



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

Gorjón SP<sup>1</sup> and Saitta A<sup>2</sup>

<sup>1</sup> Universidad de Salamanca, Salamanca, España 37007.

<sup>2</sup> Dipartimento di Scienze Agrarie e Forestali, Università di Palermo, Palermo, Italia I-90128.

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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 & Ryvar den was erected to accommodate *Corticium cyatheae* S. Ito & S. Imai, a species originally described from Japan [ $\equiv$ *Leptocorticium cyatheae* (S. Ito & S. Imai) Hjortstam & Ryvar den] (Hjortstam & Ryvar den 2002). Nakasone (2005) emended the genus adding two species previously classified in *Dentocorticium* Boidin & Gilles [*Dentocorticium sasae* (Boidin, Cand. & Gilles) Boidin, Lanq. & Duhem ( $\equiv$ *Leptocorticium sasae* (Boidin, Cand. & Gilles) Nakasone;  $\equiv$ *Dendrothele sasae* Boidin, Cand. & Gilles) from France and *Dentocorticium utribasidiatum* Boidin & Gilles ( $\equiv$ *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 & Ryvar den, from Brazil (Hjortstam & Ryvar den 2005), and *Leptocorticium torrendii* (Bres.) Ghobad-Nejhad, from Portugal ( $\equiv$ *Corticium torrendii* Bres.) (Ghobad-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 Corticiales 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 gloecystidiatum* Gorjón & Saitta, **sp. nov.**  
MycoBank 808223

Figs 1–2

Diagnosis – It differs from other species in the genus by smaller basidiospores ( $4\text{--}5 \times 2.5\text{--}3 \mu\text{m}$ ) and the presence of gloecystidia.

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 – *gloecystidiatum*: referred to the presence of gloecystidia, a distinctive character within the other species of *Leptocorticium*.

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

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

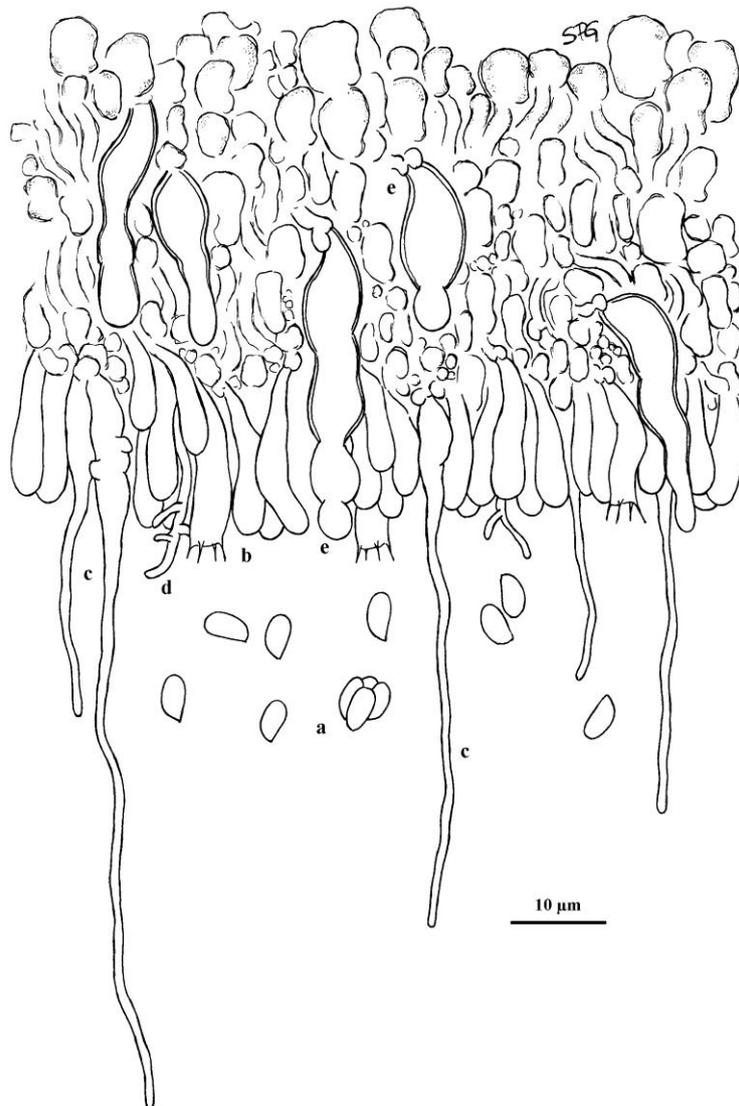
Other material examined – *L. tenellum*: Chile, Los Lagos, Puyehue National Park, 21 Feb 2010, on *Chusquea quila* (Poaceae), coll. N. & L. Hallenberg, S.P. Gorjón, NH 16294 (GB).



**Fig. 1** – *Leptocorticium gloecystidiatum* sp. nov. (holotype). Aspect of the basidiome.

**Key to *Leptocorticium* species**

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



**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 gloeocystidia and smaller, ellipsoid basidiospores. However, many species of corticioid fungi with gloeocystidia have been added to genera in which the type species lacks such elements (e.g. *Aphanobasidium* Jülich, *Athelopsis* Oberw. ex Parmasto, *Fibricium* 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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