

A new *Eugeniella* from a small Atlantic rainforest remnant in Sergipe, NE Brazil

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Abstract: The new species *Eugeniella nigrodisca* is described from Fazenda Cafuz, Serra de Itabaiana, Sergipe, NE Brazil, where it was found on bark. It is characterized by the clavate, consistently 7-septate ascospores.

Key words: Fazenda Cafuz, lichen, Mata Atlântica, *Pilocarpaceae*, Serra de Itabaiana, taxonomy

Accepted for publication 18 October 2012

Introduction

Sergipe is the smallest state in Brazil, and its coast was originally covered by the Atlantic rainforest, or Mata Atlântica. Today, only scattered forest patches still remain untouched in a few conservation units throughout the state, although most are part of private properties. These small Mata Atlântica fragments are located in the coastal zone of Sergipe, comprising a range of only *c.* 40 km wide, and are surrounded by sugar cane plantations. In spite of the reduced amount and size of natural areas in the state, a few recent lichen inventories in Sergipe have revealed a surprisingly rich and until now unknown lichen diversity (Cáceres 2007).

The Serra de Itabaiana, with *c.* 3 400 ha and an altitude range of 195–680 m, is located between the municipalities of Areia Branca and Itabaiana (Mendes *et al.* 2010), in the mesoregion of the Agreste, and comprises three geomorphological units: the ridges Cajueiro, Comprida and Itabaiana (Carvalho & Vilar 2005).

During a lichen survey in forest remnants around the Serra de Itabaiana National Park, an undescribed species of the genus *Eugeniella* was found in a forest patch from Fazenda Cafuz, a private property which still preserves part of the original Mata Atlântica cover.

The genus *Eugeniella* in the family *Pilocarpaceae* was recently described to accommodate a few species with an excipulum which is composed of large, moniliform hyphae with constricted septa, densely incrustated with minute hyaline crystals, and mostly unbranched paraphyses. The genus is still incompletely known, with only seven species worldwide (Lücking 2008). Two further undescribed species were reported from St Helena (Aptroot 2008) and Costa Rica (Lücking 2008). Further *Eugeniella* species may well have been originally described in the genus *Bacidia* (Lücking 2008).

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, in which all measurements were also taken. The specimens from this study are preserved in ISE.

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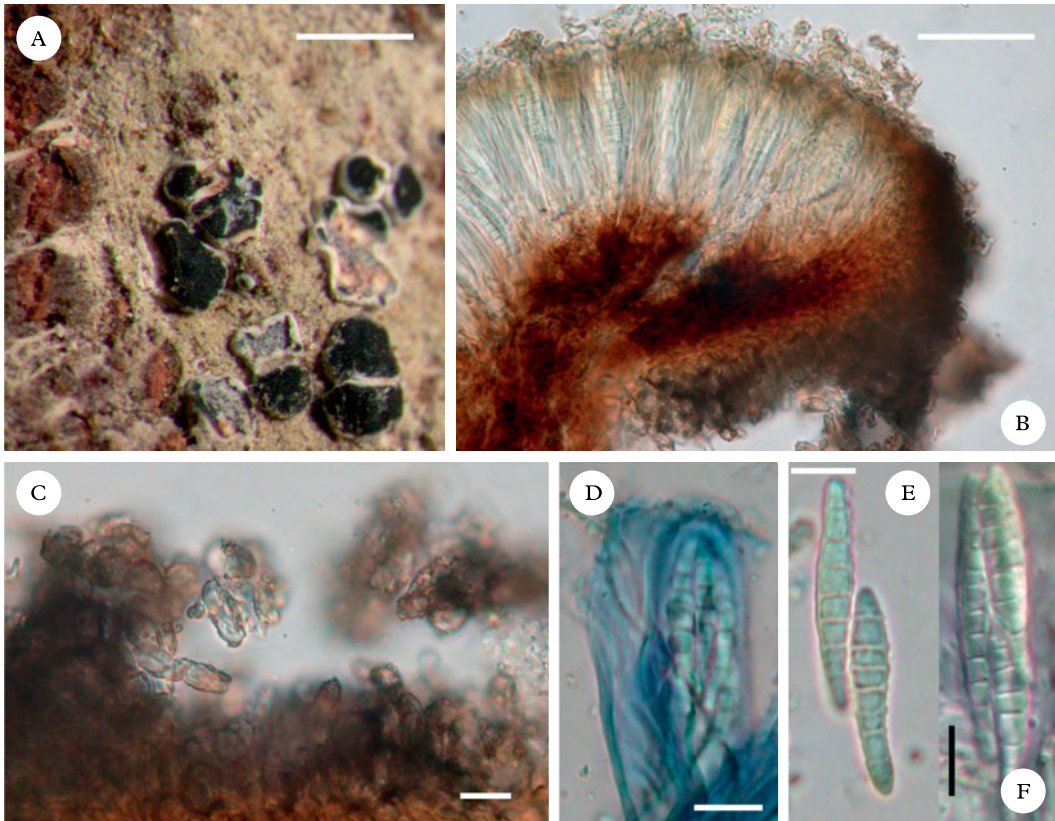


FIG. 1. *Eugeniella nigrodisca* (holotype). A, habitus; B, section through apothecium margin; C, excipulum showing moniliform hyphae; D, ascus (in IKI); E & F, ascospores. Scales: A = 1 mm; B = 50 μ m; C–F = 10 μ m. In colour online.

The chemistry of the type specimen was investigated by thin-layer chromatography (TLC) using solvent A (Orange *et al.* 2001).

The Species

Eugeniella nigrodisca M. Cáceres, D. S. Andrade & Aptroot sp. nov.

MycoBank No.: MB 801121

Eugeniella differing from *E. ortizii* by the clavate, consistently 7-septate ascospores of $25\text{--}42 \times 2.5\text{--}5.0 \mu\text{m}$ and the occurrence on bark.

Type: Brazil, Sergipe, Areia Branca, Fazenda Cafuz, on bark of tree, c. 340 m alt., 8 November 2011, M. E. S. Cáceres & D. S. Andrade 10177 (ISE—holotype).

(Fig. 1)

Thallus thin, not corticate, dull, starting as isolated granules of c. 50 μ m, soon aggregating to form a nearly continuous greenish grey crust on a thin whitish byssoid hypothallus, greenish grey. *Algal cells* green, c. 7 μ m diam.

Apothecia sessile, 0.2–0.6 mm diam., round to mostly lobate when older; *disc* flat, dull, deep yet black, margin white, dull, crenate, c. 0.1 mm wide. *Hymenium* hyaline, IKI+ blue, 60–75 μ m high; *paraphyses* only branched in the epihymenium; *hypothecium* blackish brown, in the centre of the apothecium up to 50 μ m high, tapering out to the periphery; *excipulum* hyaline, 20–35 μ m wide, composed of large (cells $7\text{--}12 \times 4.5\text{--}5.5 \mu\text{m}$), moniliform hyphae with constricted septa, densely incrustated with minute hyaline

crystals. *Ascus* containing 8 ascospores, tip in IKI with two layers of dense staining. *Ascospores* hyaline, clavate, consistently 7-septate, $25\text{--}42 \times 2.5\text{--}5.0 \mu\text{m}$, lower end attenuated but tips rounded.

Pycnidia not observed.

Chemistry. Thallus UV–, C–, K–, KC–, P–. No substances detected with TLC.

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

Discussion. The characteristic excipulum of the genus, which is composed of large, moniliform hyphae with constricted septa, is illustrated here for the first time. The new species is not identical with any of the known species of *Eugeniella* and seems to differ from all species described from Brazil in the similar genus *Bacidia* by Ekman (1996), Malme (1935) and Vainio (1890). Most *Eugeniella* species known so far have either submuriform or 3-septate ascospores. *Eugeniella ortizii* (Lücking) Lücking *et al.* has ascospores of $17\text{--}26 \times 4.5\text{--}5.5 \mu\text{m}$ with (3–)5–7 septa (Lücking 2008). The new species described here has larger ascospores that are consistently 7-septate.

The CNPq [Conselho Nacional de Desenvolvimento Científico e Tecnológico (Process 501633/2009-0)] is thanked for a research grant to the first author. The Uni-

versidade Federal de Sergipe is thanked for a student research scholarship to DSA and GKO. Leo Spier is thanked for performing thin-layer chromatography. AA is grateful to the Stichting Hugo-de Vries-Fonds for a travel grant.

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