

*Mycena calongei*



***Mycena calongei* M. Villarreal & J.C. Campos, *sp. nov.***

**Etymology:** Dedicated to Dr Francisco de Diego Calonge (1938–2019), founder of the Sociedad Micológica de Madrid.

**Classification:** *Mycenaceae*, *Agaricales*, *Agaricomycetes*.

*Basidiocarps* gregarious. *Pileus* 4–10 mm diam, hemispherical, then conical to parabolic, flattening to convex, becoming more or less plano-convex with or without a small central papilla, not depressed, pruinose, glabrescent, shallowly sulcate, more or less translucent-striate, very pale brown (MU10YR8/2; Munsell 1994), to pale grey (MU10YR7/2), sometimes dirty white (MU10YR8/1), the centre and striation greyish brown (MU10YR5/2) to brown (MU10YR5/3). *Context* very thin, whitish. *Odour* and *taste* indistinctive. *Lamellae* 13–18 reaching the stipe, lamellulae 1–3, well developed and fairly broad, ascending, the edge convex to subhorizontal, narrowly adnate to broadly adnate, up to 0.5 mm wide, decurrent with a very short tooth, initially white, pale brown, then pale grey brown, with pallid edge. *Stipe* 30–65 × 0.16–0.25 mm, thin, hollow, equal, terete, firm, pruinose, glabrescent, becoming shiny, curved to flexuous, watery white (MU10YR8/1) to watery pale brown (MU10YR8/4), becoming more whitish; sometimes brownish at the apex in old specimens; attached to the substratum by a whorl of radiating, flexuous, white mycelial fibrils. *Basidiospores* (6.4–)7.3–9(–10) × (3.5–)4.1–4.8(–5.7) µm; *Q* = (1.5–)1.6–2.1(–2.3); *N* = 100; *Me* = 8.1 × 4.5 µm; *Qe* = 1.8, pip-shaped, smooth, amyloid. *Basidia* 21–28 × 6–8 µm, clavate, 4–spored, rarely 2–spored, with plump sterigmata up to 4.5 µm long. *Cheilocystidia* 21–58 × 6–11 µm, forming a sterile band, lageniform, sublageniform, cylindrical or sometimes multiform, nearly smooth, frequently mucronate or furcated at the apex or provided with 2–5 short, straight excrescences, 1–6 × 0.5–1 µm. *Pleurocystidia* absent. *Lamellar trama* dextrinoid, reddish brown in Melzer's reagent. *Hyphae of the pileipellis* 5–10(–17) µm wide, densely covered with cylindrical, straight excrescences; terminal cells up to 40 × 15 µm, clavate to subcylindrical, covered with short, straight, cylindrical excrescences. *Hypodermium* of broad, cylindrical to subglobose, smooth cells 12–30 × 11–24 µm. *Hyphae of the cortical layer of the stipe* 2–5 µm wide, densely covered with cylindrical, sometimes more thorn-like, straight excrescences 1–6(–8) × 0.5–1 µm; terminal cells not differentiated. *Caulocystidia* absent. *Clamp connections* observed in all tissues.

**Habitat and distribution:** Gregarious in small clusters, on mossy bark base of *Juniperus oxycedrus* (*Cupressaceae*) in Mediterranean grove of evergreen oak forests.

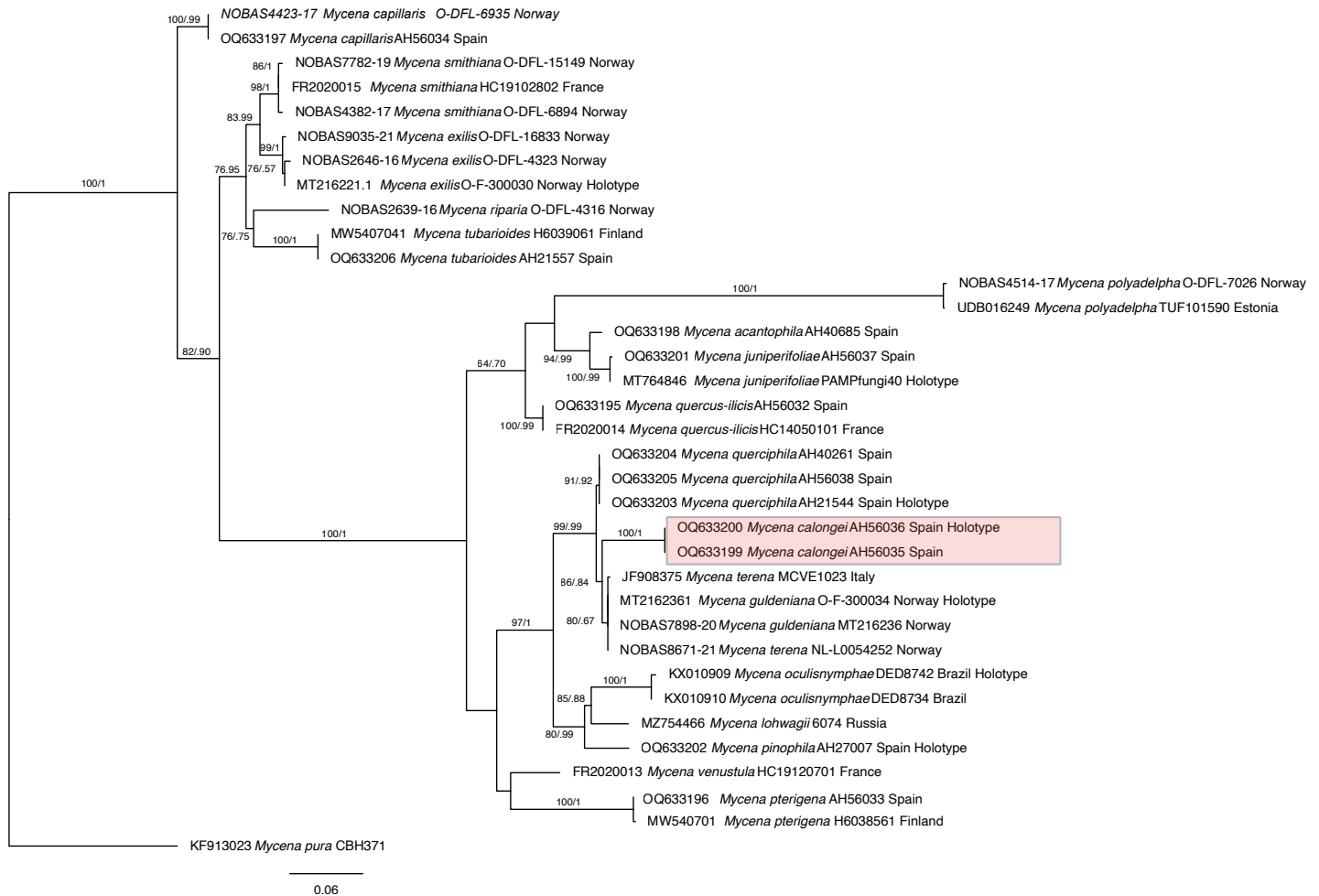
**Typus:** **Spain**, Madrid, Aldea del Fresno, Barranco de las Vacas, 40.312203, -4.204505, 465 m a.s.l., 5 Dec. 2020, *leg. J.C. Campos & M. Villarreal* (**holotype** AH56036; ITS sequence GenBank OQ633200).

**Additional material examined:** **Spain**, Madrid, Aldea del Fresno, Barranco de las Vacas, 40.312203, -4.204505, 465 m a.s.l., 26 Dec. 2022, *leg. M. Villarreal* (AH56035; ITS sequence GenBank OQ633199).

**Notes:** *Mycena calongei* belongs to monophyletic *M. sect. Polyadelphia*. It is characterised by its small size and gregarious basidiocarps fruiting at the base on mossy bark of *Juniperus oxycedrus*. The new species group with other smooth to nearly smooth cheilocystidiated species of the section and is very similar to the Mediterranean species *M. querciphila* (Esteve-Raventós & Villarreal 1997), which differs in having shorter cheilocystidia up to 33 µm and hyphae of the stipitipellis more sparsely ornamented with short excrescences 1–3 × 0.7–1 µm, and sporulating exclusively on *Quercus rotundifolia* and *Q. suber* dead leaves.

Based on the results of a blastn search of NCBI's GenBank nucleotide database using the ITS sequence, *M. calongei* differs from *Mycena querciphila* [voucher AH21544, GenBank OQ633203; Identities = 618/647 (96 %) three gaps (0 %)]. A phylogenetic analysis based on internal transcribed spacer sequences derived from two *M. calongei* collections clearly showed that they cluster together, being phylogenetically distinct from the closest species of *M. sect. Polyadelphia*.

**Colour illustrations:** *Juniperus oxycedrus* growing in Spain. Basidiocarps; basidium; cheilocystidia; hyphae of the pileipellis; terminal cells of the pileipellis; spores; hyphae of the stipitipellis. Scale bars: basidiocarps = 1 cm; all others = 10 µm.



Phylogenetic relationships in *Mycena* sect. *Polyadelphia* reconstructed from an unpartitioned ITS dataset. The Maximum Likelihood (ML) analyses were performed using IQ-TREE v. 2.2.0 (Nguyen *et al.* 2015). Branch support was assessed through 1000 replicates of standard non-parametric bootstrapping (Felsenstein 1985). The Bayesian Inference (BI) analyses were carried out in MrBayes v. 3.2.7 (Ronquist *et al.* 2012) and included two runs over  $5 \times 10^6$  generations, with a sample frequency of 500 and a burn-in value of 25 %. The ML bootstrap support values and Bayesian posterior probabilities are indicated above the branches. Tree was drawn with FigTree v. 1.4.4 (Rambaut 2018) and edited with Inkscape. All tips are labelled with database accession number, taxon name, collection number and origin. *Mycena calongei* is marked in **bold** and the holotype is indicated. Scale bar on the tree indicates the expected number of changes per site. The tree was rooted to *Mycena pura* according to Lebeuf *et al.* (2023).