

A new lichen species from New Guinea, *Eugeniella sorediata*

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Abstract. A new species from Papua New Guinea, collected during a lichenological expedition in 1992, is described as *Eugeniella sorediata*, new to science. Beside taxonomy, notes on chemistry and ecology are given.

Key words: biodiversity, foliicolous, new species, tropical lichen

Introduction

During a lichenological expedition to Papua New Guinea in 1992, some 3,000 specimens of lichens and lichenicolous fungi were collected. Of some 500 recognized species (database of herbarium B), soon after the expedition, in the first publication, 89 turned out to be new species (Aptroot et al. 1997). Numerous specimens are still incompletely identified. We found out that one of these belongs in the genus *Eugeniella*. It differs from the known species by the 1-septate ascospores and white soralia. Both characters have not been found in the genus so far. *Eugeniella* is mainly tropical and mostly foliicolous. A key to the known species is published in Breuss & Lücking (2015).

Materials and methods

The specimen has been studied by conventional macro- and microscopical techniques with hand-cut sections or with a Reichert-Jung Cryostat 2800 Frigocut E microtome and studied with an Olympus BX60 microscope. Spores were measured outside the asci, mounted in tap water, using a compound microscope (Olympus BH2 and Olympus CX41). Amyloid reactions were tested using Lugol's iodine solution (K/I). The morphology of the specimen was investigated by stereomicroscope (Wild M7 and Optika with a Ricoh camera). The chemistry of the sample was investigated by TLC, using solvent systems C (Orange 2010) and HPLC. The holotype specimen is stored in the herbarium of Berlin (B). The isotype specimen is stored in the herbarium of Meise (BR).

Taxonomy

Eugeniella sorediata van den Boom & Sipman, sp. nov.
(Figs 1, 2)

Mycobank MB 859524

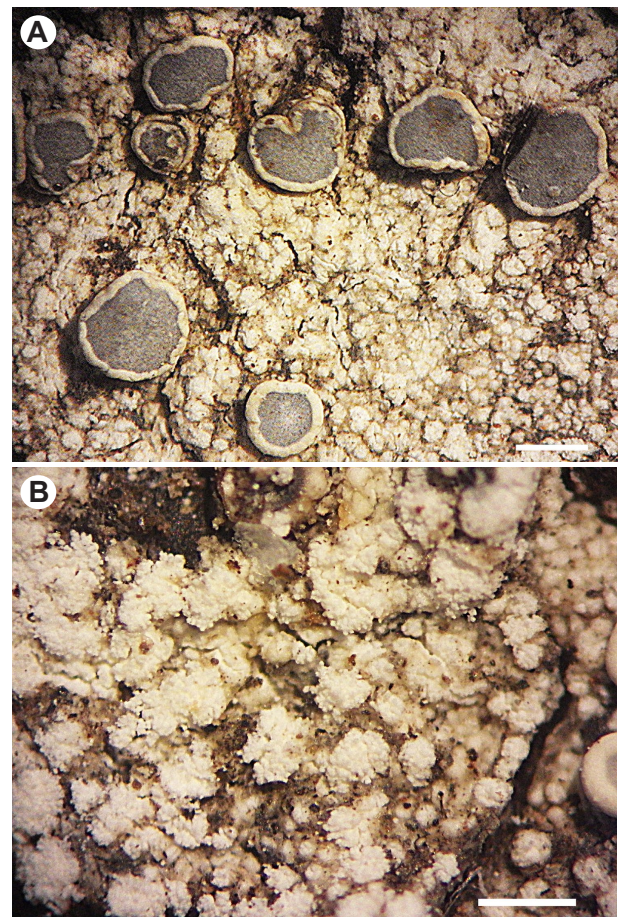


Figure 1. *Eugeniella sorediata*, holotype. A – apothecia; B – soralia. Scales: A = 0.5 mm; B = 1 mm.

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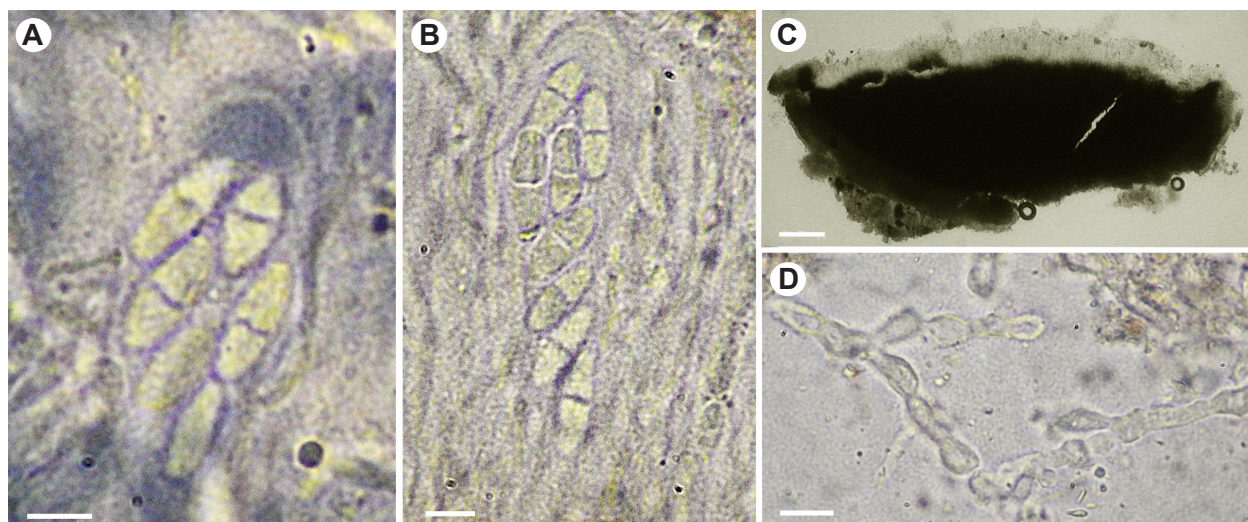


Figure 2. *Eugeniella soreidiata*, apothecia. A – amyloid ascus top; B – ascus with 8 ascospores; C – section through apothecium; D – paraphyses. Scales: A, B, D = 5 μ m; C = 100 μ m.

Diagnosis: Corticolous *Eugeniella* species with white, sorediate thallus, sessile apothecia with biatorine margin and grey, white to pale greenish pruinose disc, with hyaline, ellipsoid, 1-septate ascospores measuring $9\text{--}12 \times 3\text{--}3.5 \mu\text{m}$. Chemistry, atranorin, stictic acid and zeorin as major compounds.

Type: Papua New Guinea, Madang prov., near Bogia. Mangrove island in mouth of Boroi river, E side, $\sim 1 \text{ m}$, $4^{\circ}05'S$, $144^{\circ}47'E$, on tree. 21 Jul. 1992. H. Sipman 34892 (B – holotype; BR – isotype).

Etymology. The epithet refers to the soralia which are unique in the genus.

Description. Thallus continuous, verrucose, $\sim 10\text{--}20 \mu\text{m}$ thick, grey to pale brownish grey; whitish rounded soralia present, $\sim 0.3 \text{ mm}$ wide; prothallus black; photobiont chlorococcoid. Apothecia sessile, biatorine, constricted at base, rounded; disc grey, white to pale greenish pruinose, up to 1.5 mm diam.; margin $0.1\text{--}0.2 \text{ mm}$ wide, prominent, in large apothecia slightly flexuous; excipulum incrustated with many crystals; epithecium granular, colorless; hymenium $50\text{--}60 \mu\text{m}$ high, colourless; hypothecium dark brown to black, relative high, up to $\sim 300 \mu\text{m}$; paraphyses branched (only slightly), $(1.5\text{--})2\text{--}3 \mu\text{m}$ thick, septate, slightly constricted at septum, conglutinated, sometimes anastomosing; asci narrowly clavate, $25\text{--}35 \times 10\text{--}12 \mu\text{m}$, I+ blue, KI+ blue, tholus *Byssoloma* type; ascospores 8 per ascus, hyaline, ellipsoid, 1-septate, not constricted at septa, $9\text{--}12 \times 3\text{--}3.5 \mu\text{m}$. Conidiomata very pale, immersed, $\sim 50 \mu\text{m}$ diam.; conidia filiform, curved, $18\text{--}22 \times 0.8 \mu\text{m}$.

Chemistry. Atranorin, stictic acid and zeorin as major compounds found by TLC in solvent C and HPLC analysis.

Ecology and distribution. The species was found growing on bark of a low tree, in mangrove forest on the N coast of Papua New Guinea.

Notes. The genus *Eugeniella* Lücking, Serus. & Kalb, was introduced by Lücking (2008). More recently, Breuss

& Lücking (2015) recognized nine species, mainly from the Neotropics, and presented a key. All known species have submuriform or transversely 3–7 septate ascospores. Six species are foliicolous, the others are corticolous. Our species clearly has 1-septate ascospores. Soralia are only known in this new species. The most recently described species, *Eugeniella palleola* Breuss & Lücking, is corticolous, has 3-septate ascospores, is known from the Neotropics, and soralia are not present (Breuss & Lücking 2015).

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