# *Schiffnerula celastri* sp. nov. from Kerala, India

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**Abstract:** A new species of the genus *Schiffnerula* on *Celastrus paniculatus,* collected from Wayanad, Kerala, India, is described and illustrated in detail.
*Keywords*: Black mildew, *Schiffnerula,* new species.

## Introduction

During a study of foliicolous fungi in the Western Ghats of Peninsular India, an endemic plant, *Celastrus paniculatus* Willd. (Celastraceae), found infected with a black mildew fungus. Microscopic examination of the fungus revealed that it belongs to a non-described species of the genus *Schiffnerula*, hence the note.

The genus *Schiffnerula* is the member of an ectophytic black colony forming fungus, classified under the family Englerulaceae of bitunicate Ascomycetes. It is characterized by the superficial mycelium with unicellular appressoria, having *Digitosarcinella, Mitteriella, Questieriella* and *Sarcinella* anomorph (synanamorph) states. Ascomata produced at the end of the short lateral branches or sessile on the hyphae, initially flattened with radiate cells, later become globose and the wall cells gelatinize; asci persistent, bitunicate, ovate to globose; ascospores brown, uniseptate. This genus along with its synanamorphs represents around 100 taxa in the world, while, more than 50 are known in India (Hughes, 1987; Bilgrami *et al.*, 1991; Hosagoudar, 2003).

## Taxonomy

*Schiffnerula celastri* sp. nov.(Fig.1, Plate I)
*Synanamorph: Sarcinella palawanensis* (Sydow & Sydow) Sahni, Mycopath. Mycol. Appl. 29, 241, 1966.
=*Stigmella palawanensis* Sydow. Philippine J. Sci. 9, 189, 1914.
≡*Sarcinella paniculatae* Verma, Tripathi & Choudhary, Indian phytopathol. 52, 379, 1999.

Coloniae amphigenae, tenues, subdensae vel densae, ad 4 mm diam., confluentes. Hyphae subrectae vel flexuosae, opposite, alternatim vel unilateralis acuteque vel laxe ramosae, laxe reticulatae, cellulae 13-35 x 3-4 µm. Appressoria opposita, globosa, mammiformes, integra, 3-6 x 6-9 µm. Conidia *Questieriella* dispersa, non affixa, curvula, 3-septata, leniter constrictus ad septata, attenuata ad ambi apices, 33-55 x 6-9 µm. Conidiophora *Sarcinella* producentes hyphis lataralis, solitaria, recta vel flexuosa, macronemata, mononemata, 0-2-septata, 11-31 x 4-6 µm; cellulae conidiogenae terminalis, monoblasticae, integratae, cylindraceae. Conidia *Sarcinella* blastica, terminalis, plerumque sissilis, solitaria, sicca, ovata vel globosa, sarciniformes, cruciatim septatis, 2-8-cellula, constrictus ad septata, 13-26 µm diam., parietus glabrus. Thyriothecia dispersa, orbicularis, ovata, cellulae peridiales ad intio radiatus, tandem portionio ad centro dissolutus et asci expositi, ad 174 µm diam., cellulae marginalis radiatae; asci 5-8-numero per peritheciis, globosi, octospori, bitunicati, 15-28 µm diam.; ascosporae oblongae, conglobatae, uniseptatae, constrictae ad septatae, 17-26 x 6-

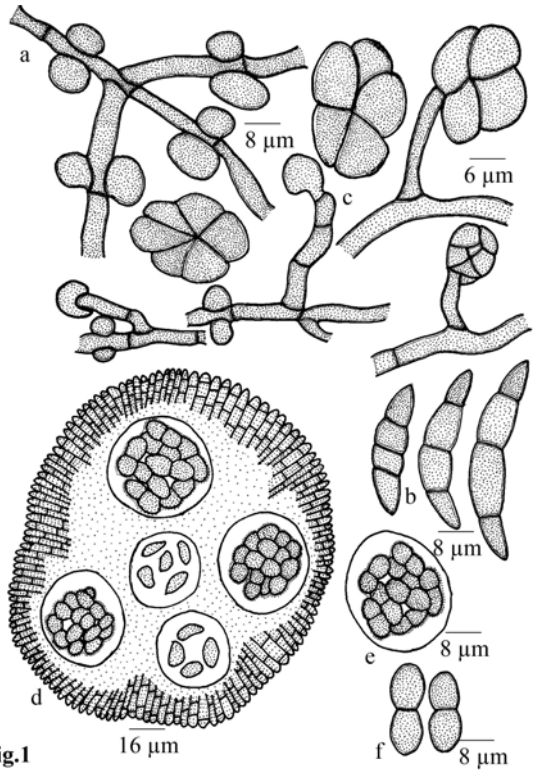


**Fig.1**

*a: Appressoriate mycelium,*
*b: Questieriella conidia,*
*c: Sarcinella conidia,*
*d: Thyriothecium with exposed asci,*
*e: Ascus,*
*f: Ascospores*

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13 µm, hyalinus ad initio et brunneae ad maturitatae.

Colonies amphigenous, thin, subdense to dense, up to 4 mm in diameter, confluent. Hyphae substraight to flexuous, branching opposite, alternate to unilateral at acute to wide angles, loosely reticulate, cells 13-35 x 3-4 µm. Appressoria opposite, globose, mammiform, entire, 3-6 x 6-9 µm. Conidia of *Questieriella* type were scattered, not attached, curved, 3-septate, slightly constricted at the septa, taper towards both ends, 33-55 x 6-9 µm. Conidiophores of *Sarcinella* produced lateral to the hyphae, single, straight to flexuous, macronematous, mononematous, 0-2 septate, 11-31 x 4-6 µm; conidiogenous cells terminal, monoblastic, integrated, cylindrical. Conidia of *Sarcinella* blastic, terminal, mostly sessile, solitary, dry, ovate to globose, sarciniform, cruciately septate, 2-8 celled, constricted at the septa, 13-26 µm in diameter, wall smooth. Thyriothecia scattered, orbicular, ovate, peridial cells initially radiating, later central portion dissolved by exposing the asci, up to 174 µm in diam., marginal cells radiating; asci 5-8 per thyriothecia, globose, octosporous, bitunicate, 15-28 µm in diameter; ascospores oblong, conglobate, uniseptate, constricted at the septum, 17-26 x 6-13 µm, remain hyaline for some time but turn brown at maturity.

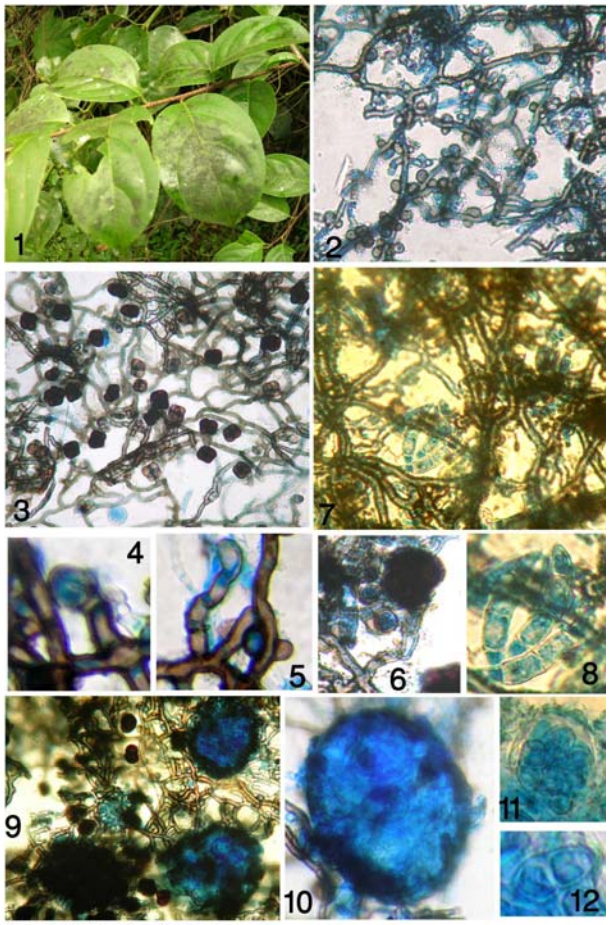


**Plate.I**:*Schiffnerula celastri* sp. nov
1. Infected leaves, 2. Appressoriate mycelium, 3. Sarciniform conidia, 4-6. Developing sarciniform conida, 7. Scattered conidia of *Questieriella*, 8. Spores of *Questieriella*, 9-10. Perithecia with exposed asci, 11. Ascus, 12. Ascospore

## Materials examined

On leaves of *Celastrus paniculatus* Willd. (Celastraceae), Padinharathara, Wayanad, Kerala, India, March 16, 2007, M. C. Riju HCIO 48061 (type), TBGT 2844 (isotype).

## Discussion

Sydow & Sydow (1914) described this fungus on the same host genus from Philippines had fusoid three septate conidia (*Questieriella* state) and named it as *Stigmella palawanensis* Sydow. Sahni (1965) located this fungus in India and later it was transferred to the genus *Sarcinella* as *S. palawanensis* (Sydow) Sahni because of the presence of sarciniform conidia (Sahni, 1966). Verma *et al.* (1999) described it as *S. paniculatae* Verma *et al.* based on the sarciniform conidia. Our recent collection revealed both anamorphs (*Quistieriella* and *Sarcinella*) and teleomorph states. Since teleomorph state supersedes anamorph state, it has been described here as a new species.

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