Phialocephala cladophialophoroides
Phialocephala cladophialophoroides Madrid, C. Tapia, V. Silva & M. Lafourcade, sp. nov.

Etymology. The name refers to the morphological similarity between this fungus and members of the genus Cladophialophora.

Classification — Vibrioseaceae, Helotiales, Leotiomyctes.

On water agar with sterilised pine needles (PNA): Mycelium consisting of septate, branched, subhyaline to dark olivaceous brown, smooth to verruculose, thin- to thick-walled, 1–6 µm wide hyphae, with moniliform segments showing swollen cells up to 8 µm wide. Conidiophores micronematous, often reduced to conidiogenous cells, pale to dark olivaceous brown, smooth to verruculose. Conidiogenous cells mostly subcylindrical, 12–25 × 4–6 µm. Conidia in acropetal, simple, strongly coherent chains, mostly subglobose to subcylindrical, aseptate, pale olivaceous brown to dark brown, smooth-walled to verruculose, 5–17(–22) × (4–)5–6(–7) µm. Chlamydospores and sexual morph not observed.

Culture characteristics — Colonies after 21 d at 25 °C attaining 26 mm on PNA and 29 mm on MEA, fimbriate, with a fimbriate margin, olivaceous black on the former medium, dark grey on the latter, reverse concolorous with obverse on each medium.


Notes — This fungus was isolated from toe nail lesions of an immunocompromised patient. The clinical case is currently under study and will be reported elsewhere. The isolate remained sterile or sporulated poorly on routine mycological media, such as malt extract agar or Sabouraud dextrose agar. Therefore, it was grown on PNA in order to stimulate sporulation. On this medium, undifferentiated fertile hyphae produced cladosporioid, coherent chains of aseptate, subglobose to elongate dematiaceous conidia without dark scars. These morphological features closely resembled those of Cladophialophora (Chaetothyriales), a genus which includes important clinically-relevant species with a broad clinical spectrum, including chromoblastomycosis, phaeohyphomycosis, mycetoma and onychomycosis (Badali et al. 2008, Brasch et al. 2011). BLAST searches with the ITS sequence of isolate CCCT 17.04, however, revealed affinities with species of Phialocephala (Helotiales), and the closest match was the type species, P. dimorphospora (ex-type strain, CBS 300.62, ITS sequence GenBank AF486121, and other strains, 97–98 % identical). Considering that the ITS region provides little resolution for closely related taxa in Phialocephala (Tanney et al. 2016), isolate CCCT 17.04 was considered to represent a species different from P. dimorphospora.

The genus Phialocephala traditionally has been characterised by micronematous conidiophores bearing penicillately arranged, phialidic conidiogenous cells with deep collarettes and aseptate conidia in slimy masses (Kendrick 1961, Seifert et al. 2011). These structures are produced by P. dimorphospora in cultures on MEA at 25 °C (Mouton et al. 1993), but were not observed in isolate CCCT 17.04. Several studies have revealed a high degree of morphological plasticity in the asexual morphs of Phialocephala, including the occasional presence of an accompanying anavirga-like or diplolococcium-like morph in some species, or the production of a synnematous conidial apparatus with elastic, non-phialidic, conidiogenous cells in P. oblonga (Descals & Sutton 1976, Tanney et al. 2016). In spite of this morphological variability, no cladocephalohora-like morph has been reported previously in Phialocephala, supporting the proposal of the novel species described herein.

Colour illustrations. Urban landscape in Santiago de Chile; colony after 21 d at 25 °C on water agar with sterilised pine needles; moniliform hypha; developing and detached conidial chains. Scale bars = 10 µm.