

## *Leptocorticium tenellum* (Agaricomycetes) found in Chile

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### Summary

Hallenberg, N. 2012. *Leptocorticium tenellum* (Agaricomycetes) found in Chile. *Kurtziana* 37 (1): 109-112.

The corticioid fungus *Leptocorticium tenellum* was recently found in Puyehue National Park, Chile. Earlier records of the species are from Colombia and Venezuela. The species is described and illustrated, and the biogeography of the genus is discussed.

**Key words:** Corticioid, bamboo, biogeography, taxonomy.

### Resumen

Hallenberg, N. 2012. *Leptocorticium tenellum* (Agaricomycetes) encontrado en Chile. *Kurtziana* 37 (1): 109-112.

El hongo corticioide *Leptocorticium tenellum* fue recientemente encontrado Parque Nacional Puyehue, Chile. Esta especie ha sido registrada previamente para Colombia y Venezuela. Aquí se describe e ilustra la especie y se discute la biogeografía del género.

**Palabras clave:** Corticioide, bambú, biogeografía, taxonomía.

The corticioid genus *Leptocorticium* was described by Hjortstam & Ryvarden (2002), for one species, *L. cyathea* S. Ito & S. Imai. This species is characterized by several conspicuous features in the micro-morphology, so a new genus seemed to be justified. Later on, Nakasone (2005) emended the genus by incorporating two additional species, earlier treated in the genus *Dentocorticium* Boidin & Gilles (1998), and describing one new.

The outer appearance of the 4 species in *Leptocorticium* is rather commonplace for a corticioid fungus, being whitish, smooth, and thin, while in the microscope narrow, subulate cystidia, dendrohyphidia, and basidia with strongly prolonged sterigmata are found. The different species have most frequently been found on bamboo stems, petioles of ferns, or similar substrata. The 4 species differ from each other mainly in their spore sizes and size of basidia.

When Nakasone described *L. tenellum* she based her conclusions entirely on material collected by L. Ryvarden. In their original generic description of *Leptocorticium*, Hjortstam and Ryvarden (2002) mentioned 8 specimens under *L. cyathea*, all from Colombia and Venezuela. Nakasone did not see all specimens but found that 5 of them represented a species which differed from *L. cyathea* in spore shape and size, and those specimens were referred to the new species, *L. tenellum*. The great similarities between the different species in *Leptocorticium* calls for a critical study of the intraspecific variation. This is here done for *L. tenellum* which is described and illustrated. The new findings were collected in Parque Nacional Puyehue, Chile, one year before the violent eruption of the volcano which may have drastically changed the habitat.

## Materials and methods

Free-hand preparations in 2% KOH were studied under a phase contrast microscope (Olympus BH2). Complementary staining was done with Melzer's reagent and Cotton Blue.

**Leptocorticium tenellum** Nakasone, Mycological Progress 4(3): 253. 2005. TYPE: Colombia, Dep. Cundinamarca km 16 en la via Mosquera-La Mesa, 2700 m. a. s. l., L. Ryvarden 15714 (holotype, O!). **Figs. 1-6.**

Basidiomata effused, smooth, thin, up to 60 µm thick, fragile, submembranaceous, under the lens pruinose, margin not particularly differentiated. The basidioma becomes bright yellow upon addition of a droplet of KOH.

Hyphal system monomitic, hyphae with clamps, with thin to slightly thickened walls, 1.3-2 µm wide, straight and loosely arranged in the subiculum, densely intertwined and slightly wider in the subhymenial part. Context filled up with crystalline material which, however, dissolves in KOH. Some minute crystals may remain, attached to hyphae or hymenial details.

A catathymenium is present, consisting of cystidia, basidia and dendrohyphidia.

Cystidia are strongly projecting and visible under the lens (12 X), narrow and almost subulate, tapering to a thin but obtuse apex, 35-90 x 4-5.5 µm, usually straight but basal parts may be flexuose and originate from the subhymenium. Sometimes small outgrowths may be present on the cystidia, similar to the thin branches on dendrohyphidia.

Dendrohyphidia abundant in the hymenial level but very variously developed. Sometimes well developed, consisting of a short, subcylindrical stem with a basal clamp, and richly ramifying from the top or from outgrowths on different levels, sometimes there is just a widened terminal hypha from which a few ramified branches develop. Ultimate branches always thin-walled and thin, 0.5 - 1 µm in diam.

Basidia slightly utriform to subcylindrical, sometimes stalked, 22-30 x 4.5-5.5 µm (in LR 15656 up to 37 x 6.5 µm), basally widened up to 6.5 µm, with a basal clamp, oily content with numerous droplets of various sizes. The four sterigmata are initially robuste and finger-like and pointing in the direction of basidia, later becoming prolonged and slender, up to 9 µm, and diverge to a wide angle with the basidia.

Basidiospores subovate, ellipsoid to subamygdaliform, or subcylindrical, smooth, content oily with numerous droplets or homogenous, with

thickened walls, non-amyloid, cyanophilous. Their sizes vary both within and between investigated specimens: 7-9 x 4-4.8 µm (NH 16294), 8.5-11 x 4.8-6 µm (NH 16311), 9.5-10.5 x 4.5-5 µm (LR 15656). Numerous spores were attached to each other in groups of four.

Specimens studied:

CHILE, **Los Lagos**: Parque Nacional Puyehue, S40° 40' 13,9" W72° 10' 16,1", 390 m. a. s. l. Coll. N. & L. Hallenberg, S. Pérez Gorjon, NH 16294, 21-II-2010. On bamboo (GB and CONC-F).

CHILE, **Los Lagos**: Parque Nacional Puyehue, Trail Los Rapidos, Circuito, S40° 44' 01,4" W72° 18' 44,1", 496 m. a. s. l. Coll. N. & L. Hallenberg, S. Pérez Gorjon, NH 16311, 22-II-2010. On bamboo (GB and CONC-F).

COLOMBIA, *Dep. Cundinamarca*: Paramo, Summa Paz, 3800 m. a. s. l. Coll. L. Ryvarden, LR 15656, 3-VI-1978. On bamboo (O).

COLOMBIA, *Dep. Cundinamarca*: km 16 en la via Mosquera - La Mesa, 2700 m. a. s. l. Coll. L. Ryvarden, LR 15711, 3-VI-1978. On palm or bamboo (O).

VENEZUELA, **Estado Bolivar**: Sifontes Tumerermo, Carretera Tumerermo Bochínche Camp. Coll. L. Ryvarden, LR 35217, 17-XI-1994. On dead hardwood (O).

## Discussion

The Chilean collections were both collected on dead bamboo stems in valdivian temperate rainforests, while those from Colombia/Venezuela were from tree fern petioles (*Cyathea* spp.) or in a single case on hardwood, in a subtropical-tropical environment.

Corticoid fungi are as a rule undersampled and therefore it is hard to draw conclusions on distribution patterns for individual species. However, in the case of *Leptocorticium* spp there are several circumstances that are worthy to consider: Almost all collections were collected on dead bamboo stems, petioles from tree ferns or other ferns, or from similar herbaceous substrates. The known distribution seems to include areas adjacent to the Pacific and Indian Ocean, with findings on Réunion,

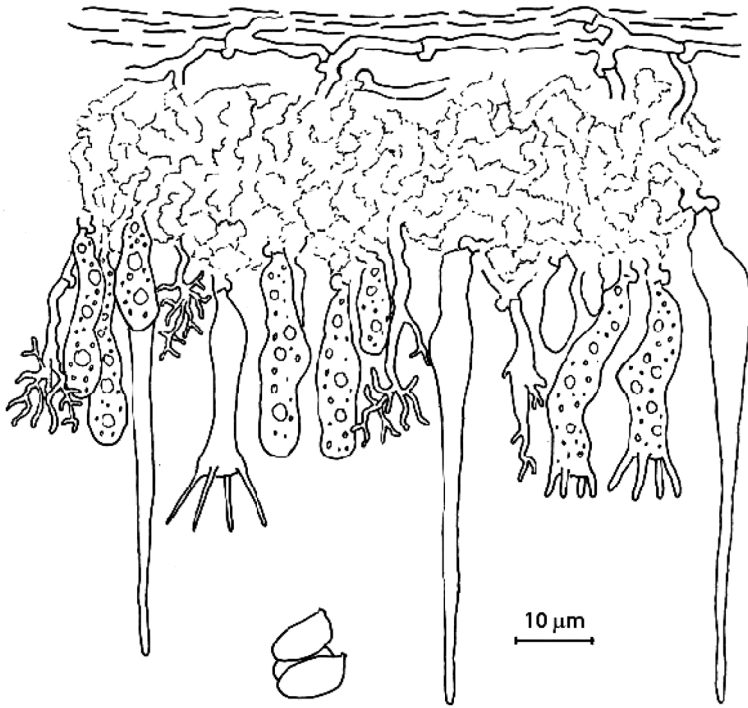
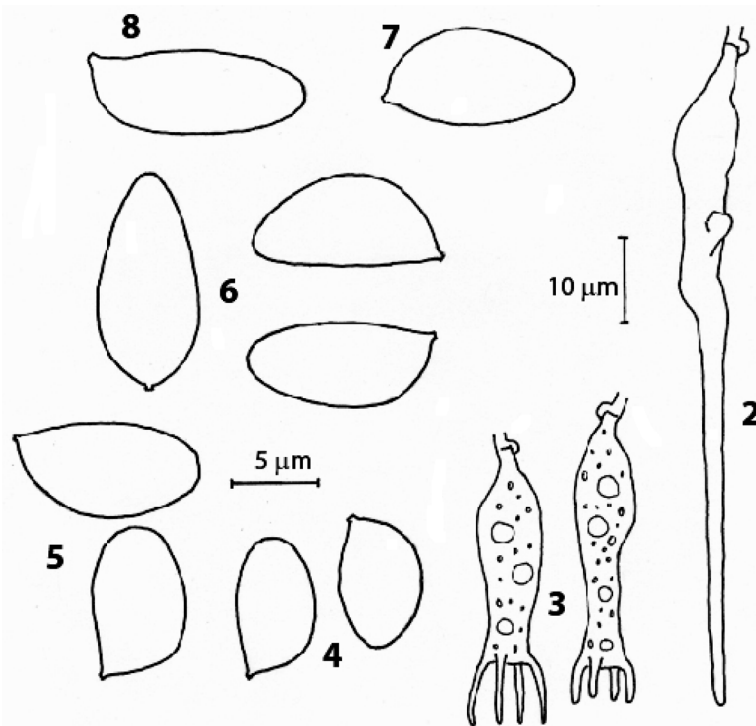


Fig. 1. *Leptocorticium tenellum*, section through basidioma together with basidiospores adhering to each other.



Figs. 2-6. *Leptocorticium tenellum*, microscopical details. 2. Cystidium. 3. Basidia. 4-8. Basidiospores, in 4. NH16294, 5. NH16311. 6. LR15656, 7 LR35217, 8. LR15711.

Bonin Islands (Japan), Colombia/Venezuela, and Chile. In addition, however, two of the species are recorded from France. Petersen and Hughes (2007) summarize distribution patterns for some macrofungi with a similar, peculiar kind of distribution as in *Leptocorticium*.

Taxonomically, the position of *Leptocorticium* is uncertain and Larsson (2007) refers it to the order *Corticiales*, though with a question-mark. It has not been possible to obtain DNA from any of its species, to ascertain its phylogenetic relationship. The delimitation of species within the genus should be regarded as preliminary because of the big variation in spore sizes and spore shapes within and between specimens reported here. In the key to the genus Nakasone (2005) uses spore sizes as the main distinguishing characters. If this key would be applied to the specimens reported here they would have been classified to different species. This seems unlikely and I prefer to place them in *L. tenellum*, the only species reported from S. America so far.

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