Colletotrichum arboricola
**Colletotrichum arboricola** M. Zapata, M.A. Palma & Piont., *sp. nov.*

**Etymology.** The epithet refers to being a tree inhabitant.

**Classification —** **Glomerellaceae, Glomerellales, Sordariomyctes.**

**Sexual morph on Anthriscus stem** (microscopic preparations in 60 % lactic acid, with 50 measurements per structure). Ascomata globose to pyriforme, glabrous to slightly pilose, medium brown to uniformly darker. **Peridium** 8–13 µm thick, composed of brown flattened angular cells, 6–14 µm diam. Ascogenous hyphae hyaline, smooth-walled, delicate. **Interascal tissue** composed of fine paraphyses with scarce septa, more apparent in immature perithecia, arranged in irregular masses of hyaline mycelium filament with round tips, 35–85 × 1–2 µm. **Asci** cylindrical, unistunicate, 8-spored, 67–86 × 8–13 µm. **Ascospores** unisporic to bisporic, aseptate, hyaline, smooth-walled, with both ends round, sometime slightly curved, (12–)13–16–(17) × (3.5–)4–5.3–(6) µm, mean ± SD 14.3 ± 1.1 × 4.4 ± 0.5, L/W ratio 3.2. **Asexual morph on SNA.** Vegetative hyphae 1.5–7 µm diam, hyaline to pale brown, smooth-walled, septate, branched. **Clamydospores** not observed. **Setae** not observed or rare. **Conidiomata** absent, conidiophores formed directly from vegetative hyphae, simple or septate and frequently branched, 14–41 µm long. **Conidiogenous cells** hyaline, smooth-walled cylindrical to ampulliform, sometimes integrated (not separated from fertile hyphae by a septum), polyphialidic rarely observed, phialides measuring 10–22 × 1.8–3.3 µm, opening 1–1.5 µm diam, collarette not visible or ≤ 0.3 µm long, periclinal thickening not observed or rare. **Conidia** hyaline, smooth-walled, aseptate, mainly straight, sometimes slightly constricted in the middle, cylindrical, with one end rounded and the other slightly acute to truncate with cytoplasm little granular, (16.2–)17.1–20.1–(23.3) × (4.8–)5.6–(5.9) µm, mean ± SD 18.6 ± 1.4 × 5.4 ± 0.2 µm, L/W ratio = 3.5. **Appressoria** single, solitary, brown, smooth-walled, clavate to elliptical, the edge entirely or slightly undulated, (6.9–)7.8–12.4–(16.9) × (3–)4.1–6.3–(6.9) µm, mean ± SD 9.6 ± 2.1 × 5.1 ± 0.9 µm, L/W ratio = 2 (more abundant in oat meal agar).

**Asexual morph on Anthriscus stem.** **Conidiomata** absent. **Setae** not observed. **Conidiophores** formed directly on hyphae, abundant, hyaline, smooth-walled, sometimes septate, branched, to 35 µm long. **Conidiogenous cells** hyaline, smooth-walled, cylindrical to clavate 9–16.5 × 2–4 µm, opening 1–1.5 µm, collarette ≤ 0.5 µm long or not visible, periclinal thickening not observed or rare. **Conidia** hyaline, smooth-walled, aseptate (sometimes with a septum before germination), straight to slightly curved, cylindrical, with one end round and other end sometime slightly acute, (15.7–)16.7–19.2–(20.3) × (4.4–)4.9–5.3–(5.6) µm, mean ± SD 17.9 ± 1 × 5.1 ± 0.2 µm, L/W ratio = 3.5.

**Culture characteristics** — (near UV light with a 12 h photoperiod, 20 °C after 10 d): Colonies on SNA flat with entire margin, hyaline to pale olivaceous grey, with low white aerial mycelium, filter paper and Anthriscus stem partly covered with grey fruiting bodies (ascomata), reaching 58.8 ± 1.4 mm diam. Colonies on OA flat with entire margin, with felt or short floccose olivaceous grey aerial mycelium, reaching 65.6 ± 1 mm diam. **Conidia** in mass salmon.

**Tupus. Chile.** Los Ángeles, on leaves of **Fuchsia magellanica** (Onagraceae), 11 July 2012, J. Jure (holotype RGM 2481, culture ex-type SAG 53350-12 = CBS 144795; ITS, LSU, GAPDH, ACT and TUB2 sequences GenBank MH817944, MK014743, MH817950, MH817956 and MH817962, MycoBank MB827627. TreeBASE Submission ID 23265).

For additional material examined, see MycoBank.

**Notes** — *Colletotrichum arboricola* was isolated for the first time on leaves of *Fuchsia magellanica*, but its presence has since been observed in different arboreal hosts in the central area of Chile. A phylogenetic analysis based on sequence data from four loci (ITS, GAPDH, ACT and TUB2) places the fungus in clade 5 of the *Colletotrichum acutatum* complex (Damm et al. 2012). *Colletotrichum arboricola* is separated from other species by GAPDH and ACT, with GAPDH performing best as a diagnostic sequence. The closest matches in a BLASTn searches with the GAPDH sequence were *C. phomisi* CBS 118194 (GenBank JQ948777; Identities = 245/252 (97 %), no gaps), *C. acerbum* CBS 128593 (GenBank JQ948790; Identities = 242/252 (96 %), no gaps) and *C. johnstonii* CBS 128532 (GenBank JQ948775; Identities = 241/252 (96 %), no gaps). Due to size and shape overlapping of conidia, appressoria and ascospores with others members of the complex, *C. arboricola* is not reliably distinguishable using morphological characteristics.

One of the two equally parsimonious trees (67 steps, CI = 0.896, HI = 0.104, RI = 0.957) obtained from the multilocus phylogenetic analysis (ITS-GAPDH-ACT-TUB2) for selected *Colletotrichum* species belonging to the *C. acutatum* complex. The analysis was conducted with PAUP v. 4.0b10 (Swoford 2003). DNA sequences were aligned using MAFFT v. 7.0 employing the E-INS-i strategy. Bootstrap support values ≥ 75 % are shown above nodes (1000 replicates). The tree was rooted with *Colletotrichum orchidophilum*.  

**Colour illustrations.** *Fuchsia magellanica* growing in natural habitats of Chile (courtesy Fernan Silva 2017); asci, ascospores and conidiophores on *Anthriscus* stem (in lactophenol-cotton-blue), appressoria and conidia. Scale bars = 10 µm.

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