

Notes on some foliicolous fungi from Kerala, India

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The paper gives an account of foliicolous fungi collected from Kerala state. Of these, *Asterina xanthophylli* and *Phyllachora keralica* are the new species. *Schiffnerula camelliae* is reported here for the first time from southern India. *Meliola tenella* var. *atalantiae* is known for the first time from Kerala state and notes are provided to *Phyllachora spissa*.

Key words : Follicolous fungi, new species, Kerala

During a survey of the foliicolous micro fungi in the Peppara and Neyyar wildlife sanctuaries and in Munnar high ranges of Kerala state, authors have made several collections of these fungi. Of those, five taxa are reported here.

Asterina xanthophylli sp. nov.

(Fig. - 1)

Coloniae plerumque epiphyllae, raro hypophyllae, tenues vel subdensae, ad 5 µm diam., confluentes. Hyphae rectae vel laxae subrectae, alternatae vel irregulariter acuteque vel laxae ramosae, laxae vel dense reticulatae, cellulae 15-30 X 4-5 µm. Appressoria alternata vel ad 5% opposita, antrorsa vel subantrorsa, 2-cellula, 11-17.5 µm longa; cellula basali cylindracea vel mammiformis, recta vel curvula, 2.5-6 µm long; cellula apicali ovata, globosa, integra, angularia, sublobata, hamata, 7.5-11 X 6.5-7.5 µm. Thyrothecia dispersa vel raro connata, orbicularia, ad 147 µm diam.; margine fimbriata, hyphae fringiorae rectae vel anfractuae, exappressoriatae, pallid brunneae, ad 100 µm longae; thyrothecia stellatim dehiscentes ad centro; asci globosi, octospori, 31-33 µm diam.; ascosporeae brunneae et nigroscent brunneae, conglobatae, 1-septatae, constrictae, 23-26 X 11-12.5 µm, parietis verrucosis.

Colonies predominantly epiphyllous, rarely hypophyllous, thin to subdense, upto 5 µm in diameter, often confluent. Hyphae straight to substraight, branching alternate to irregular at acute to wide angles, loosely to closely

reticulate, cells 15-30 X 4-5 µm. Appressoria alternate, about 5% opposite, antrorse to subantrorse, 2-celled, 11-17.5 µm long; stalk cells cylindrical to mammiform, straight to curved, 2.5-6 µm long; head cells ovate, globose, entire, angular, sublobate, often hamate, 7.5-11 X 6.5-7.5 µm. Thyrothecia scattered to rarely connate, orbicular, upto 147 µm in diameter; margin fimbriate, fringed hyphae straight to crooked, exappressoriatae, light brown, upto 100 µm long; thyrothecia stellately dehisce at the centre; asci globose, octosporous, 31-33 µm in diameter; ascospores brown to dark brown, conglobate, oblong, 1-septate, constricted at the septum, 23-26 X 11-12.5 µm.

Holotype: On leaves of *Xanthophyllum flavescens* Roxb. (Xanthophyllaceae), Chinnar, near Munnar, Idukki, Kerala, India, July 1, 1998, C.K. Biju HCIO.

Isotype: TBGT 203.

A thorough scrutiny of the literature revealed no report of Asterinaceae members on the members of the family Xanthophyllaceae. Hence, it is proposed here a new species.

Meliola tenella pat var. *atalantiae* (Pat.) Hansf., Proc. Linn. Soc. London 158: 35, 1946; Hansf., Sydowia Beih. 2: 381, 1961; Hosag., *Meliolales of India*, P. 326, 1996;

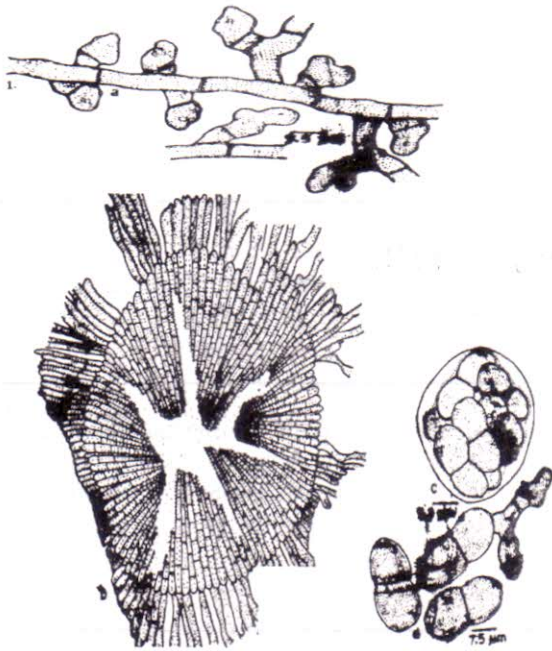


Fig. 1: *Asterian xanthophylli* sp. nov.: a - Appressoriate mycelium, b - Thyrothecium, c - Ascus, d - Ascospores.

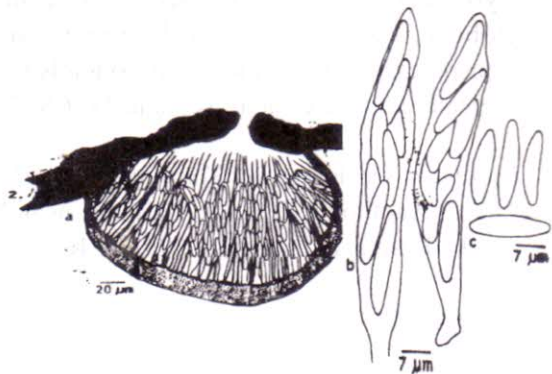


Fig. 2: *Phyllachora keralica* sp. nov.: a - Perithecium, b - Ascus, c - Ascospores

Hosag., Abraham & Crane, Mycotaxon 66: 420, 1998. *Metiola bambusae* Pat. var. *atalantiae* Pat., J. Bot. 11: 348, 1897.

On leaves of *Atalantia monophylla* (L.) Correa (Rutaceae), Chinnar, near Munnar, Idukki, Kerala,

India, July 1, 1998, C.K. Biju HCIO; TBGT 205.

This taxon is reported here for the first time from Kerala (Hosagoudar, 1996).

Phyllachora keralica sp. nov.

(Fig. 2.)

Stromata epiphylla, nigra, elevata, nitida, ad 1 m diam., raro confluentes, circumcinctus pallid halo, postea formans porosa. Perithecia 1-3 per tromata, ovata vel craterviformis, clypeus ad superne astronigrus, ad 40 μm crassus, parietus depressus tenues, profundus brunneus, ad 14 μm crassus, perithecia 70-100 μm alta et 175-238 μm lata; asci numerosi, octospori, paraphysati, cylindrici, leniter stipitati, 52-83 X 6-12.5 μm ; paraphyses simplices, hyalinus, septatus; ascosporeae uniseriatae, oblique positae, unicellulae, hyalinae, fusiformiae, untrinque attenuatae, leniter curvulae, 15-22 X 3.5-5 μm .

Stromata epiphyllous, dark, raised, shining, upto 1 mm in diameter, rarely confluent, surrounded by yellow holoes, later turn as greyish-white and form shot-holes. Perithecia 1-3 per stromata, oval to craterviform, clypeate, clypeus on the upper surface very dark, up to 40 μm thick, lower wall embedded in the host initially yellow in colour and later form dark, non-cellular wall, upto 14 μm thick, perithecia 70-100 μm high and 175-238 μm broad; asci many, octosporous, paraphysate, cylindrical, slightly stipitate, 52-83 X 6-12.5 μm ; paraphyses simple, hyaline, septate; ascospores uniseriate, obliquely placed, unicellular, hyaline, fusiform, tapering towards both ends, often slightly curved, 15-22.5 X 3.5-5 μm .

Holotype: On leaves of *Phyllanthus* sp. (Euphorbiaceae), in the forest near Bonnaccord estate, Thiruvananthapuram, Kerala, India, March 13, 1997, V.B. Hosagoudar HCIO; *Isotype*: TBGT 206.

A thorough survey of the literature (Theissen and Sydow, 1915; Kamat *et al*, 1978; Parbery, 1978) revealed that there is no report of the genus *Phyllachora* on this host genus. Hence, it is proposed here as a new species.

Phyllachora spissa H. Sydo in H. Sydow, P. Sydow & Butler, Ann.Mycol. 9: 397, 1911; Cannon, Mycol. Pap. 163: 172, 1991.

On leaves of *Dalbergia paniculata* Roxb.

(Fabaceae), Kombe, Peppara wildlife sanctuary, Thiruvananthapuram, Kerala, India, V.B. Hosagoudar HCIO, TBGT 207.

Cannon (1991) identified *Phyllachora viventis* and *P. spissa* from India on the host genus *Dalbergia*. In the present collection, ascospores measuring 17.5-22.5 X 4.5-5 µm along with other variations. A thorough revision of the genus *Phyllachora* in the peninsular region is needed.

Schiffnerula camelliae (H. Sydow, P. Sydow & Butler) Hughes, Pleomorphy in some hyphopodiate fungi. In: Sugiyama (Ed.). *Pleomorphic Fungi. The Diversity and its Taxonomic Implications*. Kodansha & Elsevier, Tokyo & Amsterdam, etc., P.133, 1987.

= *Asterina camelliae* H. Sydow, P. Sydow & Butler, Ann. Mycol. 9: 389, 1911.

= *Clypeolella camelliae* (H. Sydow, P. Sydow & Butler) Hansford, Reinwardtia 3: 127, 1954.

(Fig. 3)

Colonies epiphyllous, rarely amphigenous, caulicolous, dense, velvety, crustose, up to 5 mm in diameter, confluent. Hyphae straight to substraight, outer surface tubercled to crenulated, branching alternate, opposite

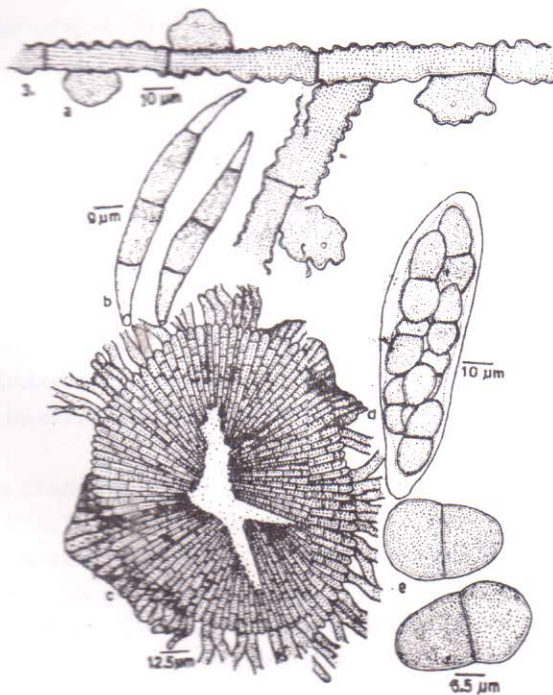


Fig. 3: *Schiffnerula camelliae* (Sydow, Sydow & Butler) Hughes: a-Appressorium mycelium, b - Conidia, c - Thyrothecium, d - Ascus, e - Ascospores.

to irregular at acute to wide angles, loosely to closely reticulate, cells 32-40 X 7-9 µm. Appressoria scattered, alternate, unilateral, globose, oval, broad based, unicellular, entire, crenulated to rarely sublobate, 12-18 X 14-16 µm. Conidia few, fusiform, curved, 3-septate, central cells darker, distal cells paler, distal cells attenuated towards the tip and obtusely rounded at the apices, 80-92.5 X 9-10 µm. Thyrothecia scattered to connate, dimidiate, orbicular, up to 150 µm in diameter, spreading, marginally, dehisce stellately and dissolve at the centre; asci many, cylindrical, octosporous, 100-120 X 30-35 µm, non-stipitate; ascospores biseriata, 1-septate, brownish, upper cell smaller and globose, lower cell oval and slightly attenuated, 30-37 X 15-17 µm, wall smooth.

On leaves of *Camellia sinensis* (LK.) kuntze (Theaceae), Bonaccord estate, near Chemunji, Thiruvananthapuram, Kerala, India, March 11, 1997, V.B. Hosagoudar ILL; TBGT; Rajamala hills, Munnar, Idukki, Kerala, India, June 30, 1998, C.K. Biju HCLO; TBGT 208.

Sydow *et al.* (1911) described this taxon as *Asterina camelliae*, collected from Assam by G. Watt during the year 1895. Based on the collections from Java, Hansford (1954) transferred it to the genus *Clypeolella*. However, Hughes (1987) treated the genus *Clypeolella* synonymous to *Schiffnerula* and hence, the new combination. Yamamoto (1957) has described *Asterina theae* from Taiwan and the mycelium is crenulated. It appears to be related to the present taxon.

This species is reported here for the first time from southern India and makes its links with south Indian hill stations to Assam to Java and Sumatra.

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