Leptocorticium gloeocystidiatum sp. nov. (Basidiomycota), a new corticioid fungus from Sicily, Italy

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Abstract

A new corticioid species, Leptocorticium gloeocystidiatum is described from Sicily, Italy. It is characterized by a resupinate, buff-coloured basidiome and microscopically by the presence of filiform leptocystidia, gloeocystidia, dendrohyphidia, and small ellipsoid, smooth basidiospores, non-reacting in Melzer's reagent. The species is compared with closest relatives. A key to the accepted species of Leptocorticium is provided.

Key words – cystidia – Fagus – Mediterranean area – wood inhabiting fungi

Introduction

Leptocorticium Hjortstam & Ryvarden was erected to accommodate Corticium cyatheae S. Ito & S. Imai, a species originally described from Japan [≡Leptocorticium cyatheae (S. Ito & S. Imai) Hjortstam & Ryvarden] (Hjortstam & Ryvarden 2002). Nakasone (2005) emended the genus adding two species previously classified in Dentocorticium Boidin & Gilles [Dentocorticium sasae (Boidin, Cand. & Gilles) Boidin, Lanq. & Duhem (≡Leptocorticium sasae (Boidin, Cand. & Gilles) Nakasone; ≡Dendrothele sasae Boidin, Cand. & Gilles) from France and Dentocorticium utribasidiatum Boidin & Gilles (≡Leptocorticium utribasidiatum (Boidin & Gilles) Nakasone) from France and Reunion island] and describing Leptocorticium tenellum Nakasone, from South America. Two more species were included in the genus; Leptocorticium capitulatum Hjortstam & Ryvarden, from Brazil (Hjortstam & Ryvarden 2005), and Leptocorticium torrendii (Bres.) Gohbad-Nejhad, from Portugal (≡Corticium torrendii Bres.) (Gohbad-Nejhad 2009). Therefore, Leptocorticium currently contains six species of resupinate basidiomycetes, characterized by thin basidiomes, monomitic hyphal system with clamped septa, utriform or stalked basidia, subulate leptocystidia, dendrohyphidia, and smooth, non-reacting in Melzer's reagent basidiospores (Nakasone 2005). The species have frequently been found on bamboo stems, petioles of ferns, or similar substrata (Nakasone 2005, Hallenberg 2012). Leptocorticium was provisionally classified in the Corticales K.H. Larss., on the basis of morphological characters (Larsson 2007) because there is no molecular information of any species in the genus.

A deviating specimen, recently collected in Sicily, is proposed and described below as new in Leptocorticium. It has been collected in a mixed forest on dead wood of Fagus sylvatica L., in a Mediterranean biodiversity hotspot, where beech trees worldwide reach its southernmost distributional area.
Materials & Methods

Macro- and microscopic examinations

For light microscopy studies, samples were mounted in 3% potassium hydroxide (KOH), Melzer’s reagent (IKI) to determine dextrinoid or amyloid reactions, and 0.1% cotton blue in 60% lactic acid (CB) to determine cyanophily of basidiospore walls. Line drawings were made with a camera lucida attachment. All the specimens are deposited in MCVE and SALA.

Leptocorticium gloeocystidiatum Gorjón & Saitta, sp. nov. Figs 1–2

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Diagnosis – It differs from other species in the genus by smaller basidiospores (4–5 × 2.5–3 µm) and the presence of gloeocystidia.

Type – Italy, Sicily, Messina, Portella Scarno, 1400 m.a.s.l., 14 Apr 2012, on dead wood of Fagus sylvatica, coll. A. Saitta 483 (SALA, holotype; MCVE, isotype)

Etymology – gloeocystidiatum: referred to the presence of gloeocystidia, a distinctive character within the other species of Leptocorticium.

Description – Basidiome resupinate, pruinose, cream to buff, margin abrupt, indistinct, hymenophore smooth to slightly grandinoid under the lens (10×) in some areas. Hyphal system monomitic, hyphae with clamps, thin-walled, 2–3 µm in diam., hyaline in the subhymenium and yellowish towards the subiculum. Hymenium a palisade of basidia, gloeocystidia, filiform leptocystidia, and dendrohyphidia. Gloeocystidia clavate or more frequently with two or three constrictions, 20–40 × 5–6 µm with thickened walls, refringent in KOH (reaction in sulfobenzaldehyde not tested). Leptocystidia filiform, with an apical hyphoid projection up to 100 µm long, but usually shorter ab. 30–50 µm, thin-walled, basally widened and some with knobs or small obtuse protuberances, non-engrusted. Dendrohyphidia few, thin-walled, non-engrusted. Basidia clavate, somewhat constricted and stalked, 15–20 × 3–4 µm, with four slender sterigmata, basally clamped. Basidiospores ellipsoid, 4–4.5(–5) × 2.5–3 µm, smooth, thin-walled, hyaline, IKI–, CB–.

Known distribution – Known only from the type locality in Sicily.

Other material examined – L. tenellum: Chile, Los Lagos, Puyehue National Park, 21 Feb 2010, on Chusquea quila (Poaceae), coll. N. & L. Hallenberg, S.P. Gorjón, NH 16294 (GB).

Fig. 1 – Leptocorticium gloeocystidiatum sp. nov. (holotype). Aspect of the basidiome.
Key to *Leptocorticium* species

1. Gloeocystidia present, basidiospores 4–4.5(−5) × 2.5–3 μm ..................... *L. gloeocystidiatum*
2. Gloeocystidia absent, basidiospores longer ............................................................................................................ 2
3. Leptocystidia apically widened and capitate, basidiospores 6–7 × 2–2.5 μm........... *L. capitulatum*
4. Leptocystidia tapering to a subulate apex, basidiospores diverse ............................................................... 3
5. Basidiospores subglobose, 7–8.5(−9.5) × 6–8 μm............................... *L. torrendii*
6. Basidiospores narrowly ellipsoid to cylindrical, up to 6–6.5 μm wide ................................................................. 4
7. Basidiospores (10–)11–13 × 5–6(–6.5) μm, absence of hymenial crystals........... *L. utribasidiatum*
8. Basidiospores smaller, usually up 5 μm wide, hyaline crystals abundant in the hymenium........ 5
9. Basidiospores (7–)8–11.5 × 2.5–3 μm, Japan and Reunion island.................... *L. cyatheae*
10. Basidiospores wider, more than 3 μm wide, with other known distribution............. 6
11. Basidiospores 8–12(−14) × 3.5–5.5 μm, basidia clavate to suburniform, often with a short stalk, known from Europe ................................................................................................................................. *L. sasae*
12. Basidiospores slightly shorter, 7–9(–11) × (3–)3.5–4.5(–6) μm, basidia frequently utriform and usually inflated in the base, distributed in South America ................................................................. *L. tenellum*

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**Fig. 2** – *Leptocorticium gloeocystidiatum* sp. nov. (holotype). Microscopical elements. a, Basidiospores. b, Basidia. c, Leptocystidia. d, Dendrohyphidia. e, Gloeocystidia.
Discussion

*Leptocorticium gloeocystidiatum* is tentatively described in *Leptocorticium* because it shares with the rest of the species of the genus common important characteristics, as a thin resupinate basidiome, monomitic hyphal system, clamped hyphae, presence of thin, subulate leptocystidia, dendrohyphidia, and smooth basidiospores not reacting in Melzer's reagent. It deviates from the generic concept by the presence of gloecystidia and smaller, ellipsoid basidiospores. However, many species of corticioid fungi with gloecystidia have been added to genera in which the type species lacks such elements (e.g. *Aphanobasidium* Jülich, *Athelopsis* Oberw. ex Parmasto, *Fibricum* J. Erikss., *Sistotrema* Fr., etc.). Nonetheless, it should be desirable to obtain molecular data of *L. gloeocystidiatum* to test its phylogenetic position and natural relationships.

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References


