

## New fungi from Western Ghats, India

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This paper gives an account of six taxa collected from the Western Ghats' region of Peninsular India. *Asteridiella pittosporacearum*, *Meliola arkevermae*, *M. colubrinicola* and *Sarcinella embeliae* are new species; *Meliola kakkachiana* var. *poochiparensis* is a new variety, and *Palawaniella jasmini* is reported for the first time from India. These taxa are described and illustrated.

**Key words** – *Asteridiella* – Follicolous fungi – *Meliola* – *Palawaniella* – *Sarcinella*

### Article Information

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### Taxonomy

*Asteridiella pittosporacearum* Hosagoudar & Sabeena, **sp. nov.** (Fig. 1)

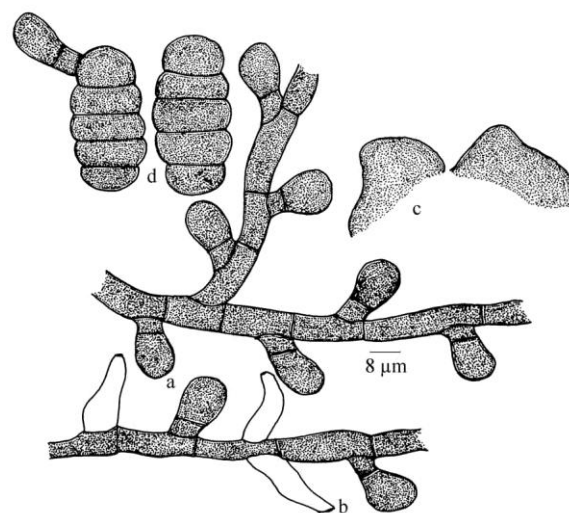
MycoBank 564145

**Etymology** – Named after the host family.

Colonies amphigenous, thin to subdense, up to 2 mm in diameter, confluent. Hyphae straight to substraight, branching opposite to irregular at acute to wide angles, loosely to closely reticulate, cells 17–30 × 5–7 µm. Appressoria alternate, antrorse to subantrorse, 12–17 µm long; stalk cells cylindrical to cuneate, 2–5 µm long; head cells globose to ovate, entire, 10–12 × 5–12 µm. Phialides mixed with appressoria, opposite, ampulliform, 15–25 × 5–10 µm. Perithecia scattered, up to 110 µm in diam.; perithecial cells conoid to mammiform, up to 22 µm long; ascospores cylindrical, 4-septate, constricted at the septa, 37–42 × 15–17 µm.

**Material examined** – INDIA, Kerala, Kottayam, Pampavalley, on leaves of *Pittosporum neelgherrense* Wight & Arn. (Pittosporaceae), 20 January 2009, Jacob Thomas & al. TBGT 5731 (holotype); isotype deposited in

HCIO, New Delhi.



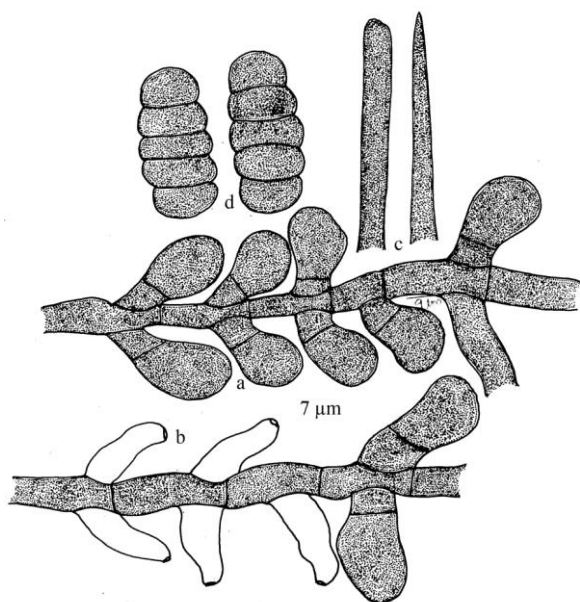
**Fig. 1** – *Asteridiella pittosporacearum* **a** Appressorium. **b** Phialide. **c** Perithecial wall cells. **d** Ascospores

Five species of the genus *Meliola* are known on the members of Pittosporaceae (Hansford 1961). However, the present collection differs from all in absence of mycelial setae and form the first species of the genus *Asteridiella* on the members of Pittosporaceae.

*Meliola arkevermae* Hosagoudar & Sabeena,  
sp. nov. (Fig. 2)

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Etymology: This species is named in honour of Dr. R.K. Verma, Scientist, Jabalpur.



**Fig. 2** – *Meliola arkevermae* **a** Appressorium. **b** Phialide. **c** Apical portion of the mycelial setae. **d** Ascospores.

Colonies epiphyllous, subdense, up to 4 mm in diameter, confluent. Hyphae straight to substraight, branching opposite to irregular at acute to wide angles, loosely to closely reticulate, cells  $17-30 \times 5-7 \mu\text{m}$ . Appressoria arranged closely by leaving an intermittent gap, part of the mycelium literally devoid of appressoria, opposite, antrorse to subantrorse, closely arranged on the hyphae,  $17-25 \mu\text{m}$  long; stalk cells cylindrical to cuneate,  $2-7 \mu\text{m}$  long; head cells oblong, ovate, entire, angular to sublobate,  $12-17 \times 12-17 \mu\text{m}$ . Phialides mixed with appressoria, alternate and opposite, ampulliform,  $15-27 \times 5-12 \mu\text{m}$ . Mycelial setae numerous, scattered, simple, straight, acute to obtuse at the tip, up to  $950 \mu\text{m}$  long. Perithecia scattered, up to  $160 \mu\text{m}$  in diam.; ascospores cylindrical, 4-septate, constricted at the septa,  $37-45 \times 12-17 \mu\text{m}$ .

Material examined – INDIA, Kerala, Kottayam, Ponthanpuzha, Valiyakavu, on leaves of Meliaceae member, 10 November 2007, P.J. Robin TBGT 5732 (holotype); isotype deposited in HClO, New Delhi.

*Meliola dysoxyl* Hansf., *M. amoora* Yates, *M. opposita* Syd. & P. Syd. *M. opposita*

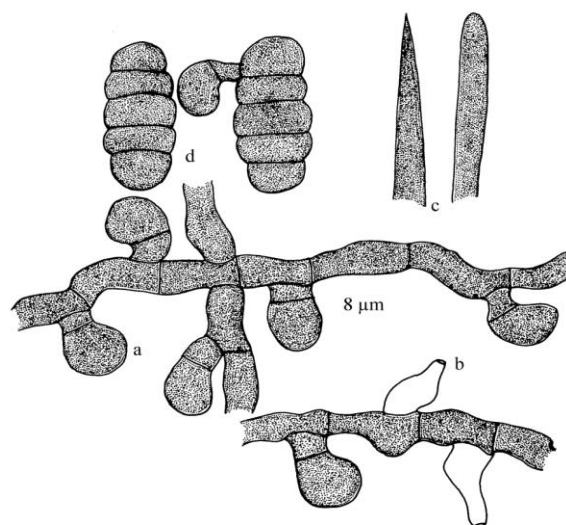
var. *africana* Hansf., *M. aglaiana* Hansf. and *M. ekebergiae* Hansf. are known on the members of Meliaceae having opposite appressoria. Of these, the present species is similar to *M. dysoxyl* and *M. opposita* var. *africana* Hansf. in having densely arranged appressoria. However, *Meliola arkevermae* differs from both in possessing intermittently densely arranged appressoria by leaving a gap or by leaving the mycelium free from appressoria (Hansford, 1961, 1963).

*Meliola colubrinicola* Hosagoudar & Sabeena,  
sp. nov. (Fig. 3)

MycoBank 564147

Etymology – Named after the host genus

Colonies hypophyllous, subdense to dense, up to 3 mm in diameter, confluent. Hyphae flexuous to crooked, branching opposite to irregular at acute to wide angles, loosely to closely reticulate, cells  $25-40 \times 5-7 \mu\text{m}$ . Appressoria alternate, antrorse, subantrorse to retrorse,  $15-20 \mu\text{m}$  long; stalk cells cylindrical to cuneate,  $2-7 \mu\text{m}$  long; head cells oblong, ovate, entire,  $10-15 \times 10-15 \mu\text{m}$ . Phialides mixed with appressoria, alternate to opposite, ampulliform,  $12-25 \times 5-7 \mu\text{m}$ . Mycelial setae scattered, simple, straight, up to  $850 \mu\text{m}$  long, acute to obtuse at the tip. Perithecia scattered, up to  $200 \mu\text{m}$  in diam.; ascospores ellipsoidal to oblong, 4-septate, constricted at the septa,  $37-42 \times 12-15 \mu\text{m}$ .



**Fig. 3** – *Meliola colubrinicola*. **a** Appressorium. **b** Phialide. **c** Apical portion of the mycelial setae. **d** Ascospores.

Material examined – INDIA, Kerala, Kottayam, Ponthanpuzha, on leaves of *Colubrina travancorica* Bedd. (Rhamnaceae), 25 November 2009, P.J. Robin & al. TBGT 5733 (holotype); isotype in HCIO, New Delhi.

*Asteridiella colubrinae* (Stev.) Hansf. known on *Colubrina ruffa* from Panama but the present species differs from it in having mycelial setae (Hansford, 1961).

***Meliola kakachiana* Hosag. var. *poochiparaensis* Hosagoudar & Sabeena, var. nov. (Fig. 4)**

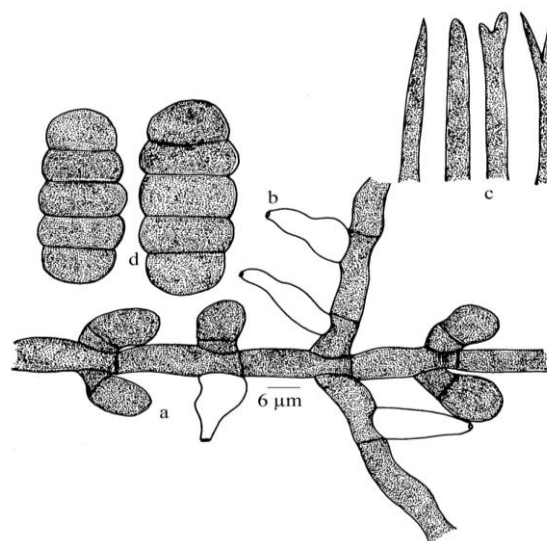
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Etymology – Named after its collection locality

Colonies hypophyllous, subdense, up to 3 mm in diameter, confluent. Hyphae straight to substraight, branching opposite to unilateral at acute to wide angles, loosely to closely reticulate, cells 17-35 × 5-7 μm. Appressoria alternate, about 40% opposite, antrorse to subantrorse, 12-17 μm long; stalk cells cylindrical to cuneate, 2-5 μm long; head cells globose, entire, 10-12 × 12-15 μm. Phialides mixed with appressoria, alternate to opposite, ampulliform, 12-20 × 5-10 μm. Mycelial setae numerous, scattered, simple, straight, up to 950 μm long, acute, obtuse to dentate at the tip. Perithecia scattered, up to 190 μm in diam.; ascospores cylindrical to oblong, 4-septate, constricted at the septa, 40-45 × 17-22 μm.

Material examined – INDIA, Kerala, Palghat, Silent Valley, Poochippara, on leaves of *Litsea* sp. (Lauraceae), 8 March 2010, P.J. Robin & al. TBGT 5734 (holotype); isotype in HCIO.

Based on the alternate and opposite appressoria and digital formula it is similar to *M. dactylipoda* Sydow var. *brevipoda* Hansf. and *M. acutisata* Sydow known on *Cryptocarya patentinervis* and *Persea piriformis* from New South Wales and Philippines. However, differs from both in having shorter appressoria and globose head cells. This collection is similar to the assigned species but differs from it in having more number of opposite appressoria and smaller ascospores (Hansford, 1961).



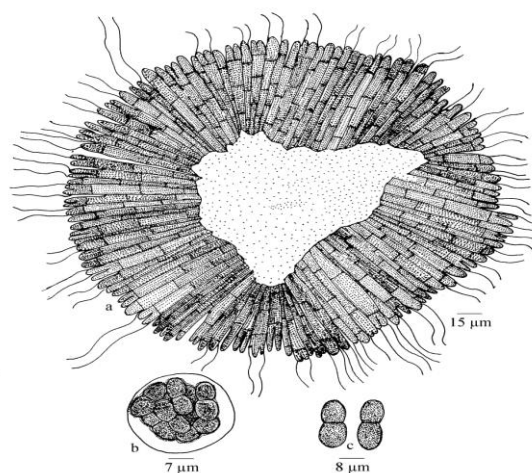
**Fig. 4** – *Meliola kakachiana* var. *poochiparaensis* **a** Appressorium. **b** Phialide. **c** Apical portion of the mycelial setae. **d** Ascospores.

***Palawaniella jasmini* (Doidge) Arx & Müller, Studies in Mycology 9: 37, 1975.**

*Ferrarisia jasmini* Doidge, Bothalia 4(2): 278, 1942.

*Cyclopeltis jasmini* (Doidge) Bat., Nascim. & A.F. Vital, Publicações do Instituto de Micologia da Universidade do Recife 1:367, 1960. **(Fig. 5)**

Colonies hypophyllous, dense, up to 8 mm in diameter, confluent. Hyphae absent. Thyriothecia closely scattered, scattered to connate, more or less orbicular, up to 250 μm in diameter, stellately dehiscent at the centre, margin crenate to fimbriate; asci octosporous, mostly globose, up to 30 μm in diameter; ascospores, conglobate, 1-septate, constricted at the septa, 15-20 × 7-10 μm, wall smooth.



**Fig. 5** – *Palawaniella jasmini* **a** Thyriothecium. **b** Ascus. **c** Ascospores.

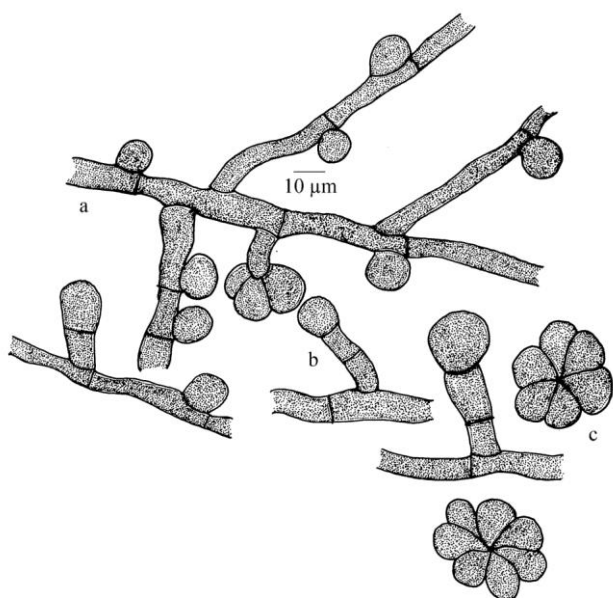
Material examined – INDIA, Kerala, Palghat, Silent Valley National Park, Pannamala, on leaves of *Jasminum* sp. (Oleaceae), 22 February, 2009, S.S. Shaji TBGT 5735. Part of the collection has been deposited in HCIO, New Delhi.

Doidge (1942) described *Ferrarisia jasmini* and Batista *et al.* (1960) made a new combination of it as *Cyclopeltis jasmini* (Doidge) Bat. *et al.* Arx & Müller (1975) confirmed it as a species of the genus *Palawaniella*. This species was known on *Jasminum angular* from South Africa and is reported here for the first time from India (Bilgrami *et al.* 1991; Jamaluddin *et al.* 2004).

***Sarcinella embeliae* Hosagoudar & Sabeena, sp. nov. (Fig. 6)**

MycoBank 564149

Etymology: Named after host genus



**Fig. 6** – *Sarcinella embeliae* **a** Appressoriate mycelium. **b** Conidiophores. **c** Conidia.

Colonies amphigenous, subdense to dense, up to 5 mm in diameter, confluent. Hyphae brown, straight to substraight, branching opposite, alternate to unilateral at acute to wide angles, loosely to closely reticulate, cells 10–25 x 5  $\mu$ m. Appressoria alternate to unilateral, unicellular, globose, broad based, entire, 7–12 x 10–12  $\mu$ m. *Sarcinella* conidiophores produced lateral to the hyphae, single, straight, mononematous; conidiogenous cells terminal, monoblastic, integrated, cylindrical. *Sarcinella* conidia blas-

tic, terminal, mostly sessile, solitary, ovate to globose, sarciniform, 2–7 celled, constricted at the septa, 22–25  $\mu$ m in diameter, wall smooth.

Material examined – INDIA, Maharashtra, Satara, on leaves of *Embelia tsjeriamcottam* (Roemer & Schultes) A.DC. (Myrsinaceae), 3 December, 2008, V.B. Hosagoudar & al. TBGT 5736 (holotype); isotype in HCIO.

*Qustieriella ardisiae* Hosag. & Vijayakumar is known on *Ardisia solanacea* from Kerala (Hosagoudar, 2003; Hosagoudar, 2011). However, presence of only *Sarcinella* conidia warrants its placement in a new species of the form genus *Sarcinella*. We could examine scattered thyriothecia measured up to 112  $\mu$ m in diameter but they did not reveal asci or ascospores.

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