STUDIES ON FOLIICOLOUS FUNGI XII NEW SPECIES, NEW RECORDS AND HYPERPARASITES

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Abstract

This paper deals with five foliicolous fungi including two hyperparasites. Of these, two species of genus *Asterina* are new, while *Lembosia ormosiae* is a new record to India. *Acrodictys balladynae* and *Spiropes dialii* are hyperparasites known for the first time from India.

Keywords

Foliicolous, fungi, hyperparasites, Kerala, new records, new species

Abbreviations

HCIO - Herbarium Cryptogamae Indiae Orientalis, New Delhi
TBGT - Tropical Botanic Garden, Thiruvananthapuram

Asterina lanneae **V.B. Hosagoudar *et* A. Manojkumar sp. nov.**
(Fig. 1)

Material examined

Holotype: 4.x.2002, Placherry forest, Ranni, Pathanamthitta, Kerala, India, on leaves of *Lannea coromandelica* (Houtt.) Merr. (Anacardiaceae), coll. A. Manojkumar, HCIO 44616 (p.p.).
Isoptype: TBGT 898 (p.p.).

Etymology

Named after the host genus *Lannea*.

Diagnostic features

Coloniae epiphyllae, densae, crustosae, ad 5mm diameter, confluentes. Hyphae rectae vel subrectae, plerumque opposite acuteque ramosae, laxe vel dense reticulatae, cellulae 14-18 x 3-5µm. Appressoria opposita, ad 10% solitaries vel unilateralis, ovata, conoidea, integra vel variae lobata, 8-10 x 4-7µm. Thyriothecia dispersa vel aggregata, connata, orbicularis, ad 200µm diameter, margine fimbriatae vel crenatae, hyphae fringiorae paucae, flexuosae, stellato dehiscentes ad centro; asci globosi, octospori, 30-40µm diameter; ascosporae conglobatae, brunneae, uniseptatae, 19-21 x 9-11µm, parietus punctatus.

Colonies epiphyllous, dense, crustose, up to 5mm in diameter, confluent. Hyphae straight to substraight, branching mostly opposite at acute angles, loosely to closely reticulate, cells 14-18 x 3-5µm. Appressoria opposite, about 10% solitary or unilateral, ovate, conoid, entire to variously lobed, 8-10 x 4-7µm. Thyriothecia scattered to grouped, often connate, orbicular, up to 200µm in diameter, margin fimbriate to crenate, fringed hyphae few, flexuous, stellately dehisced at the centre; asci globose, octosporous, 30-40µm in diameter; ascospores conglobate, brown, uniseptate, 19-21 x 9-11µm, wall punctate.

Remarks

Asterina anacardii (Ryan) Hosagoudar and Abraham, *A. drimycarpi* Kar and Maity and *A. nothopegiae* Ryan are known on the members of Anacardiaceae (Hosagoudar & Abraham, 2000). Opposite and conoid appressoria of *Asterina lanneae* is similar to *A. nothopegiae* Ryan known on *Nothopegia* species from India (Ryan, 1928; Hosagoudar *et al*., 1996). However, the new species differs from it in having mostly opposite but 10% solitary appressoria, shorter ascospores with punctate wall.

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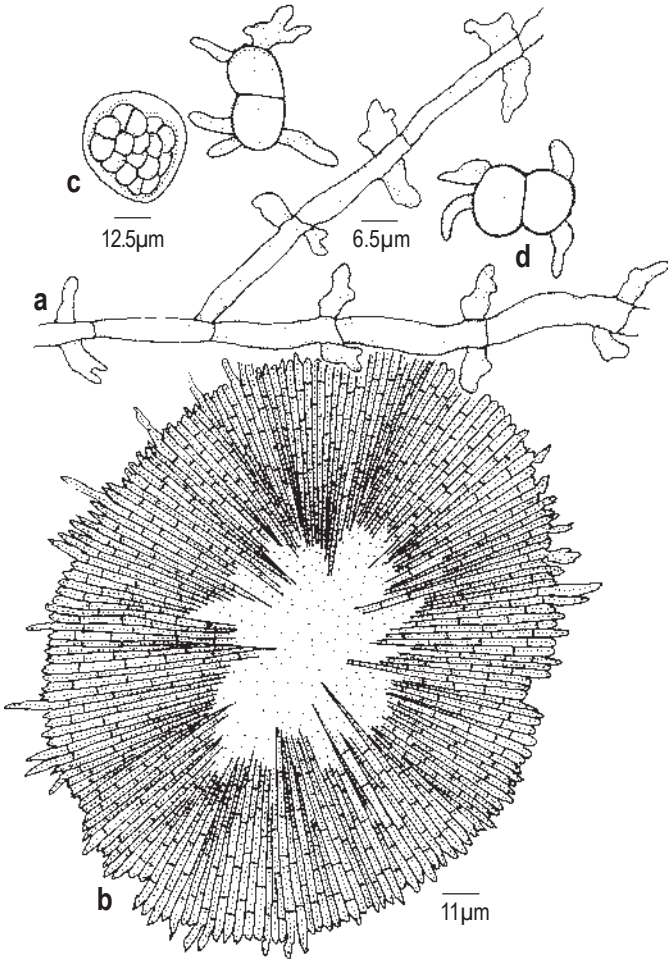

Figure 1. **Asterina lanneae** ***sp. nov.***
a - Appressoriate mycelium; b - Thyriothecium; c - Ascus; d - Ascospores

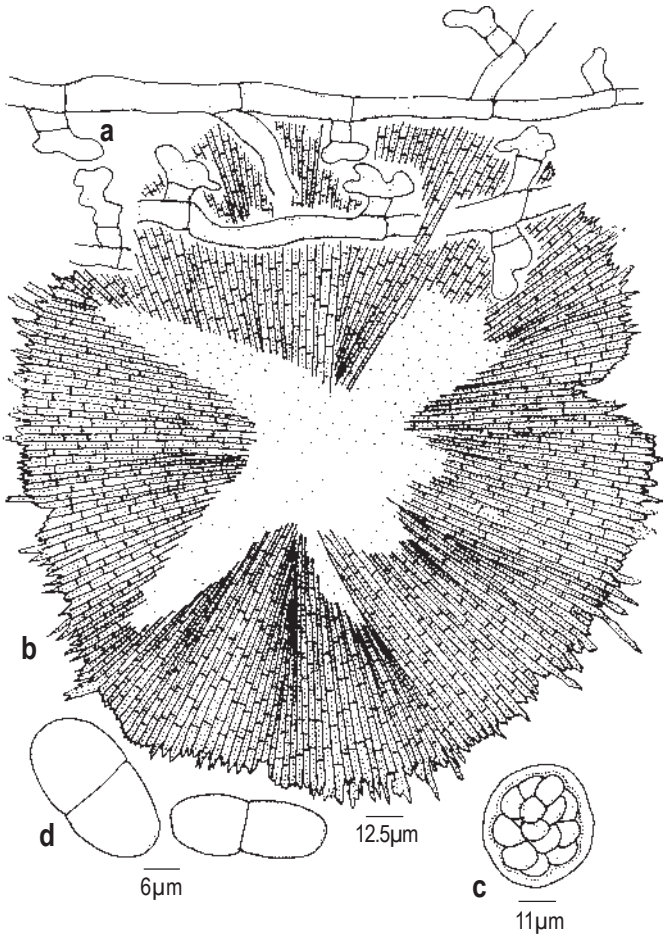

Figure 2. **Asterina samaderae** ***sp. nov***
a - Appressoriate mycelium; b - Thyriothecium; c - Ascus; d - Ascospores

Asterina samaderae **V.B. Hosagoudar et A. Manojkumar, sp. nov.**
(Fig. 2)

Material examined
Holotype: 3.x.2002, Vandanam Sacred Grove, Alapuzha, Kerala, India, on leaves of *Samadera indica* Gaertn. (Simaroubaceae), coll. A. Manojkumar, HCIO 44615.
Isotype: TBGT 897.

Etymology
Named after the host genus *Samadera*.

Diagnostic features
Coloniae hypophyllae, subdensae, patentiae, ad 5mm diameter, confluentes. Hyphae rectae, subrectae vel anfractuae, irregulariter acuteque vel laxe ramosae, laxe reticulatae, cellulae 20-28 x 3-5µm. Appressoria dispersa, alternata, unilateralis, ad 5% opposita, antrorsa, subantrorsa, retrorsa, 9-13µm longa; cellulae basalis cylindraceae vel cuneatae, 3-5µm longae; cellulae apicalis ovatae, oblongae, conoideae, globosae, integrae, angularis, bifidae vel et fortiter lobatae, rectae vel varie curvulae, 6-8 x 4-10µm. Thyriothecia dispersa vel laxe aggregata, orbicularis, ad 250µm diameter, margine crenatae vel leniter fimbriatae, hyphae fringiorae breviter, stellato dehiscentes ad centro; asci pauci, globosi, octospori, 30-40µm diameter; ascosporae oblongae, conglobatae, brunneae, uniseptatae, leniter constrictae, 25-30 x 11-13µm.

Colonies hypophyllous, subdense, water soaked, spreading,

up to 5mm in diameter, confluent. Hyphae straight, substraight to crooked, branching irregular at acute to wide angles, loosely reticulate, cells 20-28 x 3-5µm. Appressoria scattered, alternate, unilateral, up to 5% opposite, antrorse, subantrorse, retrorse, 9-13µm long; stalk cell cylindrical to cuneate, 3-5µm long; head cells ovate, oblong, conoid, globose, entire, angular, bifid to variously and deeply lobate, straight to variously curved, 6-8 x 4-10µm. Thyriothecia scattered to loosely grouped, orbicular, up to 250µm in diameter, margin crenate to slightly fimbriate, fringed hyphae small, stellately dehisced at the centre; asci few, globose, octosporous, 30-40µm in diameter; ascospores oblong, conglobate, brown, 1-septate, slightly constricted at the septum, 25-30 x 11-13µm, wall smooth.

Remarks

Asterina lobata Sydow & Sydow is known on the host *Picrasma philippensis* of Simaroubaceae from Philippines (Sydow & Sydow, 1912; Hosagoudar & Abraham, 2000). However, *Asterina samaderae* differs from it in having two-celled appressoria and larger ascospores.

***Acrodictys balladynae* (Hansf.) M.B. Ellis**

Dematiaceous Hyphomycetes, p. 129, 1971.

(Fig. 3)

Acrospeira balladynae Hansf., Proc. Linn. Soc. London 157: 40, 1945.

Material examined

5.ii.2002, Chandanathode forest, Wyanad, Kerala, India on *Balladyna* sp. infected leaves of *Pavetta* sp. (Rubiaceae), coll. M. Kamarudeen, HCIO 44515, TBGT 801.

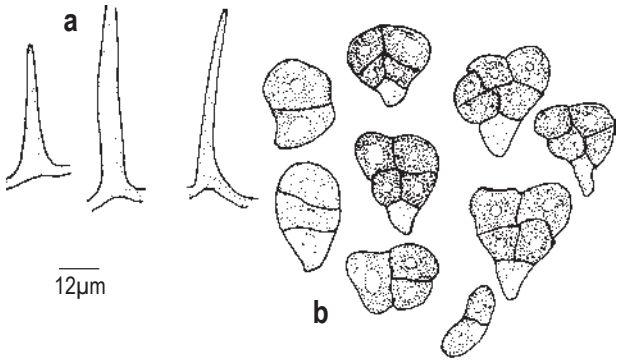

Figure 3. **Acrodictys balladynae** ***(Hansf.) M.B. Ellis***
a - Conidiophores; b - Conidia

Diagnostic features

Colonies amphigenous, mostly hypophyllous, dense, crustose to velvety, up to 5mm in diameter. Hyphae superficial, pale, branched, septate, 1.5-2.5µm broad. Conidiophores macronematous, mononematous, simple, cinnamon brown, erect, straight, smooth, rarely septate, slightly tapering towards apex, 30-40µm long; 3-5µm broad at the base; 1.5-3µm broad at the tip. Conidia solitary, dry, terminal, obpyriform, clavate, broadly triangular, brown to black, upper stratum with 2-3-cells, second stratum with two cells and the lowest basal cell pale, 17-20µm long; 13-15µm broad at the upper portion, 9-12µm broad at the second cell layer and up to 3µm broad at the basal cell.

Remarks

This species was known from Ghana, Sierra Leone and Uganda (Ellis, 1971) and is reported here for the first time from India (Bilgrami *et al*., 1991).

***Lembosia ormosiae* Yamamoto**

Sci. Rep. Hyogo Univ. Agric., Agric. Biol. Ser. II. 3: 28, 1957

(Fig. 4)

Material examined

24.iv.2002, in the campus of Tropical Botanic Garden and Research Institute, Palode, Thiruvananthapuram, Kerala, India, on leaves of *Ormosia travancorica* Beddome (Fabaceae), coll. T. Sabu, HCIO 44643, TBGT 925.

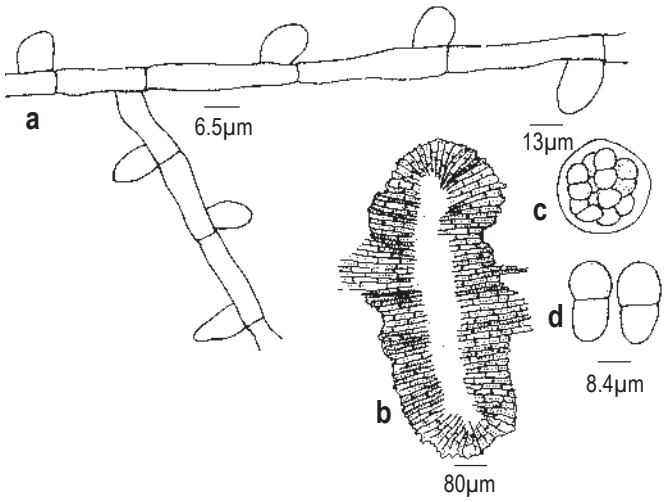

Figure 4. **Lembosia ormosiae** ***Yamamoto***
a - Appressoriate mycelium; b - Thyriothecium; c - Ascus; d - Ascospores

Diagnostic features
Colonies epiphyllous, dense, crustose, up to 2mm in diameter, confluent. Hyphae straight to substraight, branching opposite to irregular at acute to wide angles, loosely to closely reticulate, cells 19-24 x 4-6µm. Appressoria alternate, unilateral, rarely about 1% opposite, ovate, globose, mammiform, truncate to attenuated at the apex, straight to curved, entire to angular to rarely slightly sublobate, 6-10 x 6-8µm. Thyriothecia scattered, loosely grouped to rarely connate, straight to curved, 400-800 x 70-90µm, dehisce vertically at the centre, margin fimbriate to crenate; asci globose, octosporous, 35-40µm in diameter; ascospores oblong, conglobate, brown, uniseptate, slightly constricted at the septum, 19-21 x 7-9µm, wall smooth.

Remarks
This species was known on *Ormosia formosana* from Taiwan (Yamamoto, 1957) and is reported here for the first time from India on hitherto unrecorded host.

***Spiropes dialii* (Bat.) Ellis**
Dematiaceous Hyphomycetes, p. 256, 1971.
(Fig. 5)

Materials examined
1.ix.2002, in the forest near Kushavoor, Palode, Thiruvananthapuram, Kerala, on the colonies of *Meliola smilacis,* on the leaves of *Smilax* sp. (Smilacaceae), coll. A. Manojkumar, HCIO 44588, TBGT 875.

Diagnostic features
Colonies dark, velvety, up to 2mm in diameter. Synnemata scattered, simple, straight, erect, up to 1176µm long, up to 50µm broad at the base, up to 20µm broad in the middle and up to 50µm broad at the apex, conidiophores spread at the apex of the synnemata, conidia fusiform, obclavate, bottle shaped, 3-septate, rostrate, 24-40µm long, the two middle cells up to 8µm broad, apical cell beaked, up to 3µm broad, base hinged, up to 3µm broad.

Remarks
This fungus is known here for the first time from India (Bilgrami *et al.,* 1991).

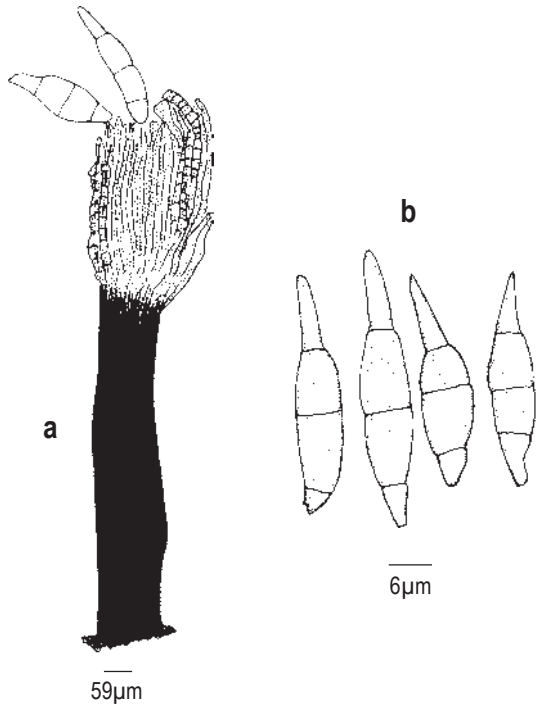

Figure 5. **Spiropes dialii** ***(Bat.) Ellis***
a - Synnematum; b - Conidia

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