

Meliolaceae of Kerala, India – XXX new species and new records

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Irenopsis trichiliae sp. nov.

(Fig. 1)

Material examined

10.xi.2007, on leaves of *Trichilia* sp. (Meliaceae), 16th mile, Padinharathara, Wayanad, Kerala, India, coll. M.C. Riju HClO 48177 (holotype), TBGT 2913 (isotype), (Mycobank # 518227).

Coloniae epiphyllae, subdensae, dispersae, ad 2mm diam., confluentes. Hyphae rectae vel flexuosae, oppositae vel alternatim, acuteque vel laxae ramosae, laxae vel arte reticulatae, cellulae 11-33 x 6-11 μ m. Appressoria alternata, antrorsa vel subantrorsa, 13-26 μ m longa; cellulae basillares cylindratae vel cuneatae, 4-11 μ m longae; cellulae apicales globosae, angularis, sublobatae vel fortiter lobatae, 8-18 x 11-18 μ m. Phialides appressoriis intermixtae, oppositae vel unilaterales, ampulliformes, 17-24 x 6-9 μ m. Perithecia dispersa, ad 209 μ m diam.; setae peritheciales 0-5 numero, rectae, simplices, ad apicem obtusae, ad 198 μ m longae; ascosporae cylindratae, 4-septatae, leniter constrictae ad septatae, 37-46 x 15-18 μ m.

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Colonies epiphyllous, subdense, scattered, up to 2 μ m in diam., confluent. Hyphae straight to flexuous, branching opposite to alternate at acute to wide angles, loosely to closely reticulate, cells 11-33 x 6-11 μ m. Appressoria alternate, unilateral, antrorse to subantrorse, 13-26 μ m long; stalk cells cylindrical to cuneate, 4-11 μ m long; head cells globose, angular, sublobate to deeply lobate 8-18 x 11-18 μ m. Phialides mixed with appressoria, opposite to unilateral, ampulliform, 17-24 x 6-9 μ m. Perithecia scattered, up to 209 μ m in diameter; perithecial setae 0-5 in number, straight, simple, obtuse at the apex, up to 198 μ m long; ascospores cylindrical, 4-septate, slightly constricted at the septa, 37-47 x 15-18 μ m.

Irenopsis chukrasiae Hosag., *I. indica* (Anahosur) Hosag., *I. murrayae* Hosag. & Rajkumar are known on the members of the family Meliaceae (Hosagoudar 1996; Hosagoudar et al. 2001). *Irenopsis trichiliae* differs from *I. chukrasiae* in having only unicellular stalk cells of the appressoria and from *I. indica* in having straight hyphae and 0-5 perithecial setae. It also differs from *I. murrayae* in having angular to lobate head cells of the appressoria.

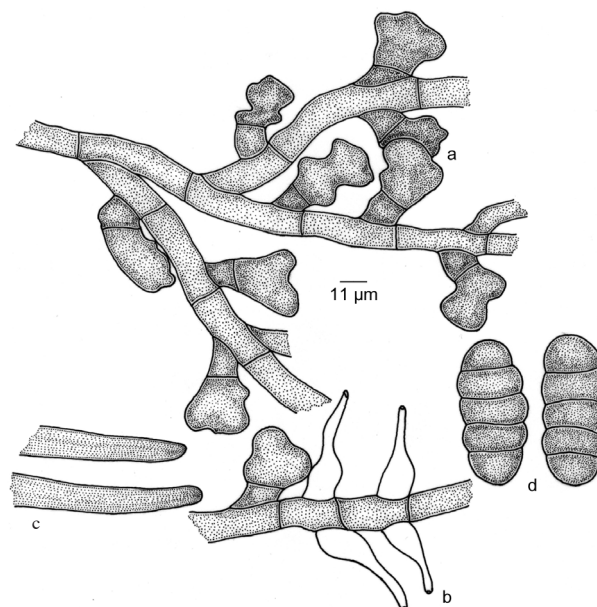


Figure 1. *Irenopsis trichiliae* sp. nov.
a - Appressorium; b - Phialide; c - Apical portion of the perithecial setae; d - Ascospores

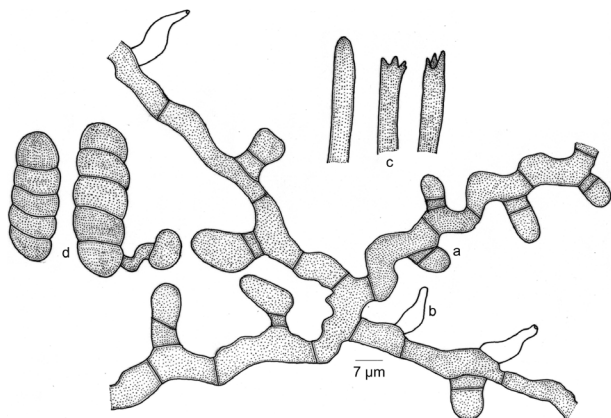


Figure 2. *Meliola ailanthicola* sp. nov.
a - Appressorium; b - Phialide; c - Apical portion of the mycelial setae; d - Ascospores

***Meliola ailanthicola* sp. nov.**
(Fig. 2)

Material examined

30.ix.2007, on leaves of *Ailanthus triphysa malabarica* (Dennst.) Alston (Simaroubaceae), 16th mile, Padinharathara, Wayanad, Kerala, India, coll. M.C. Riju HClO 48170 (holotype), TBGT 2906 (isotype), (Mycobank # 518228).

Coloniae hypophyllae, tenues, ad 4mm diam., confluentes. Hyphae anfractuae, alternate vel opposite, acuteque vel laxe ramosae, laxe vel arte reticulatae, cellulae 13-33 x 4-9 μ m. Appressoria alternata vel unilateralis, recta vel curvula, antrorsa, subantrorsa vel retrorsa, 13-27 μ m longa; cellulae basiales cylindratae vel cuneatae, 4-16 μ m longae; cellulae apicales ovatae, globosae, truncatae vel leniter lobatae, 8-13 x 6-9 μ m. Phialides appressoriis intermixtae, oppositae, alternatae vel unilateralis, ampulliformes, 13-22 x 4-9 μ m. Setae myceliales dispersae, simplices, rectae, ad apicem acutae, obtusae vel 2-5 dentatae, ad 400 μ m longae. Perithecia dispersa, ad 160 μ m diam.; ascospores obovoideae, 4-septatae, leniter constrictus ad septatae, 37-44 x 13-16 μ m.

Colonies hypophyllous, thin, up to 4mm in diam., confluent. Hyphae crooked, branching alternate to opposite at acute to wide angles, loosely to closely reticulate, cells 13-33 x 4-9 μ m. Appressoria alternate to unilateral, straight to curved, antrorse, subantrorse to retrorse, 13-27 μ m long; stalk cells cylindrical to cuneate, 4-16 μ m long; head cells ovate, globose, truncate to slightly lobate, 8-13 x 6-9 μ m. Phialides mixed with appressoria, opposite, alternate to unilateral, ampulliform, 13-22 x 4-9 μ m. Mycelial setae scattered, simple, straight, acute, obtuse to 2-5 dentate at the tip, up to 400 μ m long. Perithecia scattered, up to 160 μ m in diam.; ascospores obovoidal, 4-septate, slightly constricted at the septa, 37-44 x 13-16 μ m.

This species differs from *Meliola ailanthi* Sharma et

al. *emend.* Hosag. in having strongly appressed colonies on the lower surface of the leaves and having distinctly crooked mycelium (Hosagoudar 1996).

***Meliola kamettiae* sp. nov.**
(Fig. 3)

Material examined

29.ix.2007, on leaves of *Kamettia caryophyllata* Roxb. (Apocynaceae), 16th mile, Padinharathara, Wayanad, Kerala, India, coll. M.C. Riju HClO 48175 (holotype), TBGT 2911 (isotype), (Mycobank # 518229).

Coloniae hypophyllae, dispersae, densae, velutinae, ad 4mm diam., raro confluentes. Hyphae rectae vel subrectae, plerumque opposite acuteque vel laxe ramosae, laxe vel arte reticulatae, cellulae 13-35 x 4-7 μ m. Appressoria alternata vel unilateralis, recta, antrorsa, 11-20 μ m longa; cellulae basiales cylindratae vel cuneatae, 2-9 μ m longae; cellulae apicales ovatae, globosae, 7-13 x 6-11 μ m. Phialides appressoriis intermixtae, oppositae, alternatae, unilateralis, ampulliformes, 11-22 x 4-7 μ m. Setae myceliales numerosae, ad 260 μ m longae, simplices, rectae, paucae curvulae vel uncinatae, ad apicem obtusae, bifidae, trifidae, saepe subdentatae, furcatae vel ramosae, ramulae ad 30 μ m longae. Perithecia dispersa, ad 150 μ m diam.; ascospores cylindratae, 4-septatae, leniter constrictus ad septatae, 26-33 x 8-11 μ m.

Colonies hypophyllous, scattered, dense, velvety, up to 4mm in diam., rarely confluent. Hyphae straight to substraight, branching mostly opposite at acute to wide angles, loosely to closely reticulate, cells 13-35 x 4-7 μ m. Appressoria alternate, unilateral, straight, antrorse, 11-20 μ m long; stalk cells cylindrical to cuneate, 2-9 μ m long; head cells ovate, globose, 7-13 x 6-11 μ m. Phialides mixed with appressoria, opposite, alternate, unilateral, ampulliform, 11-22 x 4-7 μ m. Mycelial setae numerous, up to 260 μ m long, simple, straight, few slightly curved

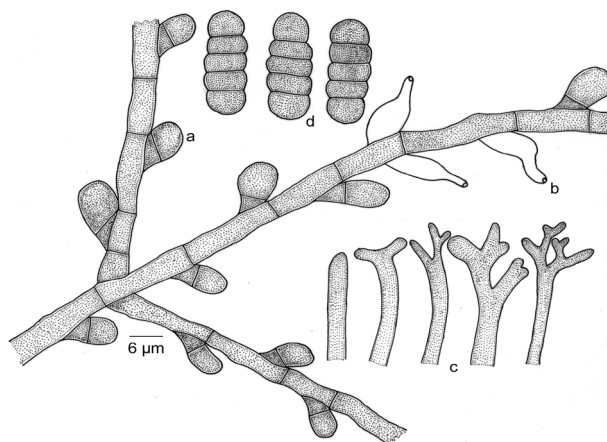


Figure 3. *Meliola kamettiae* sp. nov.
a - Appressorium; b - Phialide; c - Apical portion of the mycelial setae; d - Ascospores

to uncinatae, obtuse, bifid, trifid, often subdentate to furcated to branched at the tip, branches up to $30\mu\text{m}$ long. Perithecia scattered, up to $150\mu\text{m}$ in diam.; ascospores cylindrical, 4-septate, slightly constricted at the septa, $26\text{--}33 \times 8\text{--}11\mu\text{m}$.

Straight, slightly curved to uncinatae, obtuse, bifid, trifid, often subdentate to furcated mycelial setae distinguishes this taxon from rest of the *Meliola* species reported on the members of the family Apocynaceae (Hansford 1961; Hosagoudar 1996, 2008; Hosagoudar et al. 1997).

***Meliola psophocarp* sp. nov.**

(Fig. 4)

Material examined

30.ix.2007, on leaves of *Psophocarpus tetragonolobus* L. (Fabaceae), 16th mile, Padinharathara, Wayanad, Kerala, India, coll. M.C. Riju, HClO 48174 (holotype), TBGT 2910 (isotype), (Mycobank # 518230).

Coloniae foliicolae, fructicolae, epiphyllae, tenues, dispersae, ad 3mm diam, saepe confluentes. Hyphae undulatae, plerumque opposita laxe ramosae, laxe vel arte reticulatae, cellulae $11\text{--}33 \times 4\text{--}7\mu\text{m}$. Appressoria alternata, unilaterialis, ad 3% opposita, recta vel leniter curvula, subantrorsa vel retrorsa, $11\text{--}20\mu\text{m}$ longa; cellulae basillares cylindratae vel cuneatae, $2\text{--}11\mu\text{m}$ longae; cellulae apicales ovatae, globosae, $8\text{--}11\mu\text{m}$ diam. Phialides appressoriis intermixtae, oppositae, alternatae,

unilateralis, ampulliformes, $13\text{--}20 \times 6\text{--}9\mu\text{m}$. Setae myceliales dispersae, simplices, rectae vel leniter curvulae, ad apicem acutae vel obtusae, ad $360\mu\text{m}$ longae. Perithecia dispersa, ad $130\mu\text{m}$ diam.; ascosporae cylindratae, 4-septatae, leniter constrictus ad septatae, $33\text{--}38 \times 8\text{--}11\mu\text{m}$.

Colonies foliicolous, fructicolous, epiphyllous, thin, scattered, up to $3\mu\text{m}$ in diam., often confluent. Hyphae undulate branching mostly opposite at wide angles, loosely to closely reticulate, cells $11\text{--}33 \times 4\text{--}7\mu\text{m}$. Appressoria alternate, unilateral, up to 3% opposite, straight to slightly curved, subantrorse to retrorse, $11\text{--}20\mu\text{m}$ long; stalk cells cylindrical to cuneate, $2\text{--}11\mu\text{m}$ long; head cells ovate, globose, $8\text{--}11\mu\text{m}$. Phialides mixed with appressoria, alternate, opposite, unilateral, ampulliform, $13\text{--}20 \times 6\text{--}9\mu\text{m}$. Mycelial setae scattered, simple, straight to slightly curved, acute to obtuse at the tip, up to $360\mu\text{m}$ long. Perithecia scattered, up to $130\mu\text{m}$ in diam.; ascospores cylindrical, 4 septate, slightly constricted at the septa, $33\text{--}38 \times 8\text{--}11\mu\text{m}$.

Psophocarpus tetragonolobus is a climbing shrub, native of South East Asia, has been extensively cultivated in the backyards for its quadrangular pods used in the culinary purposes. The leaves of this plant is being infected with the black mildew fungus and is similar to *M. nyanzae* in having the same digital formula but differs from it in not being a strong parasite in producing pathogenic symptoms (Hansford 1961; Hosagoudar 1996; Hu et al. 1996, 1999).

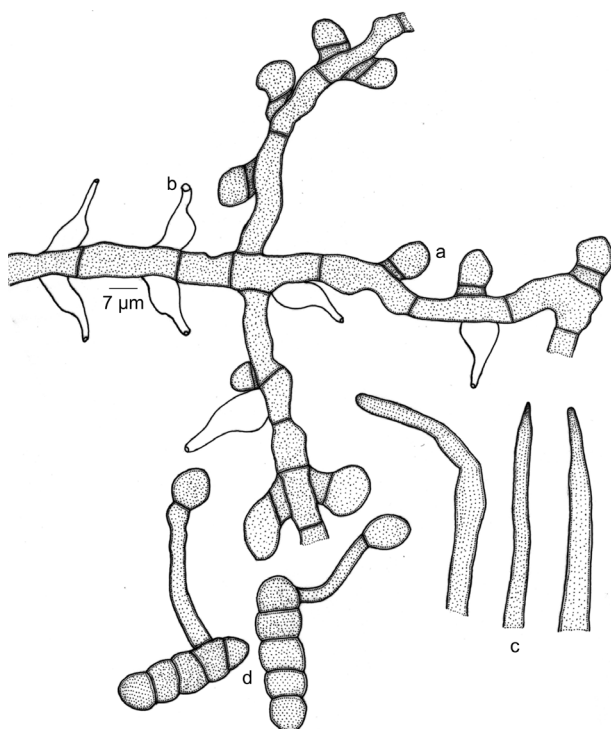


Figure 4. *Meliola psophocarp* sp. nov.

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

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