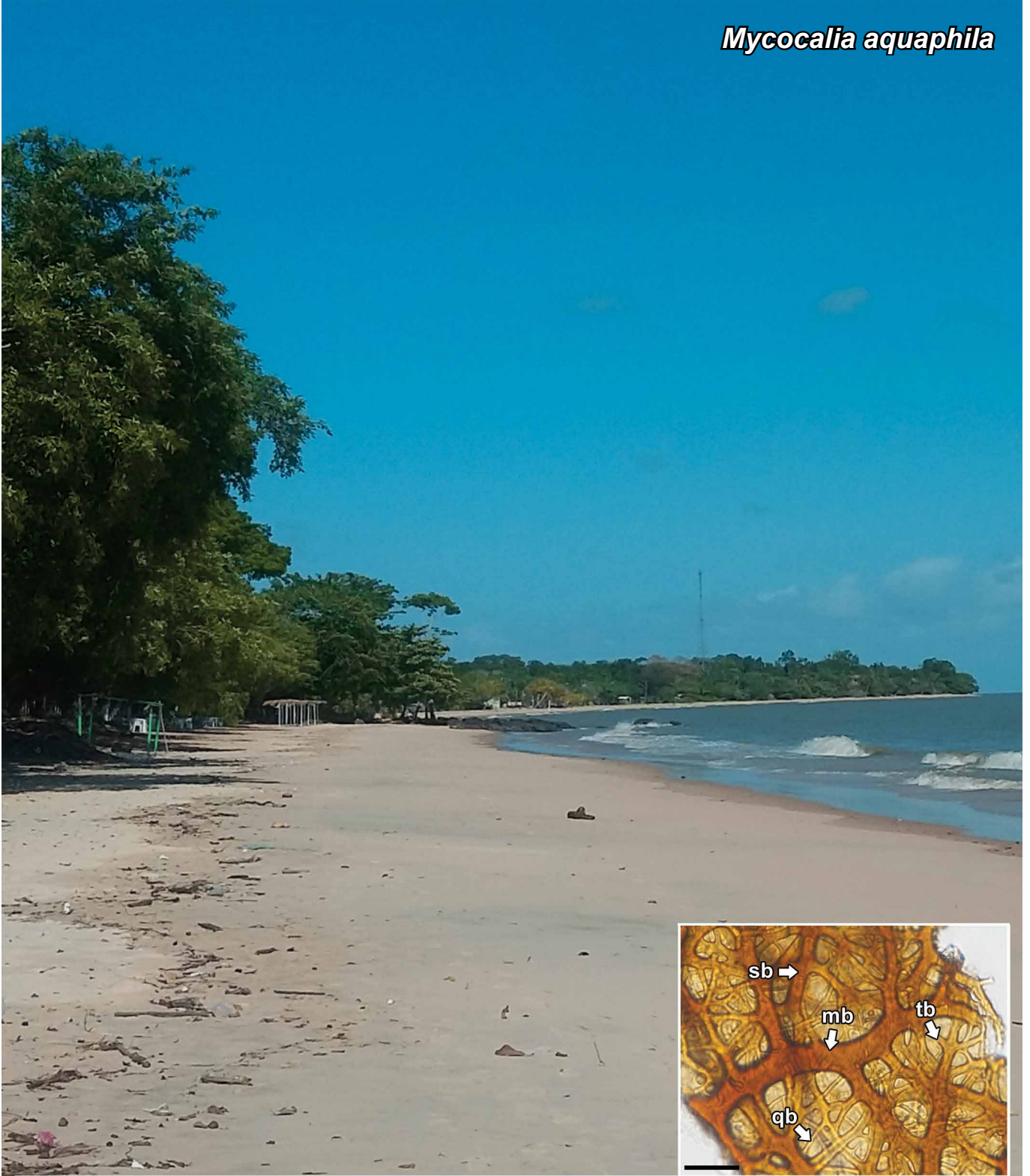


*Mycocalia aquaphila*



Fungal Planet 743 – 13 July 2018

***Mycocalia aquaphila* R. Cruz, L.T. Carmo, M.P. Martín, Gusmão & Baseia, sp. nov.**

*Etymology.* Named in reference to the submerged substrate where it was found growing, on decaying wood coming from the tidal detritus.

*Classification* — *Nidulariaceae*, *Agaricales*, *Agaricomycetes*.

*Basidiomata* globose to subglobose, 1.1–1.5 mm height × 1.4–2.2 mm width, covered by a thin whitish peridium when young. *Peridioles* dark brown (7F3; Korerup & Wanscher 1978), 0.5–0.7 × 0.5–0.6 mm, angular, circular or irregular in shape, with smooth to slightly rugose surface, 0.1–0.2 mm thick. *Cortex* 1-layered, reticulate with brownish hyphal branches, main branch 6–9.5 µm thick, secondary branches 4–6 µm thick, tertiary branches 2.5–4.5 µm thick, quaternary branches 1.5–2 µm thick, gleba dark greyish brown, and intermediate layer spongy, bronze. *Basidiospores* smooth, hyaline, (6.5–)7.5–10.5 × 4–5.5 µm (L = 8.8 µm; W = 4.9 µm; n = 30 spores), ellipsoid to cylindrical, rarely slightly ellipsoid (Q = (1.30–)1.54–2.26), elongated on average (Q<sub>m</sub> = 1.82), apicule absent and spore wall 0.5–1 µm thick.

*Typus.* BRAZIL, Pará, Belém, Mosqueiro Island, Marahú Beach, S01°04'24.4" W48°24'00.4", solitaire to gregarious on decaying wood from tidal detritus, 7 Apr. 2017, L.T. Carmo (holotype UFRN-Fungos 2944, isotype HUEFS 234860, ITS and LSU sequences GenBank MG836281 and MG836282, MycoBank 823882).

*Additional material examined.* HUEFS 234861.

*Notes* — Among the bird's nest fungi, *Mycocalia* is one of the genera least reported by researchers (Brodie 1975), and much of it is due to the fact that their species had been described as *Nidularia* until the proposition of *Mycocalia* by Palmer (1961). All new species identifications, five in total, excluding synonyms, occurred in the first half of the 1960s, and no new species had been proposed since *Mycocalia sphagnetii* (Cejp & Palmer 1963). Together with *M. denudata* and *M. reticulata*, the new species *M. aquaphila* is one of the few taxa of the genus reported for South America, and the first described and recorded exclusively in Brazil. The new species shows a basidiome covered by a thin and whitish peridium during the initial development; dark brown peridioles, single

layered cortex in a reticulated pattern; and hyaline, ellipsoid to cylindrical spores, 7.5–10.5 × 4–5.5 µm. Comparing it with the species that occur in South America, *M. denudata* differs from the new species in the presence of an ephemeral yellowish white peridium (thin but almost persistent, and white in young basidiomata of *M. aquaphila*), peridioles connected in a hyaline gelatinous mass, provided with double layered cortex (single layered in *M. aquaphila*), besides the 7.5 × 5 µm spores. The species *M. reticulata* presents the same reticular pattern of cortex as *M. aquaphila*, but differs in the yellowish brown to pale brown peridiole, thick spore wall (without values defined in the literature), and the main reticulum hyphae branch up to 20 µm in thickness (6–9.5 µm in *M. aquaphila*). A species of the genus that grows in submerged substrates is *M. minutissima*, recorded on submerged leaves of *Juncus effuses*, but *M. minutissima* is distinguished from other *Mycocalia* species by having a double layered cortex and smaller spores (6 × 4 µm). However, Brodie (1975) considered that it may represent an aberrant uniperidiolar variation of some multiperidiolar species, probably *M. denudata*. From the other species of *Mycocalia*, *M. aquaphila* is distinguished by the following characteristics (Brodie 1975): *M. duriaeana* presents dark blood-red to black peridioles, 0.3 mm diam, and spores of 7 × 5.5 µm; *M. sphagnetii* shows a white peridium, initially woolly and later smooth, cortex in labyrinthiform pattern, and pale yellowish brown spores, 13 × 5.5 µm, presenting small droplets of oil inside the spores.

The species with legitimated names in MycoBank, *M. arundinaceae* (MycoBank MB334666) and *M. fusispora* (MycoBank MB334669) were not compared because, according to Cejp & Palmer (1963), they were synonymised under the name *M. denudata*.

*Mycocalia aquaphila* is the first species of this genus proposed since the 1960s. The ITS sequence obtained in this study has 93 % similarity to the only ITS *Mycocalia* sequence available in GenBank (DQ911596 under *M. denudata*). Moreover, as mentioned above, morphological characters are enough to separate *M. aquaphila* from the already known species.

*Colour illustrations.* Brazil, environment near the locality where the type species was collected on Marahú Beach, Mosqueiro Island; young basidiomata covered by a thin whitish peridium (scale bar = 1 mm); upper view of isolated peridioles (scale bar = 1 mm); spores (scale bar = 10 µm); reticulated cortex, showing the main branch (mb), secondary branches (sb), tertiary branches (tb) and quaternary branches (qb) (scale bar = 20 µm) (all: UFRN-Fungos 2944, holotype).

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