

*Monochaetia massachusettsianum*



Fungal Planet 973 – 18 December 2019

***Monochaetia massachusettsianum* Crous & Jurjević, sp. nov.**

*Etymology.* Name refers to the state in the USA where it was collected, Massachusetts.

*Classification* — *Sporocadaceae*, *Xylariales*, *Sordariomycetes*.

*Conidiomata* acervular, superficial on agar, unilocular, 200–300 µm diam; wall of several layers of brown *textura angularis*. *Conidiophores* arising from upper layer of basal stroma, septate, branched, or reduced to conidiogenous cells, hyaline, smooth, subcylindrical to lageniform, dissolving at maturity, 6–20 × 2.5–3.5 µm; proliferating percurrently at apex. *Conidia* fusoid, brown, smooth, mostly straight, 3(–5)-euseptate with appendages; basal cell obconic, hyaline with truncate hilum; median cells brown; apical cell conical, hyaline, (23–)25–28(–30) × (7–)8–9(–10) µm. Appendages cellular, unbranched, attenuated; apical appendage single central, 7–12 µm long; basal appendage single, unbranched, centric, 2–7 µm long (when present).

*Culture characteristics* — Colonies flat, spreading, with sparse aerial mycelium and smooth, lobate margin, reaching 60 mm diam after 2 wk at 25 °C. On MEA surface cinnamon, reverse brick. On PDA surface cinnamon, reverse isabelline. On OA surface isabelline. On Czapek Yeast Extract Agar 23 mm / 25 °C / 7 d, no growth / 37 °C / 7 d.

*Typus.* USA, Massachusetts, Cohasset, air in basement, 30 Oct. 2018, Ž. Jurjević (holotype CBS H-24170, culture ex-type EMSL 5009 = CPC 36626 = CBS 146013, ITS, LSU, *rpb2* and *tef1* sequences GenBank MN562126.1, MN567633.1, MN556807.1 and MN556824.1, MycoBank MB832883).

*Notes* — *Monochaetia* is characterised by acervular conidiomata, fusoid and transversely septate conidia, with brown median cells and a single cellular apical and basal (when present) appendage (Liu et al. 2019a). *Monochaetia massachusettsianum* is phylogenetically related to *M. monochaeta* (conidia 4(–5)-septate, 17–23 × 4.5–7 µm), and *M. kansensis* (conidia 4-septate, 17.5–19 × 5.5–7(–8) µm; Nag Raj 1993), but distinct in having larger conidia.

Based on a megablast search of NCBI's GenBank nucleotide database, the closest hits using the **ITS** sequence had highest similarity to *Monochaetia monochaeta* (strain CBS 118.66, GenBank MH858742.1; Identities = 565/592 (95 %), 5 gaps (0 %)), *Monochaetia kansensis* (strain PSHI2004Endo1031, GenBank DQ534045.1; Identities = 503/528 (95 %), 4 gaps (0 %)), and *Magnohelicospora iberica* (strain FMR 12414, GenBank KY853450.1; Identities = 523/549 (95 %), 4 gaps (0 %)). Closest hits using the **LSU** sequence are *Monochaetia kansensis* (strain PSHI2004Endo1030, GenBank DQ534035.1; Identities = 832/839 (99 %), no gaps), *Monochaetia ilexae* (strain CBS 101009, GenBank MH554176.1; Identities = 827/834 (99 %), no gaps), and *Monochaetia junipericola* (strain CBS 143391, GenBank MH107947.1; Identities = 839/847 (99 %), no gaps). Closest hits using the **rpb2** sequence had highest similarity to *Monochaetia junipericola* (strain CBS 143391, GenBank MH108004.1; Identities = 704/805 (87 %), no gaps), *Monochaetia quercus* (strain CBS 144034, GenBank MH555068.1; Identities = 723/830 (87 %), no gaps), and *Monochaetia monochaeta* (strain CBS 658.95, GenBank MH554977.1; Identities = 719/830 (87 %), no gaps). Closest hits using the **tef1** sequence had highest similarity to *Monochaetia ilexae* (strain CBS 101009, GenBank MH554371.1; Identities = 327/382 (86 %), 15 gaps (3 %)), *Monochaetia quercus* (strain CBS 144034, GenBank MH554606.1; Identities = 289/335 (86 %), 11 gaps (3 %)), and *Monochaetia monochaeta* (strain CBS 658.95, GenBank MH554499.1; Identities = 271/314 (86 %), 8 gaps (2 %)).

*Colour illustrations.* Basement where *Monochaetia massachusettsianum* was isolated from. Colony on oatmeal agar; conidiophores with conidiogenous cells; conidia. Scale bars = 10 µm.