

The new lichen species *Micarea corallothallina* from Serra da Jibóia, an Atlantic rainforest enclave in Bahia, NE Brazil

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Abstract: The new species *Micarea corallothallina* is described from Serra da Jibóia, Bahia, NE Brazil. It has a gnarled, coralloid, isidiose thallus and pale botryose apothecia. It was found in the Serra da Jibóia, a mountainous range with a maximum elevation of 800 m on smooth bark of trees. This Mata Atlântica fragment is located in the Santa Terezinha municipality, Bahia, NE Brazil, near the Castro Alves municipality boundary. This area can be considered as a rainforest enclave surrounded by Caatinga, and belongs to a disjunct set of mountains that extend from the southern coast of the state to the North-west and North.

Key words: isidia, Mata Atlântica, new species, *Pilocarpaceae*, taxonomy

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Introduction

The Atlantic rainforest, or Mata Atlântica, despite centuries of deforestation and destruction, still harbours the highest biodiversity per hectare of any tropical rainforests on the planet (Conti & Furlan 2003). The Serra da Jibóia is a mountain range with a maximum elevation of 800 m, in a transitional area between Atlantic forest and Caatinga vegetation, which is a drier and more open forest type.

This Mata Atlântica fragment is located in the Santa Terezinha municipality, Bahia, NE Brazil, near the Castro Alves municipality boundary. This area can be considered a rainforest enclave surrounded by Caatinga, and belongs to a disjunct set of mountains that extends from the southern coast of the state to the north-west and north until the Baía de Todos os Santos region (Queiroz *et al.* 1996).

Within the framework of a recent survey of lichens in rainforest enclaves in areas of Caatinga throughout north-eastern Brazil, an undescribed species of *Micarea* was found and is described below as new to science.

The genus *Micarea* in the family *Pilocarpaceae* is still incompletely known, with *c.* 90 known species worldwide (Coppins 2009). The new *Micarea* species differs from all species known so far in the genus by the irregularly-branched isidioid structure of the thallus and the aggregated ascomata with curved, mostly 1-septate ascospores.

Material and Methods

Identification and descriptive work was carried out in Itabaiana, Universidade Federal de Sergipe, using a Leica EZ4 stereomicroscope and a Leica DM500 compound microscope, and also in Soest using an Olympus SZX7 stereomicroscope and an Olympus BX50 compound microscope with interference contrast, connected to a Nikon Coolpix digital camera. Sections were mounted in tap water, on which all measurements were taken. The specimen from this study is preserved in ISE. The chemistry of the type specimen was investigated by thin-layer chromatography (TLC) using solvent A (Orange *et al.* 2001).

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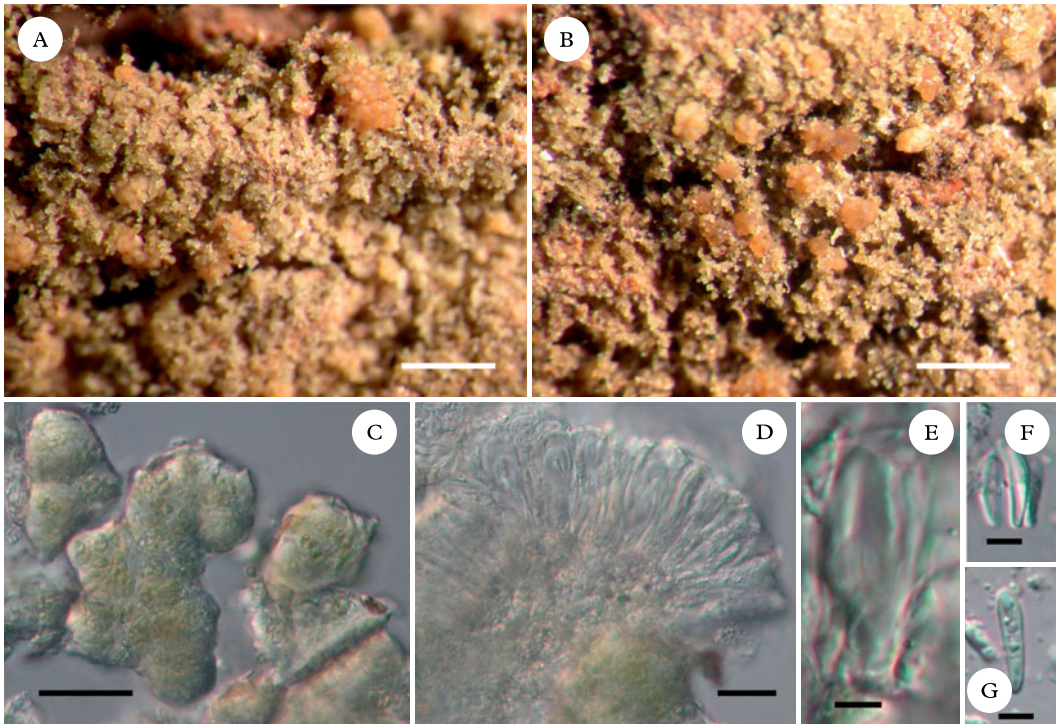


FIG. 1. *Micarea corallothallina* (holotype). A & B, habitus; C, isidioid thallus granules; D, section through ascoma; E, ascus; F & G, ascospores. Scales: A & B = 1 mm; C = 50 µm; D = 10 µm; E–G = 5 µm. In colour online.

The Species

Micarea corallothallina M. Cáceres, D. A. Mota & Aptroot sp. nov.

MycoBank No.: MB 801124

Micarea with an irregularly-branched isidioid structure of the thallus and aggregated botryose ascomata with curved, mostly 1-septate ascospores. Thallus and apothecia are devoid of pigment, and no lichen substances are present.

Type: Brazil, Bahia, Santa Teresinha, Serra da Jobóia, on bark of tree, c. 700 m alt., September 2010, M. E. S. Cáceres 7886 (ISE—holotype).

(Fig. 1)

Thallus 0.2–0.4 mm thick, dull, consisting of isolated, irregularly densely branched isidioid green granules of c. 50 µm thick (proliferating goniocysts somewhat like blastidia), with a hyaline cortex. *Algae* myrmecioid, c. 3–5 µm diam.

Apothecia appressed, initially between the thallus granules, later often emergent, up to 0.2 mm diam., usually aggregated in botryose groups of 2–25, forming clusters of up to 1.2 mm diam.; *disc* globose, pale yellowish. *Hymenium* hyaline, 25–35 µm high, paraphyses glued and sparse; *hypothecium* hyaline; *excipulum* inconspicuous. *Ascus* with 8 ascospores, arranged in 2 loose bundles. *Ascospores* hyaline, curved, (0–)1-septate, 15–17 × 3.0–3.5 µm, with rounded ends.

Pycnidia not observed.

Chemistry. Thallus and apothecia UV–, C–, K–, KC–, P–. No pigments visible and no lichen substances detected with TLC.

Ecology and distribution. On smooth bark of trees in primary forest. Known only from Brazil.

Discussion. The thallus of this species is very unusual, both in and outside the genus because of its irregularly branched, nodular isidioid structure and the aggregated (botryose) ascomata. Species of the genus *Micarea* occur in all biospheres including wet lowland tropics, but most species described so far are from temperate or arctic/alpine environments. The new species probably belongs in the *Micarea prasina* group, members of which can have an isidioid thallus (Coppins 1983, p. 175; Czarnota 2007, p. 100), as well as botryose (tuberculate) apothecia, and 0–1-septate ascospores. However, most members of the group have the green-grey, K+ violet pigment, Sedifolia-grey, as well as lichen substances in the thallus and/or apothecia. Somewhat similar to the new species is *Micarea levicula* (Nyl.) Coppins from Cuba, but that species has a C+ red thallus (containing gyrophoric acid) and smaller ascospores, 8–12 × 2.5–3.5 µm (van den Boom & Coppins 2001). In addition, some morphs of *Micarea micrococca* can become isidiose, but that species also has smaller ascospores, and contains methoxymicareic acid (Czarnota & Guzew-Krzemińska 2010).

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