

# THREE NEW FUNGI FROM KERALA, INDIA

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**Abstract:** This paper gives an account of three new black mildew fungi collected from Kerala state, namely, *Asterina melastomatigena*, A. terminaliae-paniculatae and Irenopsis macarangigena from the infected the leaves of Melastomataceae member, *Terminalia paniculata* and *Macaranga peltata*, respectively. All these fungi are described and illustrated in detail.

Keywords: India, Kerala, new species, black mildews, Asterina, Irenopsis.

## **INTRODUCTION**

Asterina melastomatigena V.B. Hosagoudar and Sony Thomas, sp. nov. (Fig.1)



**Asterina melastomatigena:** a. Appressoriate mycelium, b. Thyriothecium, c. Ascus, d. Ascospores

Colonies epiphyllous, scattered, subdense, up to 2mm in diameter. Hyphae substraight, flexuous to crooked, branching opposite to irregular at acute to wide angles, closely reticulate, cells 20-25 x 2-4 $\mu$ m. Appressoria alternate to unilateral, more scattered, unicellular, straight to curved, ovate, oblong to globose, entire, angular, sublobate to lobate, 10-12 x 5-6 $\mu$ m. Thyriothecia scattered, loosely to closely grouped, orbicular, up to 180 $\mu$ m in diameter, stellately dehisced at the centre, margin crenate; asci ovate to globose, octosporous, 22-25 x 20-22 $\mu$ m; ascospores oblong, 1-septate, slightly constricted at the septum, 17-20 x 7-10 $\mu$ m, wall smooth.

Material examined: On leaves of Melastomataceae member (Osbeckia / Melastoma), Ponnamkudathu

Kaavu, North Paravoor, Eranakulam, Kerala, October 17, 2012, V. B Hosagoudar & al TBGT 6594 (holotype).

Distantly placed, entire to lobate head cells of the appressoria distinguishes this species from others known on the members of the family Melastomataceae (Stevens, Ryan, 1939).

**Asterina terminaliae-paniculatae** V.B. Hosagoudar and Sony Thomas, sp. nov. (Fig.2)



**Asterina terminaliae-paniculatae:** a. Appressoriate mycelium, b. Thyriothecium, c. Ascus, d. Ascospores

Colonies epiphyllous, thin, spreading, up to 3 mm in diameter, confluent. Hyphae straight to substraight, branching opposite to alternate at acute to wide angles, loosely reticulate, cells 17-22 x 3-5 $\mu$ m. Appressoria 2-celled, alternate, straight to curved, antrorse, retrorse to spreading, 10-12 $\mu$ m long; stalk cells cylindrical to cuneate, 2-5 $\mu$ m long; head cells globose, ovate to oblong, entire, 5-10 x 2-5 $\mu$ m. Thyriothecia scattered, orbicular, stellately dehisced at



\*Corresponding Author: Dr. VB Hosagoudar, Jawaharlal Nehru Tropical Botanic Garden and Research institute, Palode-695 562, Thiruvananthapuram, Kerala, India. the centre, up to 130µm in diameter; asci few to many, globose, octosporous, bitunicate, 20-25 x 20-22µm in diam.; ascospores brown, oblong, uniseptate, constricted at the septum, 12-17 x 7-10µm, wall smooth. Pycnothyriospores many, scattered in the colonies, unicellular, pyriform, brown, 11-13 x 6-8µm.

**Material examined:** On leaves of *Terminalia* paniculata Roth. (Combretaceae), Thattekad Bird sanctuary, Ernakulam, Kerala, October 17, 2012, V. B Hosagoudar & al TBGT 6595 (holotype).

This species differs from all Asterina species reported on the members of the family Combretaceae in having entire, ovate to narrowly oblong head cells of appressoria (Doidge, 1942; Stevens & Ryan, 1939; Hosagoudar, 2012). This species was associated with Asteridiella combreti var. Leonensis.

*Irenopsis macarangigena* V.B. Hosagoudar and Sony Thomas, sp. nov. (Fig.3)



*Irenopsis macarangigena*: a. Appressorium, b. Phialide, c. Perithecial setae, d. Ascospores

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

flexuous, branching opposite to alternate at acute to wide angles, loosely to closely reticulate, cells 22-30 x 5-7µm. Appressoria alternate to unilateral, straight to curved, antrorse, subantrorse to retrorse, 20-25µm long; stalk cells cylindrical to cuneate, 5-7µm long; head cells globose, oblong, entire to rarely angular, 15-17 x 10-12µm. Phialides mixed with appressoria, alternate to opposite, ampulliform 15-20 x 5-7µm. Perithecia scattered, globose, up to 130µm in diameter; straight, perithecial setae simple, substraight, flexuous, curved to uncinate at the penultimate end, acute to obtuse at the tip, up to 150µm long; ascospores cylindrical, 4-septate, slightly constricted at the septa, 35-37 x 12-17µm.

**Material examined:** On leaves of *Macaranga peltata* (Roxb.) Muel-Arg. (Euphorbiaceae), Kallil Bhagavati Temple Kaavu, Perumbavoor, Ernakulam, Kerala, October 15, 2012, V. B Hosagoudar & al TBGT 6596 (holotype).

Irenopsis macarangae Hansf. is the only species known on Macaranga schweinfurthii from Uganda (Hansford, 1961). However, Irenopsis macarangigena differs from it in having the perithecial setae substraight, flexuous, curved to uncinate at the penultimate end in contrast to straight setae.

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