Meliolaceae of Kerala, India – XIII

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Three new species belonging to the family Meliolaceae, namely, *Asteridiella myristicacearum*, *Meliola oleacearum* and *M. shivarajui* are described and illustrated in detail.

Keywords: Meliolaceae, Ascomycetes, Kerala, taxonomy.

1. ***Asteridiella myristicacearum*** V. B. Hosagoudar, **sp. nov.** – Fig. 1.

Coloniae epiphyllae, densae, crustosae, ad 2 mm diam., raro confluentes. Hyphae plerumque rectae vel raro flexuosae, opposite vel irregulariter acutis vel obtusis angulis ramosae, laxe vel dense reticulatae, cellulae 16–19 × 8–10 µm. Appressoria alternata, dense posita, antrorsa vel subantrorsa, plerumque recta, raro recurvata, 25–40 µm longa; cellulae basilares cylindraceae vel cuneatae, 8–11 µm longae; cellulae apicales ovatae vel globosae, stellatim vel irregulariter sublobatae vel fortiter lobatae, 17–28 × 19–21 µm. Phialides appressoriis intermixtae, alternatae, ampulliformes, 15–25 × 7–9 µm. Perithecia immatura, ad 100 µm diam.; ascosporae oblongae vel leniter ellipsoideae, 4-septatae, constrictae, 41–45 × 14–21 µm.

Colonies epiphyllous, dense, crustose, up to 2 mm in diameter, rarely confluent. – Hyphae mostly straight but rarely flexuous, branching opposite to irregular at acute to wide angles, loosely to closely reticulate, cells 16–19 × 8–10 µm. – Appressoria alternate, closely arranged, antrorse to subantrorse, mostly straight, rarely recurved, 25–40 µm long; stalk cells cylindrical to cuneate, 8–11 µm long; head cells ovate to globose, stellately to irregularly sublobate to deeply lobate, 17–28 × 19–21 µm. – Phialides mixed with appressoria, alternate, ampulliform, 15–25 × 7–9 µm. – Perithecia immature, up to 100 µm in diameter. – Ascospores oblong to slightly ellipsoidal, 4-septate, constricted at the septa, 41–45 × 14–21 µm.

Holotype. – On leaves of a Myristicaceae member, Attayar, Neyyar wildlife sanctuary, Thiruvananthapuram, Kerala, India, March 19, 1997, V. B. Hosagoudar (HCIO 44140).

Isotype. – TBGT 553.

Etymology. – Referring to the host family, the Myristicaceae.

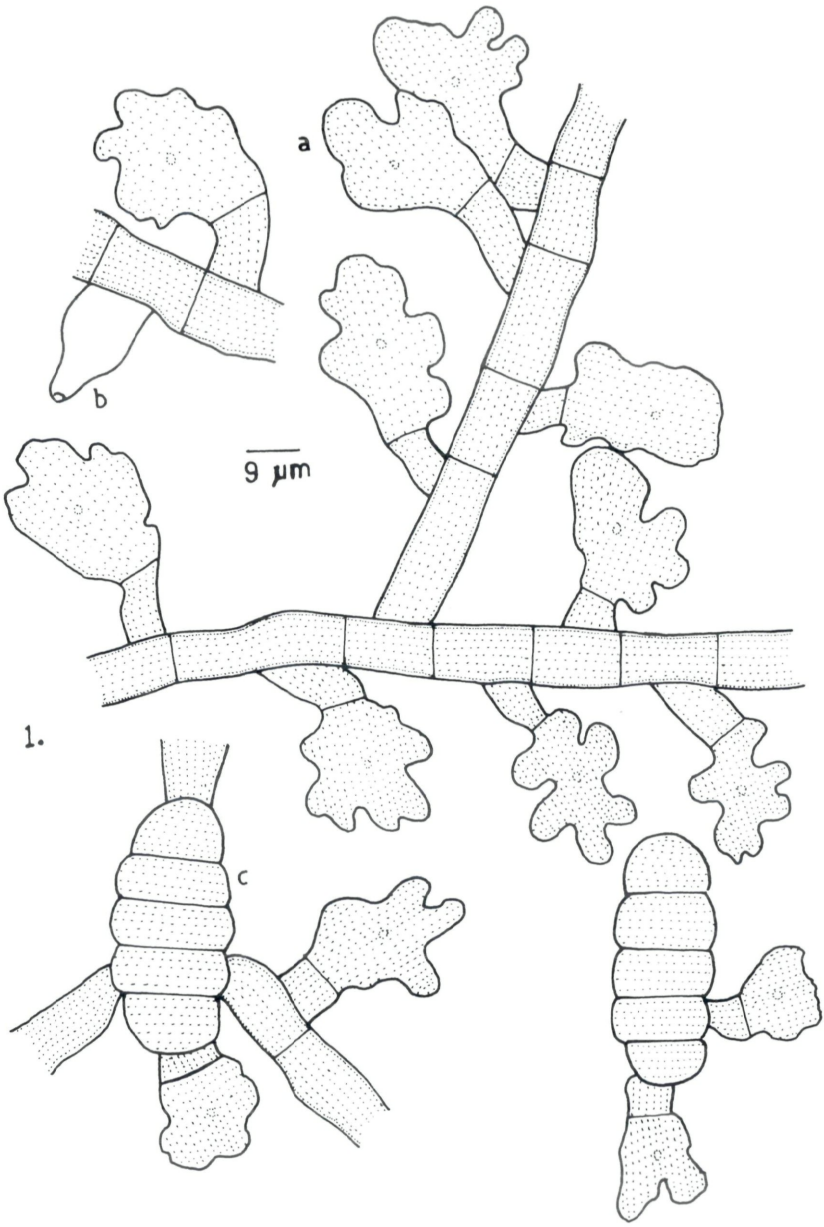

Fig. 1. – *Asteridiella myristicacearum* sp. nov. – a: Appressoria. – b: Philalides. – c: Ascospores.

This species differs from *Asteridiella knemae* Hansf. and *A. knemae* var. *microspora* Hosag. & Abraham in having stellately lobate head cells of appressoria (Hansford, 1961; Hosagoudar & Abraham, 1999).

2. ***Meliola oleacearum*** V. B. Hosagoudar, **sp. nov.** – Fig. 2.

Coloniae hypophyllae, densae, dispersae, ad 10 mm diam., confluentes. Hyphae flexuosae vel anfractuae, opposite vel irregulariter acutis angulis ramosae, laxe vel dense reticulatae, cellulae 20–26 × 4–6.5 µm. Appressoria alternata, antrorsa, retrorsa, patentia, hyphis versus curvata, 14–24 µm longae; cellulae basilares cylindraceae vel cuneatae, 3–6.5 µm longae; cellulae apicales ovatae, oblongae, anguste oblongae, cylindraceae, integrae, raro angulares vel sublobatae, rectae, curvulae vel uncinatae, 11–18 × 6–10 µm. Phialides numerosae, appressoriis intermixtae, alternatae, ampulliformes, collo longo, 20–26 × 4–6.5 µm. Setae myceliales numerosae, dispersae, simplices, rectae, flexuosae, sigmoideae, curvulae, uncinatae, ad 400 µm longae, ad apicem subobtusae vel obtusae. Perithecia dispersa, ad 120 µm diam.; ascosporae oblongae vel leniter ellipsoideae, 4-septatae, constrictae, 35–40 × 14–16 µm.

Colonies hypophyllous, dense, scattered, up to 10 mm in diameter, confluent. – Hyphae flexuous to crooked, branching opposite to irregular at acute angles, loosely to closely reticulate, cells 20–26 × 4–6.5 µm. – Appressoria alternate, antrorse, retrorse, spreading, curved towards hyphae, 14–24 µm long; stalk cells cylindrical to cuneate, 3–6.5 µm long; head cells ovate, oblong, narrowly oblong, cylindrical, entire, rarely angular to sublobate, straight, curved to

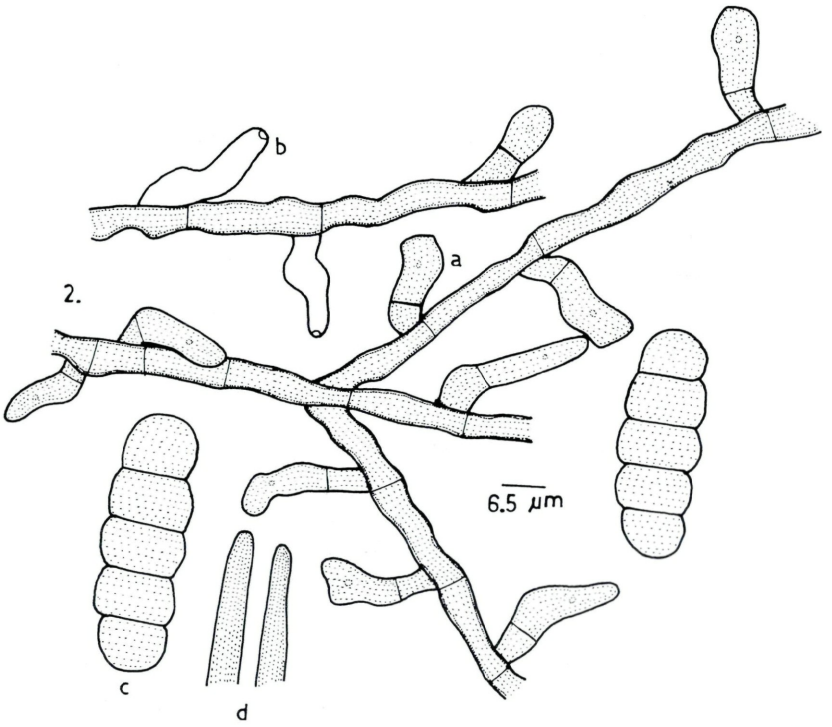

Fig. 2. – *Meliola oleacearum* sp. nov. – a: Appressoria.– b: Philalides. – c: Mycelial setae. – d: Ascospores.

uncinate, 11–18 × 6–10 µm. – Phialides many, mixed with appressoria, alternate, ampulliform, neck elongated, 20–26 × 4–6.5 µm. – Mycelial setae numerous, scattered, simple, straight, flexuous, sigmoid, curved, uncinate, up to 400 µm long, subobtuse to obtuse at the tip. – Perithecia scattered, up to 120 µm in diameter. – Ascospores oblong to slightly ellipsoidal, 4-septate, constricted, 35–40 × 14–16 µm.

Holotype. – On leaves of *Olea dioica* Roxb. (Oleaceae), in the campus of Tropical Botanic Garden and Research Institute, Palode, Thiruvananthapuram, Kerala, India, Jan. 25, 1997, V. B. Hosagoudar (HCIO 44122).

Isotype. – TBGT 556.

Etymology. – referring to the host family, the Oleaceae.

Based on curved to uncinate mycelial setae, the present collection is closer to *Meliola petiolaris* Doidge reported on *Olea laurifolia* from South Africa (Hansford, 1961) but *M. oleacearum* differs from it in having shorter appressoria and straight, sigmoid, flexuous and uncinate setae. The upper surface of the leaves was infected with *Meliola malabarensis* Hansf.

3. ***Meliola shivarajui*** V. B. Hosagoudar & M. Kamarudeen, **sp. nov.** – Fig. 3.

Coloniae amphigenae, coloniae epiphyllae breviores, coloniae hypophyllae amplae, densae, ad 3 mm diam., confluentes. Hyphae plerumque rectae, opposite vel irregulariter acutis vel obtusis angulis ramosae, laxe vel dense reticulatae, cellulae 16–23 × 6–7 µm. Appressoria alternata, plerumque antrorsa, raro subantrorsa vel recurvata, 14–21 µm longa; cellulae basilares cylindraceae vel cuneatae, 3–5 µm longae; cellulae apicales ovatae, oblongae, integrae vel raro angulares, 11–16 × 8–11 µm. Phialides numerosae, appressoriis intermixtae, alternatae, ampulliformes, 16–20 × 6–8 µm. Setae myceliales numerosae, simplices, rectae vel late curvulae sed non-uncinatae, ad 440 µm longae, ad apicem acutae, obtusae vel 2–3 minute dentatae. Perithecia dispersa vel laxe aggregata, ad 144 µm diam.; ascosporae oblongae vel leniter fusiformes, 4-septatae, constrictae, 40–47 × 16–20 µm.

Colonies amphigenous, smaller on the upper surface, while larger on the lower surface, dense, up to 3 mm in diameter, confluent. – Hyphae mostly straight, branching opposite to irregular at acute to wide angles, loosely to closely reticulate, cells 16–23 × 6–7 µm. – Appressoria alternate, mostly antrorse, often subantrorse to recurved, 14–21 µm long; stalk cells cylindrical to cuneate, 3–5 µm long; head cells ovate, oblong, entire to rarely angular, 11–16 × 8–11 µm. – Phialides numerous, mixed with appressoria, alternate, ampulliform, 16–20 × 6–8 µm. – Mycelial setae numerous, simple, straight to broadly curved but not uncinate, up to 440 µm long, acute, obtuse to 2–3 times minutely dentate at the apex. – Perithe-

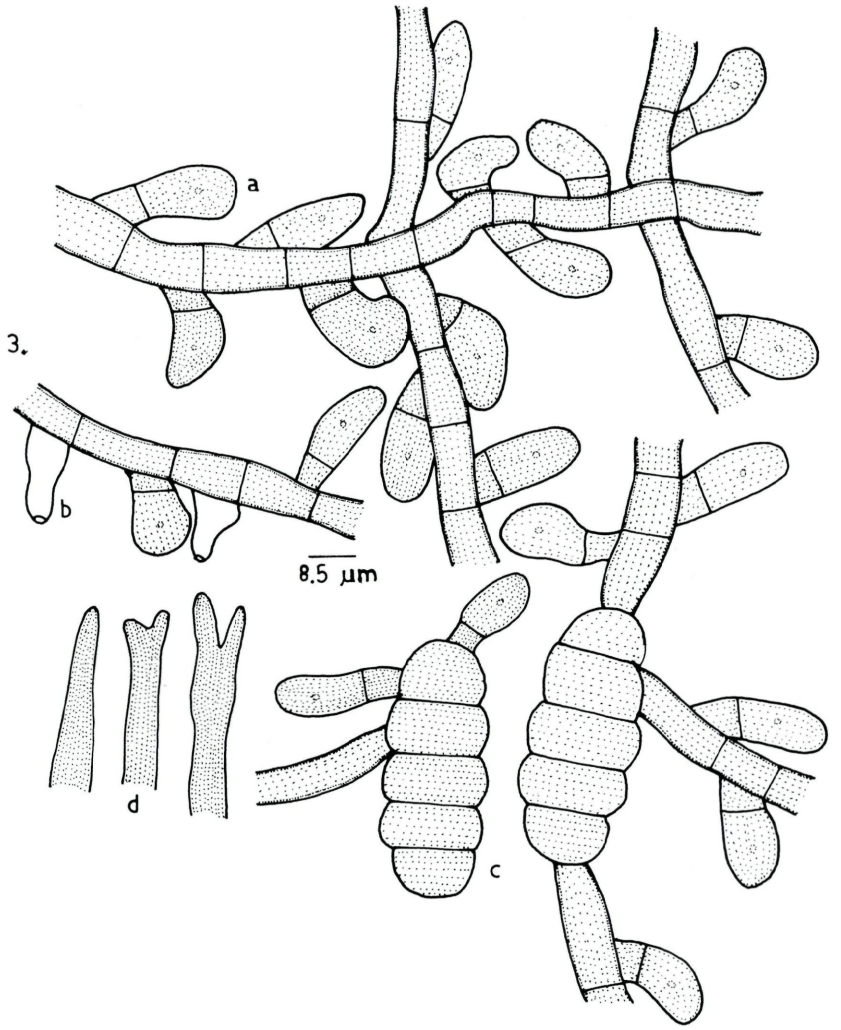

Fig. 3. – *Meliola shivarajui* sp. nov. – a: Appressoria. – b: Philalides. – c: Mycelial setae. – d: Ascospores.

cia scattered to loosely grouped, up to 144 µm in diameter. – Ascospores oblong to slightly fusiform, 4-septate, constricted at the septa, 40–47 × 16–20 µm.

Holotype. – On leaves of *Semecarpus* sp. (Anacardiaceae), Ponmudy, Thiruvananthapuram, Kerala, India, Feb. 26, 2001, M. Kamarudeen (HCIO 44150).
Isotype. – TBGT 551.

Etymology. – This species is named in honour of Dr. B. Shivaraju, Conservator of Forests.

Meliola mangiferae Earle and *M. glutae* Hosag. & Abraham are two species having entire and dentate mycelial setae (Hansford, 1961; Hosagoudar & al., 1997). However, *M. shivarajui* differs from the former species in having shorter appressoria, mycelial setae and smaller ascospores. It differs from the latter species in having shorter mycelial setae and smaller ascospores.

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