



Fungal Planet 736 – 13 July 2018

***Lentithecium carbonneanum* J. Fourn., Raja & Oberlies, sp. nov.**

Etymology. Named after 'Carbonne' a commune in the Haute-Garonne department in south-western France where the type species was collected.

Classification — *Lentitheciaceae*, *Pleosporales*, *Dothideo-mycetes*.

Ascomata subglobose to depressed-spherical, scattered, 290–340 µm high, 380–420 µm diam, immersed to slightly erumpent, with a non-papillate porate ostiole, blackening host surface. **Peridium** 22–35 µm thick, pale to dark brown, pseudoparenchymatous, beneath a blackish brown clypeus 30–45 µm thick. **Asci** bitunicate, fissitunicate, narrowly clavate, 100–110 × 13.5–16 µm, with eight ascospores; uniseriate in lower half, irregularly biseriate in upper half, including a short straight to contorted stipe, 15–22 µm long, furcate at base; hamathecium of cellular pseudoparaphyses, 1.5–3 µm wide with free rounded tips, sparsely guttulate, embedded in mucilage. **Ascospores** (14.5–)17–19.5(–22) × (5.5–)6–7(–8) µm, quotient length/width (Q) = (2.4–)2.5–2.9(–3); n = 60 (mean = 18.2 × 6.7 µm; mean value of quotient length/width (Qe) = 2.7), ellipsoid-fusiform, 1-septate, strongly constricted at median septum, upper cell wider and slightly constricted at mid height, usually more obtusely rounded than lower one, with 3–4 large guttules, eventually 3-septate; wall 1 µm thick, yellowish brown, verrucose, with remnants of slimy material visible in Indian ink but without well-defined sheath.

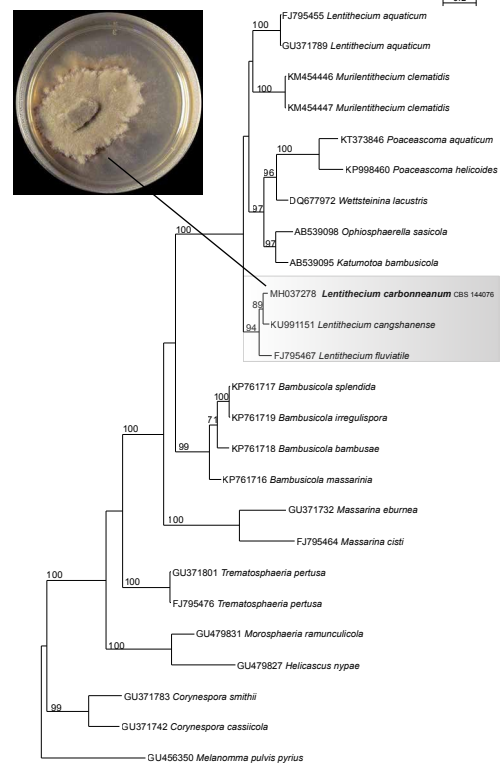
Culture characteristics — Colonies on Potato Dextrose Agar (PDA; Difco, Detroit, MI, USA) attaining 30 mm diam after 4 wk at 25 °C, irregular, somewhat raised. Aerial mycelium appearing finely flocculose, colony surface dark to mouse grey, hyaline towards the margin with purple, vinaceous buff, filamentous; reverse black.

Typus. FRANCE, Haute-Garonne, Carbonne, SW of route du Lançon, 43.317932, 1.217286, artificial lake in a gravel pit, c. 200 m a.s.l., on submerged decorticated branch of *Populus*, 4 Apr. 2017, J. Fournier JF 17012 (holotype ILLS 81639, ex-holotype culture CBS 144076 = G951, single ascospore isolate from holotype, ITS-LSU, partial LSU and partial *rpb2* sequences GenBank MH062991, MH069699 and MH037278, MycoBank MB824593).

Notes — The genus *Lentithecium* was established for *L. fluviatile* (Zhang et al. 2009a). Although this genus was characterised by the lenticular ascomata, later work by Hyde et al. (2013) upon re-examination based on the holotype of *L. fluviatile* revealed that the species has globose ascomata, which agrees with the description of *L. carbonneanum*. Morphologically, the new species from France agrees well with the generic concept of *Lentithecium* in having globose ascomata, fissitunicate, short pedicellate asci, and hyaline, 1–3-septate fusiform ascospores with obtuse ends (Zhang et al. 2009a). More recently, species with brown ascospores (*L. cangshanense* and *L. voraginesporum*) have also been placed within *Lentithecium* (Su et al. 2016, Hyde et al. 2016). The genus *Lentithecium* currently includes six species, *L. cangshanense*, *L. clioninum*, *L. fluviatile*, *L. pseudoclioninum*, *L. unicellulare*

Colour illustrations. Background photo of the artificial lake in France where the fungus was collected (photo credit Marie Fournier); ascoma (scale bars = 1 mm in top photo, 100 µm in others); asci (scale bars = 50 µm); ascospores (scale bars = 10 µm).

and *L. voraginesporum* (Zhang et al. 2009a, b, Hyde et al. 2013, 2016, Tanaka et al. 2015, Su et al. 2016). *Lentithecium carbonneanum* is morphologically similar to *L. cangshanense*, and *L. voraginesporum* in having brown ascospores. *Lentithecium carbonneanum* is, however, different from *L. cangshanense* in having larger ascomata (290–340 µm high, 380–420 µm diam in *L. carbonneanum* vs 210–310 µm high, 220–320 µm diam in *L. cangshanense*). The asci in *L. carbonneanum* are also larger than in *L. cangshanense* (100–110 × 13.5–16 µm in *L. carbonneanum* vs 65–78 × 11–13 µm in *L. cangshanense*) (Su et al. 2016). *Lentithecium carbonneanum* differs from *L. voraginesporum* in habitat type; the former was described and isolated from submerged wood in a freshwater lake, while the latter was described and isolated from submerged, decayed *Phragmites australis* in the Arabian Gulf mangroves (Hyde et al. 2016). A molecular phylogenetic analysis of partial LSU sequences also clearly separates the two species from *L. carbonneanum* (see MycoBank). In addition, a phylogenetic analysis using partial *rpb2* sequences places the new species along with the type species, *L. fluviatile*, and *L. cangshanense*. In our analyses (partial LSU and partial *rpb2*), *L. aquaticum*, does not cluster with other sequenced species of *Lentithecium* including the type species, *L. fluviatile*.



Phylogram of the most likely tree (-lnL = 8822.39) from a PHYML analysis of 25 taxa based on partial *rpb2* sequence data (914 bp). Numbers refer to PHYML bootstrap support values ≥ 70 % based on 1000 replicates. Strain G951 (CBS 144076) is indicated in **bold** and is identified as having phylogenetic affinities to members of the genus *Lentithecium*. Scale bar indicates nucleotide substitutions per site. A 30-d-old culture of G951 (CBS 144076) on PDA media is shown.

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