SCHIFFNERULA PALODENSIS SP.NOV. FROM KERALA, INDIA

V B Hosagoudar and M C Riju*
Tropical Botanic Garden and Research Institute, Palode - 695 562, Thiruvananthapuram, Kerala, India.*vbhosagoudar@rediffmail.com
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ABSTRACT

The cultivated *Solanum* plant producing elongated green fruits found infected with a black mildew fungus. Critical study of the fungus revealed that it is hitherto undescribed species of the genus. Hence, it is described and illustrated as *Schiffnerula palodensis* sp. nov.

Key words: Fungus, Black mildew, *Schiffnerula*, New species, India

INTRODUCTION

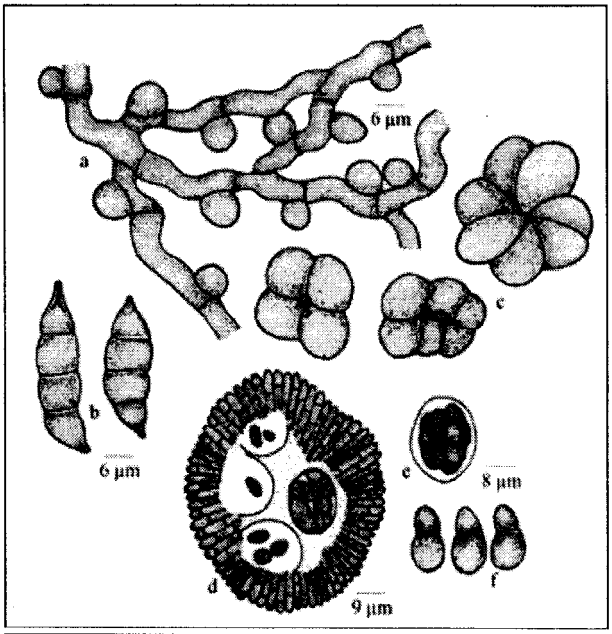
The family Solanaceae comprises more than 50 genera and of which two genera: *Lisianthus* and *Solanum* are being infected with Schiffnerulaceous fungi (Hosagoudar 2003). Former genus found infected with *Schiffnerula lisianthi* Hansf. (Hansford 1957) and the latter genus found infected with *Clypeolella solani* Theiss. (Theissen 1912), *Schiffnerula costaricensis* Hansf. and *S. solani* Hansf. (Hansford 1949). The genus *Clypeolella* has been synonymised with the genus *Schiffnerula* (Hughes 1984). Hence, Hughes (1987) proposed new name, *Schiffnerula theisseni* to *Clypeolella solani* because of the preoccupied name. *Sarcinella raimundi* Sacc. is the anamorph known on the host genus *Solanum* (Saccardo 1914; Kranz 1968; Hosagoudar 2006). During our present study, we came across the cultivated *Solanum* plant producing elongated green fruits found infected with a black mildew fungus and its critical study revealed that it is hitherto undescribed species. Key has been provide to facilitate the identification of Schiffnerulaceous fungi infected the members of Solanaceae.

***Schiffnerula palodensis* sp.nov. (Plate-I, Fig.-1)**

Coloniae epiphyllae, tenues, ad 2 mm diam., confluentes. Hyphae subrectae, alternatim vel irregularitier acuteaue vel laxe ramosae, laxe reticulatae, cellulae 8-20 x 4-6 µm. Appressoria alternata vel unilateralis, ovata, globosa vel mammiformes, integra, 8-10 x 6-10 µm diam. Qusterierilla - conidia dispersa, non affigera, curvula, 3 septata, leniter ad septatis constrictus, attenuata ad ambi apicem, 14-31 x 8-11 µm. *Sarcinella* - conidiophorae producentes ad hyphis lataralis, solitariae, rectae vel flexuosae, micronematae, mononematae, 0-1-septatae, 5-22 x 3-5 µm; cellulae conidiogenae terminalis, monoblasticae, integratae, cylindraceae. *Sarcinella* - conidia blastica, terminalis, plerumque sessilis, solitaria, sicca, ovata vel globosa, sarciniformes, cruciatim septatis, 3-7 cellulae, constrictus ad septatae, 19-33 µm diam. parietus glabrus. Thyriothecia dispersa, globosa, orbicularis, ovata, cellulae peridials radiatae ad initio, portionio centratis tabidus ad maturitatae et asci detectum; ad 75 µm diam, cellulae ad marginae radiatae; asci 2-5 per thyriotheciis, globosi, octospori, bitunicati, 12-24 µm diam; ascosporae oblongae, conglobatae, uniseptata, constrictae ad septatae, 20-23x 10-12 µm, brunnae ad maturitatae, parietus glabrus .

Colonies epiphyllous, thin, up to 2 mm in diameter, confluent. Hyphae substraight, branching alternate to irregular at acute to wide angles, loosely reticulate, cells 8-20 x 4-6 µm. Appressoria alternate to unilateral, ovate, globose to mammiform, entire, 8-10 x 6-10 µm. Conidia of *Questieriella* were scattered, not attached, curved, 3-septate, slightly constricted at the septa, taper towards both ends, 14-31 x 8-11 µm. *Sarcinella* conidiophores produced lateral to the hyphae, single, straight to flexuous, micronematous, mononematous, 0-1 septate, 5-22 x 3-5 µm; conidiogenous cells terminal, monoblastic, integrated, cylindrical. *Sarcinella* conidia blastic, terminal, mostly sessile, solitary, dry, ovate to globose, sarciniform, cruciately septate, 3-7 celled, constricted at the septa, 19-33 µm in diameter, wall smooth. Thyriothecia scattered, orbicular, ovate, peridial cells initially radiating, later central portion dissolved by exposing the asci, up to 75 µm in diam., marginal cells radiating; asci 2-5 per thyriothecia, globose, octosporous, bitunicate, 12-24 µm in diameter; ascospores oblong, conglobate, uniseptate, constricted at the septum, 20-23 x 10-12 µm, brown at maturity, wall smooth.

Materials examined: On leaves of *Solanum* sp., Chippanchira, Palode, Thiruvananthapuram, Kerala, December 15, 2008, M.C. Riju and K. Anil Kumar HCIO 49102 (holotype), TBGT 3357(isotype).



Explanation to the line drawings

Fig.-1. *Schiffnerula palodensis* sp.nov.

a. Appressoriate mycelium,
b. b. Conidia of *Questieriella*,
c. c. Conidia of *Sarcinella*,
d. d. Thyriothecium with exposed asci,
e. e- Ascus, f. Ascospores

Key to the species

The genus *Schiffnerula* on Solanaceae

1 Teleomorph unknown, persisted in *Sarcinella* state..... ***Sarcinella raimundi***
1 Teleomorph known **2**
2 On *Lisianthus* .....***Schiffnerula lisianthi***
2 On *Solanum* **3**
3 Ascospores less than 10 µm broad .....***Schiffnerula solani***
3 Ascospores more than 10 µm broad **4**
4 *Questeriella* conidia less than 12 µm broad .....***Schiffnerula palodensis***
4 *Questeriella* conidia more than 12 µm broad **5**
5 Ascospores more than 22 µm long .....***Schiffnerula theisseni***
5 Ascospores less than 22 µm long .....***Schiffnerula costaricensis***

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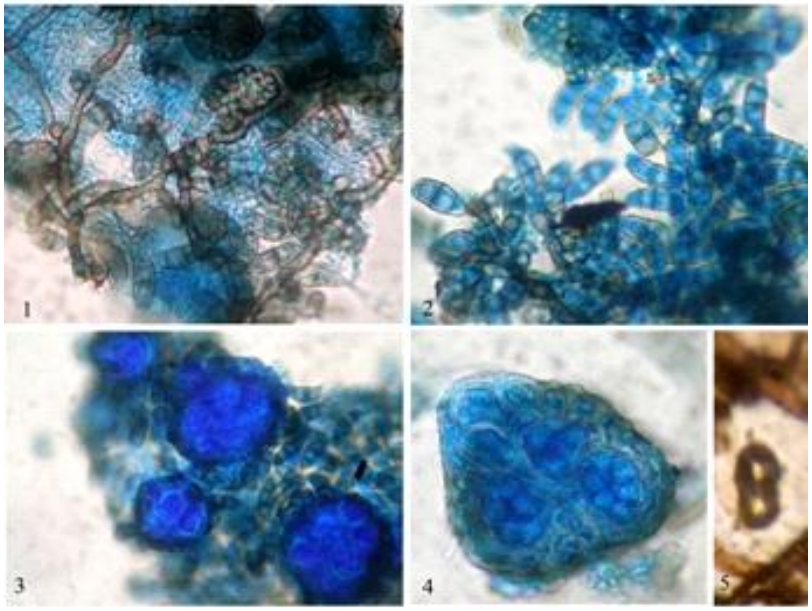

Plate -1. *Schiffnerula Sp. Nov.*

1. *Colony with tyriothecia and Questieriella conidia*
2. *Questieriella* conidia
3. Thyriothecia
4. Arrangement of Asci in the thyriothecium
5. *Ascospore*

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