

*Meliola gorongosensis*



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***Meliola gorongosensis* Iturr., Raudabaugh & A.N. Mill., sp. nov.**

*Etymology.* Name refers to the locality in which it was collected, Gorongosa National Park.

*Classification* — *Meliolaceae*, *Meliolales*, *Sordariomycetes*.

*Mycelium* forming ovate to irregular black patches on both surfaces of leaflets, up to 10 mm diam, hyphae dark brown, 5–7 µm diam, thick-walled, wall 1 µm wide, septate, closely branched forming a dense network on the surfaces of the leaflet, bearing numerous short hyphopodia. *Hyphopodia* arranged in a variety of manners: on opposites sides of the hyphae or alternately or unilaterally on one side of the hyphae, arising from a short basal cell, 12–17 µm long, terminating in a swollen, rounded to slightly curved head, 7.6–10.3 × 8.8–11.6 µm. *Setae* arising from the hyphae, multiple, stiff, erect, dark-brown, septate, more than 1 mm high, tapering towards the apex, smooth-walled with walls equally thickened the entire length. *Ascomata* on both surfaces of leaves, numerous, black, lenticular-to-spherical, 220 × 165 µm, arising from the hyphae. *Ascomatal wall of textura globulosa-angularis* in surface view, with a distinguishable pattern composed of groups of 4–5 dark brown cells with each group circumscribed by a dark perimeter, cells 10–11 µm, 3–4 layers thick, brown, outer cells dark-brown, isodiametric. *Asci* arranged in a basal layer, oblong when young, 53.5–80.4 × 31–36.3 µm, widening as they mature to become subspherical, with a short point of attachment, 71–75 × 34–51 µm, 3-spored with one aborted spore, evanescent when mature. *Ascospores* dark-brown when mature, thick-walled, wall 3–3.5 µm wide, broadly ellipsoidal, slightly curved, inequilateral, with one rounded end and the other end tapering or both ends tapering, 40–50(–55) × 14–22(–24) µm, with four very dark and thick-walled septa, sometimes constricted at the septa; with one large guttule per cell.

*Habitat* — On living and fallen, dead leaflets of *Philenoptera violacea*.

*Distribution* — Known only from Gorongosa National Park, Mozambique.

*Typus.* MOZAMBIQUE, Sofala Province, Gorongosa National Park, Great Rift Valley of central Mozambique, road south of Chitengo base camp toward Pungue River and Vinho community on opposite bank, mixed palm forest, on fallen, dead leaflets of *Philenoptera violacea* (*Fabaceae*), -18.9889S, 34.3525E, 40 m elev., 21 May 2016, *T. Iturriaga* MOZ 9 (holotype CUP 70689, isotype ILLS 82564, ITS sequence GenBank MK802897, MycoBank MB830654).

*Additional material examined.* *Meliola carvalhoi*: in foliis *Lonchocarpus cyanescens* (*Papilionaceae*). Africa orientalis (Portuguese East Africa): Larde, 30 Aug. 1946, *T. Carvalho*, IMI 16646 (typus). *Meliola carvalhoi*: Sydowia 5: 4. 1951.

*Colour illustrations.* Typical African savannah mixed with patches of forest in Gorongosa National Park, Mozambique. Fallen leaflet of *Philenoptera violacea* with blackened areas of *M. gorongosensis*; longitudinal section through ascoma; erect and pointed setae on superficial hyphae; two young asci with three ascospores each (in Congo Red); three dark brown 4-septate ascospores. Scale bars = 40 µm (ascomal section), 40 µm (setae), 20 µm (immature asci), 10 µm (ascospores). Photo credits: T. Iturriaga, D. Raudabaugh.

*Notes* — The phylogenetic placement of *Meliola* has been the subject of debate for many years. Saenz & Taylor (1999) showed that *Meliola* belongs to the 'unitunicate pyrenomycetes', today treated in the *Meliolaceae* (*Sordariomycetes*). The new species described here, *Meliola gorongosensis*, possesses the typical characters known for the genus: dark mycelium as a superficial mat of thick, dark-septate hyphae; hyphopodia, setae and ascomata superficial on the mycelium; ascomatal wall with thick-walled dark-cells, with or without a pattern, and ascospores usually 4-septate with a thick dark-brown wall. Most species occur in tropical areas as highly specialised biotrophs on leaves of specific genera or species of higher plants. A 'Beeli formula' (Beeli 1920) is a numerical code traditionally used to characterise each species, in this case Beeli number 3113.4344. The type of *Meliola carvalhoi* (Deighton 1951) was compared to our material since it was described from the same plant genus *Philenoptera* (as *Lonchocarpus cyanescens*, a nomenclatural synonym of *Philenoptera cyanescens*), both in the family *Leguminosae* (Schrire 2000) and also both from Mozambique. Both species were collected in the same general area (-18.25S, 35.00E). *Meliola gorongosensis* differs from *M. carvalhoi* in that the former has an ascomatal wall with a defined cell pattern, whereas *M. carvalhoi* shows no specific pattern. *Meliola gorongosensis* has only one type of appressorium, while *M. carvalhoi* has two kinds of appressoria. In *M. gorongosensis* the appressorium terminal cell is rounded with a rugose cell wall. In *M. carvalhoi*, one type of appressoria terminal cell is also rounded, but with a smooth cell wall, while the second type of appressoria has mucronate apical cells. Ascospores of *M. gorongosensis* are ellipsoid and inequilateral, while those in *M. carvalhoi* are cylindrical to slightly ellipsoid and equilateral. Setae in *M. gorongosensis* are smooth-walled with walls equally thickened the entire length unlike those in *M. carvalhoi* with walls irregularly thickened. Deighton (1951) describes the setae in *M. carvalhoi* as being spiny, although we were not able to observe the spines in the material that we examined. The host of *M. gorongosensis* is *Philenoptera violacea*, while the host of *M. carvalhoi* is *Philenoptera cyanescens*.

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