

STUDIES ON FOLIICOLOUS FUNGI – XV  
**NEW SPECIES, NEW RECORDS AND A RARE FUNGUS**

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**Abstract**

This paper deals with an account of five leaf infecting micro fungi collected from Kerala State. Of these, *Balladynopsis sivanesanii*, *Questieriella ardisiae* and *Sarcinella tectonae* are new species, while *Asterina memecylonis* is an endemic and rare fungus, *Asterina murrayae* is a new record for India. All these fungi are described and illustrated in detail.

**Keywords**

*India, Kerala, new records, new species, rare foliicolous fungi*

**Abbreviations**

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

***Asterina memecylonis* Ryan, 1921**

1921. Ryan, Mem. Dept. Agric. India 15: 105 (*Memecyloinae*).  
 (Fig. 1)

**Materials examined**

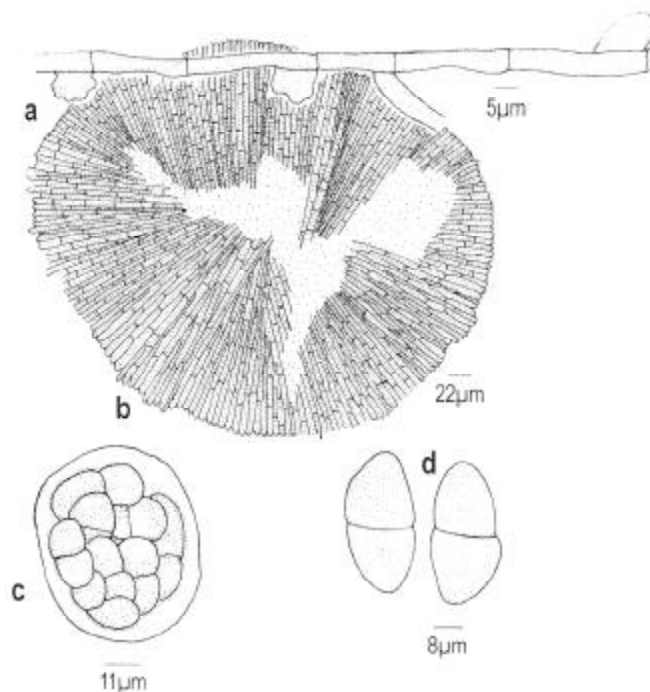
24.iv.2002, In the campus of Tropical Botanic Garden and Research Institute, Palode, coll. T. Sabu, on leaves of *Memecylon sylvaticum* (Melastomataceae), HCIO 44585, TBGT 872.

**Diagnostic features**

Colonies amphigenous, subdense to dense, up to 2mm in diameter, confluent. Hyphae straight, branching alternate, opposite to irregular at acute angles, loosely to closely reticulate, cells 28-32 x 4-7µm. Appressoria scattered, alternate, unicellular, broad based, mammiform, globose, entire, angular, crenately lobate to slightly lobate, 11-13 x 11-15µm. Thyriothecia scattered, orbicular, up to 44µm in diameter, crenate at margin, irregularly dehisce at the centre; asci few, globose to ovate, octosporous, 56-62µm in diameter; ascospores brown, conglobate, uniseptate, constricted at the septum, taper at both the ends, 38-42 x 14-16µm.

**Remarks**

The present collection matches well with the species assigned to it except for the larger thyriothecia. This species was known from Karwar, Karnataka (Ryan, 1928).



**Fig. 1. *Asterina memecylonis* Ryan**  
 a - Appressorium; b - Thyriothecium; c - Ascus;  
 d - Ascospores

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***Asterina murrayae* Hansf., 1947**  
 1947. Hansf., Proc. Linn. Soc. London 158: 45.  
 (Fig. 2)

**Materials examined**

17.i.2001, in the Medicinal plant garden, Tropical Botanic Garden and Research Institute, Palode, coll. H. Biju, on leaves of *Murraya koenigii* (Rutaceae), HCIO 44512, TBGT 798.

**Diagnostic features**

Colonies amphigenous, mostly epiphyllous, dense, up to 2mm in diameter, confluent. Hyphae straight, substraight to crooked, branching alternate to irregular at acute angles, loosely to closely reticulate, cells 12-16 x 4-7µm. Appressoria alternate, about 40% opposite, unicellular, globose, ovate, oblong, cylindrical, entire, sinuately lobate to irregularly and sharply lobate, 5-13 x 4-7µm. Thyriothecia scattered to loosely grouped, orbicular, up to 175µm in diameter, stellately dehisced at the centre, margin mostly crenate to rarely fimbriate and the fringed hyphae very small; asci few, ovate to globose, octosporous, 28-35µm in diam.; ascospores oblong, conglobate, brown, uniseptate, slightly constricted at the septum, 20-23 x 8-10µm.

**Remarks**

This species was known on the same host from Sri Lanka (Hansford, 1947) and is reported here for the first time from India (Bilgrami *et al.*, 1991).

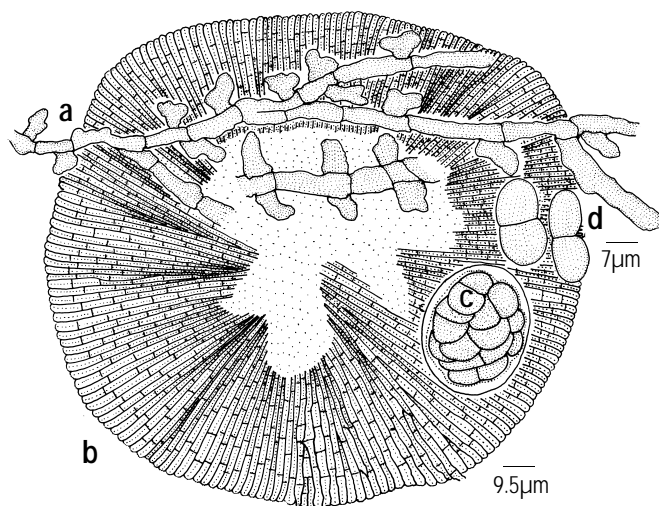


Fig. 2. *Asterina murrayae* Hansf.

a - Appressorium; b - Thyriothecium; c - Ascus; d - Ascospores

***Balladynopsis sivanesanii* V.B. Hosagoudar et A. Manojkumar, sp. nov.**  
 (Fig. 3)

**Materials examined**

**Holotype:** 4.x.2002, Placherry, Ranni, Pathanamthitta, Kerala, coll. A. Manojkumar, on leaves of *Canthium* sp. (= *Plectronia* sp.) (Rubiaceae), HCIO 44660.

**Isotype:** 4.x.2002, Placherry, Ranni, Pathanamthitta, Kerala, coll. A. Manojkumar, on leaves of *Canthium* sp. (= *Plectronia* sp.) (Rubiaceae), TBGT 942.

**Etymology**

Named in honour of Dr. A. Sivanesan for his monographic work on the genus *Balladynopsis*.

**Diagnostic features**

*Coloniae amphigenae, subdensae, crustosae, ad 3mm diam., confluentes. Hyphae rectae vel flexuosae, irregulariter acuteque vel laxe ramosae, laxe reticulatae, cellulae 16-20 x 4-5µm. Appressoria dispersa, ovata, sessilis, constricta ad basim, integra, 8-12x6-7µm. Perithecia producentis hyphis lateralis, ovata, globosa, 50-60x40-50µm; setae peritheciales 4-12 numero, producentes peritheciise basim, simplices, rectae, flexuosae, uncinatae, obtusae ad apicem, ad 60µm longae, parietis glabrus; struts hyhis 1-5, similis hyphis, exappressorii,*

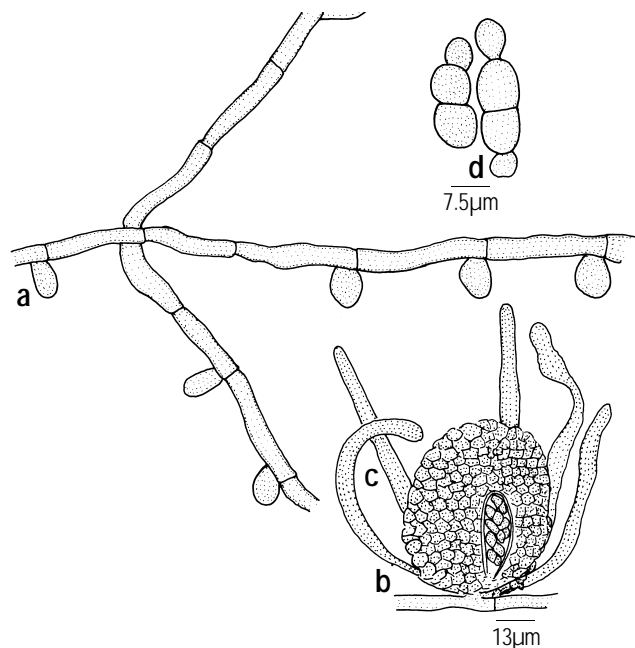


Fig. 3. *Balladynopsis sivanesanii* V.B. Hosagoudar et A. Manojkumar, sp. nov.

a - Appressorium; b - Perithecium; c - Perithecial setae; d - Ascospores

*flexuosus, longus, septatus; asci pauci, ovati, bitunicati, octospori, 25-35x22-25µm; ascospores oblongae, brunneae, conglobatae, uniseptatae, constrictae, 17-20x7-9µm, parietis glabrus.*

Colonies amphigenous, subdense, crustose, up to 3mm in diameter, confluent. Hyphae straight to flexuous, branching irregular at acute to wide angles, loosely reticulate, cells 16-20x4-5µm. Appressoria scattered, ovate, sessile, constricted at the base, entire, 8-12x6-7µm. Perithecia produced lateral to the hyphae, ovate, globose, 50-60x40-50µm; perithecial setae 4-12 in number, produced at the basal portion of the perithecia, simple, straight, flexuous, uncinata, obtuse at the tip, up 60µm long, wall smooth; hyphal struts 1-5, like vegetative hyphae but devoid of appressoria, flexuous, long, septate; asci few, oval, bitunicate, 8-spored, 25-35x22-25µm; ascospores oblong, brown, conglobate, uniseptate, constricted at the septum, 17-20x7-9µm, wall smooth.

#### Remarks

The *Balladyna* complex was segregated into several genera, in similarity with the Meliolaceae members, by attaching importance to the setae. The genus *Balladynopsis* differs from its allied genera in having perithecial setae (Sivanesan, 1981). This genus is divided into four groups based on the morphology of the appressoria, namely, 1. entire and clavate, 2. deeply lobed, 3. slightly lobed or sublobate, and 4. entire but globose appressoria to the first and the fourth. The present collection in having entire appressoria can be assigned to the first and the fourth group. The fourth group is with anamorphs and the present species lacks it. Hence, it belongs to the first group, which contains a single species, *B. pusillima* (Sydow & Sydow) Petrak, known only from the type collection from Philippines. However, *B. sivanesanii* differs from it in having larger appressoria, longer perithecial setae and larger ascospores.

This forms a new generic record to India (Bilgrami *et al.*, 1991). This species was associated with *Acrodictis balladynae* (Pat. & Har.) Arnaud.

#### *Questieriella ardisiae* V.B. Hosagoudar et

K. Vijayakumar, sp. nov.

(Fig. 4)

#### Materials examined

Holotype: 24.xi.2002, Thenmala, Wyanad, Kerala, coll. K. Vijayakumar, on leaves of *Ardisia solanaceae* (Myrsinaceae), HCIO 44632.

Isotype: 24.xi.2002, Thenmala, Wyanad, Kerala, coll. K. Vijayakumar, on leaves of *Ardisia solanaceae* (Myrsinaceae), TBGT 914.

#### Diagnostic features

*Coloniae epiphyllae, tenues vel subdensae, ad 2mm diam.,*

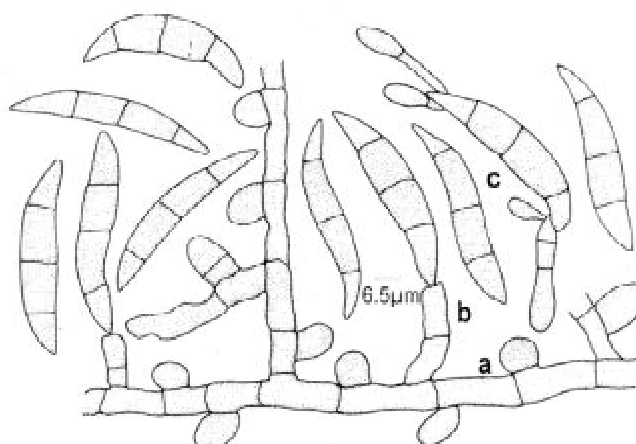


Fig. 4. *Questieriella ardisiae* V.B. Hosagoudar et K. Vijayakumar, sp. nov.  
a - Appressorium; b - Conidiophore; c - Conidia

*confluentes. Hyphae rectae vel subrectae, alternate, opposite vel irregulariter acuteque vel laxe ramosae, laxe vel dense reticulatae, cellulae 19-24x6-8µm. Appressoria alternata, ad 2% opposita, unicellula, globosa, ovata, integra, 9-11x9-10µm. Conidiophora producentes hyphiis lateralis, simplices, micronemata, macronemata, unicellula, raro bi-septata, 12-40x6-8µm. Cellulae conidiogenae terminalis, integratae, ovatae vel cylindratae, 8-13x4-8µm. Conidia solitaria, simplices, sicca, ellipsoidea, fusiformes, falcata, sigmoidea, fortiter brunnea vel pallid brunnea, 3-septata, cellulae terminalis acutae ad apicem, 40-50µm longa, 9-13 crassa ad centro, 3-5µm crassa ad apicem.*

Colonies epiphyllous, thin to subdense, up to 2mm in diameter, confluent. Hyphae straight to substraight, branching alternate, opposite to irregular at acute to wide angles, loosely to closely reticulate, cells 19-24 x 6-8µm. Appressoria alternate, about 2% opposite, unicellular, globose, ovate, entire, 9-11 x 9-10µm. Conidiophores produced lateral to the hyphae, simple, micronematous, macronematous, unicellular to two septate, 12-40 x 6-8µm. Conidiogenous cells terminal, integrated, oval to cylindrical, 8-13 x 4-8µm. Conidia solitary, simple, dry, ellipsoidal, fusiform, falcate, sigmoid, deep brown to pale brown, 3-septate, terminal cells acute at the tip, 40-50µm long, 9-13µm broad at the middle, 3-5µm broad at the apex.

#### Remarks

*Schiffnerula robusta* Orejuela is known on *Rapanea* sp. from Columbia (Orejuela, 1944). However, the present species differs from it in having only anamorph.

***Sarcinella tectonae* V.B. Hosagoudar et  
A. Manojkumar, sp. nov.**

(Fig. 5)

**Materials examined**

**Holotype:** 4.x.2002, Placherry forest, Ranni, Pathanamthitta, Kerala, coll. A. Manojkumar, on leaves of *Tectona grandis* L. (Verbenaceae), HClO 44656.

**Isotype:** 4.x.2002, Placherry forest, Ranni, Pathanamthitta, Kerala, coll. A. Manojkumar, on leaves of *Tectona grandis* L. (Verbenaceae), TBGT 938.

**Diagnostic features**

*Coloniae amphigenae, plerumque epiphyllae, densae, ad 1mm diam., raro confluentes. Hyphae pallid brunneae, leniter flexuosae, alternate vel irregulariter acuteque ramosae, laxe vel dense reticulatae, cellulae 12-20 x 4-7µm. Appressoria brunnea, dispersa, alternata, globosa vel leniter ovata, integra, 9-12µm diam.; conidiophora simplices, micronemata, mononemata, pallida, integra, 5-8µm longa; cellulae conidiogenae integratae, monoblasticae, terminalis; conidia solitaria, sicca, acrogena, simplices, globosa, sarciniiformis, 4-12 cellula, nigra, septa non visa, leniter constricta ad septata,*

*16-40µm diam., parietus glabrus.*

Colonies amphigenous, mostly epiphyllous, dense, up to 1mm in diameter, rarely confluent. Hyphae pale brown, slightly flexuous, branching alternate to irregular at acute angles, loosely to closely reticulate, cells 12-20 x 4-7µm. Appressoria brown, scattered, alternate, globose to slightly ovate, entire, 9-12µm in diameter; conidiophores simple, micronematous, mononematous, pale, entire, 5-8µm long; conidiogenous cells integrated, monoblastic, terminal; conidia solitary, dry, acrogenous, simple, globose, sarciniiform, 4-12-celled, carbonaceous black, septa not visible, slightly constricted at the septa, 16-40µm in diameter, wall smooth.

**Remarks**

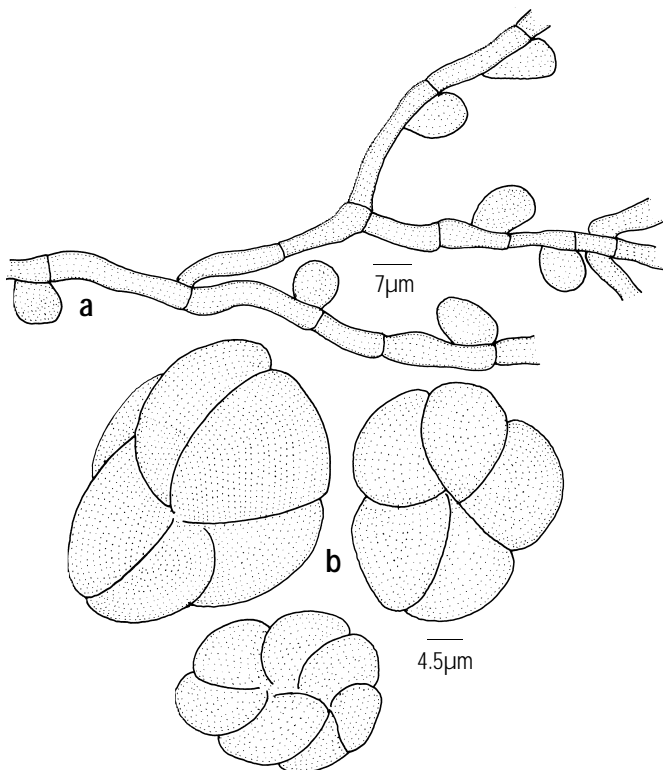
The genus *Clypeolella* is synonymous to the genus *Schiffnerula*. The form genus *Sarcinella* is the synanamorph of *Schiffnerula* (Hughes, 1987). *Clypeolella tectonae* Thite & Patil is known on this host from Maharashtra region of the Western Ghats (Thite & Patil, 1985). Since the present collection persisted only in *Sarcinella* state, it has been accommodated in a new species. This collection was severely hyperparasitized with *Acremoniula sarcinellae* (Pat. & Har.) Arnaud.

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**Fig. 5. *Sarcinella tectonae* V.B. Hosagoudar et  
A. Manojkumar, sp. nov.  
a - Appressorium, b - Conidia**