

Falcocladium heteropyxidicola
& *Castanediella senegaliae*



Fungal Planet 1192 & 1193 – 13 July 2021

Falcocladium heteropyxidicola Crous, *sp. nov.*

Etymology. Name refers to the host genus *Heteropyxis* from which it was isolated.

Classification — *Falcocladiaceae*, *Falcocladiales*, *Sordariomycetes*.

Conidiophores penicillate or sporodochial, arising from superficial mycelium or microsclerotia; stipe extensions hyaline, numerous per conidiophore, aseptate, thick-walled, $35\text{--}50 \times 1.5\text{--}2 \mu\text{m}$; arising from various positions in the conidiophore, terminating in globose vesicles, $4\text{--}5 \mu\text{m}$ diam. *Conidiophore branches*: primary branches hyaline, smooth, subcylindrical, 0–1-septate, $5\text{--}10 \times 2\text{--}3 \mu\text{m}$; secondary and tertiary branches hyaline, aseptate, $6\text{--}10 \times 2\text{--}3 \mu\text{m}$. *Conidiogenous cells* phialidic, in whorls of 2–6, ampulliform with elongated necks and periclinal thickening and minute collarettes, $6\text{--}12 \times 2\text{--}3 \mu\text{m}$. *Conidia* hyaline, smooth, aseptate, falcate, with short, acute, thick-walled apical beak, and basal appendage, $(13\text{--})15\text{--}17\text{--}(18) \times (1.5\text{--})2 \mu\text{m}$; basal appendages on inner, shorter curve, $2\text{--}3 \mu\text{m}$ long, with rounded end; apical beak continuous with body,

$1.5\text{--}2 \mu\text{m}$ long. *Chlamydospores* medium brown, smooth, globose, $8\text{--}15 \mu\text{m}$ diam, aggregating to form microsclerotia.

Culture characteristics — Colonies flat, spreading, surface folded, with sparse aerial mycelium and smooth, lobate margin, reaching 15 mm diam after 2 wk at 25 °C. On MEA, PDA and OA surface buff, reverse ochreous.

Typus. SOUTH AFRICA, Mpumalanga, Mbombela, Buffelskloof Nature Reserve, on leaves of *Heteropyxis canescens* (*Heteropyxidaceae*), 23 Nov. 2018, P.W. Crous, HPC 3151 (holotype CBS H-24486, culture ex-type CPC 38904 = CBS 146974, ITS, LSU, *actA* and *rpb2* sequences GenBank MZ064418.1, MZ064475.1, MZ078145.1 and MZ078196.1, MycoBank MB 839504).

Notes — *Falcocladium heteropyxidicola* is related to *F. thailandicum* (vesicles sphaeropedunculate, conidia $(19\text{--})20\text{--}23\text{--}(24) \times 1.5\text{--}(2) \mu\text{m}$; Crous et al. 2007b, Lombard et al. 2015), but is distinguished from that species by its globose vesicles, and smaller conidia.

(notes *Falcocladium heteropyxidicola* continues on Supplementary material page FP1192 & 1193)

Castanediella senegaliae Crous, *sp. nov.*

Etymology. Name refers to the host genus *Senegalia* from which it was isolated.

Classification — *Castanediellaceae*, *Xylariales*, *Sordariomycetes*.

Observed to form cupulate *conidiomata* (satchmopsis-like) on host tissue, but in culture these were weakly developed, $40\text{--}100 \mu\text{m}$ diam, brown, arising from a reduced stroma, with brown, cupulate basal layer giving rise to a dense layer of brown cells that terminate in densely packed, brown, ampulliform *conidiogenous cells*, $5\text{--}8 \times 2.5\text{--}3 \mu\text{m}$, that line the inner layer of the cupulate or sporodochial conidioma, polyblastic with minute unthickened denticles at apex. *Conidia* solitary, aggregated in clusters in buff mucoid mass, hyaline, smooth, granular, falcate, fusoid, aseptate, widest in middle, ends subobtusate, $(9\text{--})10\text{--}11\text{--}(13) \times 1.5\text{--}(2) \mu\text{m}$.

Culture characteristics — Colonies flat, spreading, with moderate aerial mycelium and smooth, even margin, reaching 16 mm diam after 2 wk at 25 °C. On MEA surface and reverse hazel; on PDA surface smoke grey, reverse hazel; on OA surface bay.

Typus. SOUTH AFRICA, Mpumalanga, Mbombela, Buffelskloof Nature Reserve, on dead pods of *Senegalia ataxacantha* (*Fabaceae*), Nov. 2018, P.W. Crous, HPC 3159 (holotype CBS H-24541, culture ex-type CPC 39095 = CBS 147077, ITS and LSU sequences GenBank MZ064451.1 and MZ064508.1, MycoBank MB 839505).

Notes — *Castanediella* is characterized by macronematous, mononematous or sporodochial, branched, brown to pale brown conidiophores, with monoblastic or polyblastic, sympodial, discrete, cylindrical to lageniform, hyaline to subhyaline conidiogenous cells, and septate, cylindrical to fusoid, hyaline conidia (Crous et al. 2015a, 2021, Hernández-Restrepo et al. 2017). *Castanediella senegaliae* is related to *C. ambae* (see FP1230 in this paper), which has erect, sporodochial conidiomata, similar to those observed in *C. senegaliae*, which also appear cupulate. Furthermore, it appears that *Synnemadiella eucalypti* (synnemata with phialidic conidiogenous cells and ellipsoid, inequilateral, aseptate conidia; Crous et al. 2016) clusters among species of *Castanediella*, suggesting that this complex requires revision.

(notes *Castanediella senegaliae* continues on Supplementary material page FP1192 & 1193)

Colour illustrations. Buffelskloof Nature Reserve. Left column: *Falcocladium heteropyxidicola*. Conidiophores giving rise to conidia; vesicles; chlamydospores; conidia. Right column: *Castanediella senegaliae*. Conidiomata on PNA; conidiogenous cells giving rise to conidia; conidia. Scale bars = 100 μm (conidiomata of *C. senegaliae*), 10 μm (all others).

Pedro W. Crous & Johannes Z. Groenewald, Westerdijk Fungal Biodiversity Institute, P.O. Box 85167, 3508 AD Utrecht, The Netherlands; e-mail: p.crous@wi.knaw.nl & e.groenewald@wi.knaw.nl
Michael J. Wingfield, Department of Biochemistry, Genetics and Microbiology, Forestry and Agricultural Biotechnology Institute (FABI), Faculty of Natural and Agricultural Sciences, University of Pretoria, Private Bag X20, Hatfield 0028, Pretoria, South Africa; e-mail: mike.wingfield@fabi.up.ac.za