

Meliolaceae of Kerala, India - XXXI new species and a new variety

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Asteridiella ixorae sp. nov. (Fig. 1)

Material examined

27.ix.2006, on leaves of *Ixora* sp. (Rubiaceae), Palode forest area, Thiruvananthapuram, Kerala, India, coll. V.B. Hosagoudar et al. HCIO 48165 (type) TBGT 2901 (isotype), (MycoBank # 518398)

Coloniae amphigenae, subdensae, ad 2mm diam., confluentes. Hyphae rectae vel subrectae, oppositae acuteque vel laxe ramosae, laxae vel arte reticulatae, cellulae 12-30 x 4-8 μ m. Appressoria alternata, unilateralis, 1% opposita, antrorsa vel subantrorsa, recta, 12-22 μ m longa; cellulae basiliares cylindratae vel cuneatae, 3-10 μ m longae; cellulae apicales ovatae, oblongae, globosae, integrae vel leniter angularis, 8-13 x 8-11 μ m. Phialides appressorii intermixtae, oppositae vel alternatae, ampulliformes, 12-22 x 6-8 μ m. Perithecia dispersa, globosa, ad 145 μ m; cellulae peritheciales mammiformes, ad apicem obtusae, ad 10 μ m longae; ascosporae obovoideae, 4-septatae, constrictus ad septatae, 35-42 x 12-18 μ m.

Colonies amphigenous, subdense, up to 2mm in diameter, confluent. Hyphae straight to substraight,

branching opposite at acute to wide angles, loosely to closely reticulate, cells 12-30 x 4-8 μ m. Appressoria alternate, unilateral, 1% opposite, antrorse to subantrorse, straight, 12-22 μ m long; stalk cells cylindrical to cuneate, 3-10 μ m long; head cells ovate, oblong, globose, entire to slightly angular, 8-13 x 8-11 μ m. Phialides mixed with appressoria, opposite to alternate, ampulliform, 12-22 x 6-8 μ m. Perithecia scattered, globose, up to 145 μ m in diameter; perithecial cells mammiform, obtuse at the tip, up to 10 μ m long; ascospores obovoidal, 4-septate, constricted at the septa, 35-42 x 12-18 μ m.

Based on the digital formula 3101.4220, it can be compared with *Asteridiella glabra* (Berk. & Curt.) Hansf. and *Asteridiella uncariicola* Hansf. It differs from the former species in having straight and loosely reticulate hyphae and differs from the latter species in having shorter with only entire head cells of the appressoria (Hansford 1961).

Irenopsis kleinhoviae sp. nov. (Fig. 2)

Material examined

24.iv.2007, on leaves of *Kleinhovia hospita* L. (Sterculiaceae), Karimancode, Thiruvananthapuram, Kerala, India, coll. G.R. Archana, HCIO 48166 (type), TBGT 2902 (isotype), (MycoBank # 518399).

Coloniae amphigenae, subdensae, ad 5mm diam., confluentes. Hyphae subrectae vel undulatae, oppositae acuteque vel laxe ramosae, laxae vel arte reticulatae, cellulae 16-40 x 4-7 μ m. Appressoria alternata, unilateralis, antrorsa, subantrorsa vel retrorsa, recta vel curvula, 12-23 μ m longa; cellulae basiliares cylindratae vel cuneatae, 3-11 μ m longae; cellulae apicales globosae, ovatae, oblongae, integrae vel angularis, 8-14 x 8-11 μ m. Phialides appressorii

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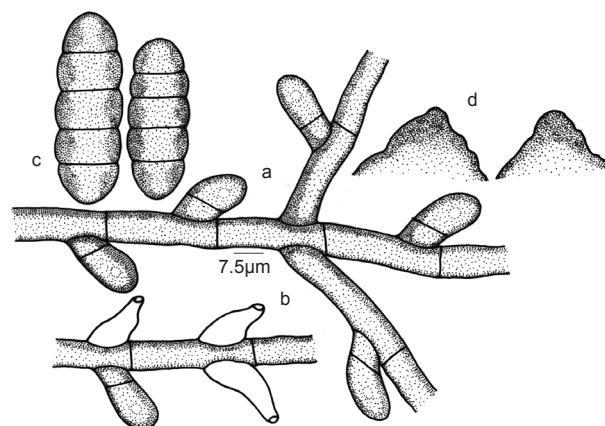


Figure 1. *Asteridiella ixorae* sp. nov.
a - Appressorium; b - Phialide; c - Ascospores; d - Perithecial wall cells

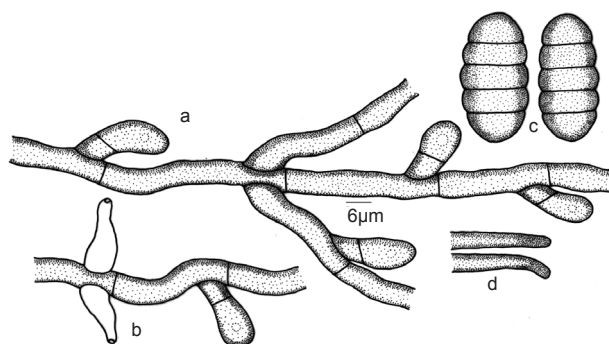


Figure 2. *Irenopsis kleinhoviae* sp. nov.

a - Appressorium; b - Phialide; c - Ascospores; d - Apical portion of the perithecial setae

intermixtae, oppositae vel alternatae, ampulliformes, 12-24 x 4-8 μm . Perithecia globosa, dispersa vel aggregata, ad 130 μm diam.; setae peritheciales 4-10 numero, simplices, rectae, pallid brunneae, septatae, ad apicem rectae, uncinatae et obtusae, ad 145 μm longae, parietis glabrus; ascosporae obovoideae, 4-septatae, leniter constrictus ad septatae, 32-43 x 11-18 μm .

Colonies amphigenous, subdense, up to 5mm in diameter, confluent. Hyphae substraight to undulate, branching opposite, alternate at acute to wide angles, loosely to closely reticulate, cells 16-40 x 4-7 μm . Appressoria alternate, unilateral, antrorse, subantrorse to retrorse, straight to curved, 12-23 μm long; stalk cells cylindrical to cuneate, 3-11 μm long; head cells globose, ovate, oblong, entire to angular, 8-14 x 8-11 μm . Phialides mixed with appressoria, opposite to alternate, ampulliform, 12-24 x 4-8 μm . Perithecia globose, scattered to grouped, up to 130 μm in diameter; perithecial setae 4-10 in number, simple, straight, pale brown, septate, straight to uncinuate at the apical part, obtuse at the tip, up to 145 μm long, smooth; ascospores obovoidal, 4-septate, slightly constricted at the septa, 32-43 x 11-18 μm .

Irenopsis buettneriicola Deight. known on *Buettneria* sp. and *Sterculia sphanoghei* from Sierra Leone and Java having both straight and uncinuate perithecial setae. However, *Irenopsis kleinhoviae* differs from it in having pale brown, smooth walled perithecial setae and shorter appressoria having entire head cells.

***Meliola ebeni* sp. nov.**

(Fig. 3)

Material examined

10.ix.2006, on leaves of *Diospyros ebenum* Koenig (Ebenaceae), TBGRI Campus, Thiruvananthapuram, Kerala, India, coll. G.R. Archana et al. HClO 48167 (type), TBGT 2903 (isotype), (Mycobank # 518400).

Coloniae amphigenae, subdensae, ad 2mm diam., confluentes. Hyphae subrectae vel anfractuae, oppositae vel irregulariter acuteque vel laxae ramosae, laxae vel arte

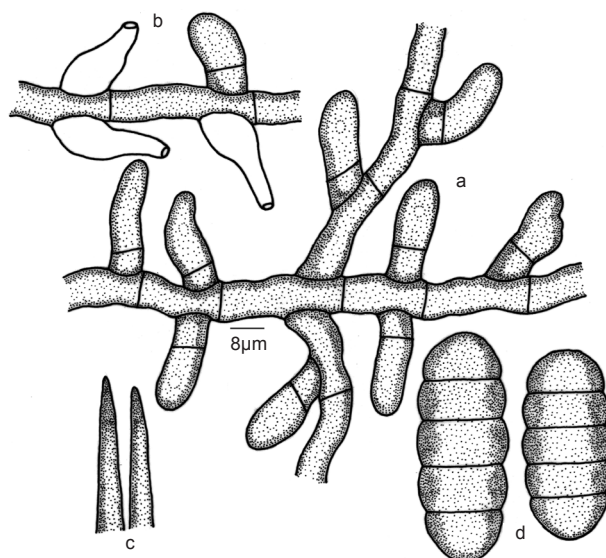


Figure 3. *Meliola ebeni* sp. nov.

a - Appressorium; b - Phialide; c - Apical portion of the mycelial setae; d - Ascospores

reticulatae, cellulae 12-32 x 4-8 μm . Appressoria opposita, alternata, unilateralis, antrorsa, subantrorsa vel retrorsa, recta vel curvula, 11-26 μm longa; cellulae basilares cylindratae vel cuneatae, 3-8 μm longae; cellulae apicales oblongae, ovatae, cylindratae, globosae, rectae vel varie curvulae, integrae vel angularis, 8-18 x 6-15 μm . Phialides appressorii intermixtae, oppositae vel alternatae, ampulliformes, 16-24 x 6-8 μm . Setae myceliales simplices, rectae, ad apicem acutae, ad 490 μm longae. Perithecia dispersa vel aggregata, ad 160 μm diam.; ascosporae obovoideae, 4-septatae, leniter constrictus ad septatae, 38-45 x 12-16 μm .

Colonies amphigenous, subdense, up to 2mm in diameter, confluent. Hyphae substraight to crooked, branching opposite to irregular at acute to wide angles, loosely to closely reticulate, cells 12-32 x 4-8 μm . Appressoria opposite, alternate, unilateral, antrorse, subantrorse to retrorse, straight to curved, 11-26 μm long; stalk cells cylindrical to cuneate, 3-8 μm long; head cells oblong, ovate, cylindrical, globose, straight to variously curved, entire to angular, 8-18 x 6-15 μm . Phialides mixed with appressoria, opposite to alternate, ampulliform, 16-24 x 6-8 μm . Mycelial setae, simple, straight, acute at the tip, up to 490 μm long. Perithecia scattered to grouped, up to 160 μm in diameter; ascospores obovoidal, 4-septate, slightly constricted at the septa, 38-45 x 12-16 μm .

Crooked mycelium with variously curved appressoria with cylindrical to oblong head cells distinguishes this species from rest of the *Meliola* species known on the members of the family Ebenaceae (Hansford 1961; Hosagoudar et al. 1997; Hu et al. 1997, 1999; Hosagoudar 2008; Hosagoudar & Agarwal 2008).

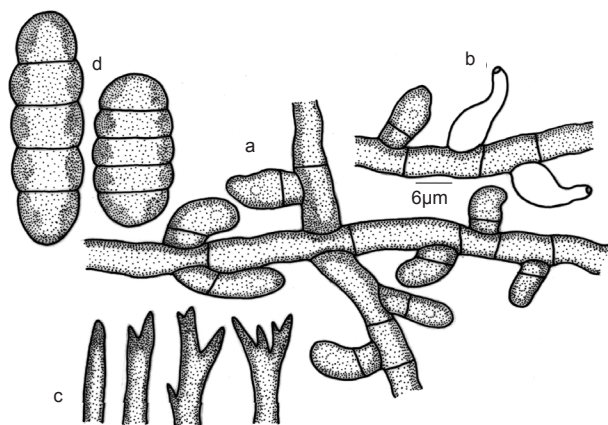


Figure 4. *Meliola filicii* Hosag. var. *indica* var. nov.
a - Appressorium; b - Phialide; c - Apical portion of the mycelial setae;
d - Ascospores

***Meliola filicii* Hosag. var. *indica* var. nov.**
(Fig.4)

Material examined

20.ii.2007, on leaves of *Filicium decipiens* (Wight & Arn.) Thw. (Sapindaceae), Ponmudi, Thiruvananthapuram, Kerala, India, coll. G.R. Archana et al. HCIO 48168 (type), TBGT 2904 (isotype), (MycoBank # 518401).

Differt a var. *filicii* setae myceliales ad apicem denatae vel furcatae.

Colonies hypophyllous, dense, up to 2mm in diameter, confluent. Hyphae straight to substraight, branching opposite alternate at acute to wide angles, loosely to closely reticulate, cells 11-24 x 4-7 μ m. Appressoria opposite

alternate, antrorse, subantrorse to retrorse, 8-15 μ m long; stalk cells cylindrical to cuneate, 2-6 μ m long; head cells ovate, globose, entire to angular, straight to curved, 6-11 x 6-8 μ m. Phialides few, mixed with appressoria, opposite to alternate, ampulliform, 9-16 x 4-7 μ m. Mycelial setae simple, straight, acute, dentate to furcate at the tip, up to 350 μ m long. Perithecia scattered to grouped, up to 196 μ m in diameter; ascospores obovoidal, 4-septate, slightly constricted at the septa, 25-37 x 8-13 μ m.

The new variety differs from the variety *filicii* in having only dentate to furcate apical tip of the mycelial setae (Hosagoudar 1996).

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