

STUDIES ON FOLIICOLOUS FUNGI - VI TWO NEW SPECIES FROM KERALA AND A NEW RECORD FROM INDIA

V.B. Hosagoudar

Microbiology Division, Tropical Botanic Garden and Research Institute, Palode, Thiruvananthapuram, Kerala 695562, India

Abstract

This paper includes an account of five foliicolous microfungi collected in Kerala State. Of these, *Asterina visci* and *Balladyna rubiacearum* are new species. *Prillieuxina anamirtae* is recorded for the first time from India. All these taxa are illustrated and described in detail.

Keywords

Foliicolous fungi, new descriptions, Asterina visci sp. nov., Balladyna rubiacerum sp. nov., Prillieuxina anamirtae, Kerala, new record

Abbreviations

HCIO - Herbarium Cryptogamae Indiae Orientalis, New Delhi

TBGT - Tropical Botanic Garden, Thiruvananthapuram

Asterina visci sp. nov.

(Fig. 1)

Material examined

Holotype: 19.ii.1997, Kombe, Peppara and Neyyar Wildlife Sanctuaries, Thiruvananthapuram, Kerala, India, on leaves of *Viscum* sp. (Loranthaceae), coll. V.B. Hosagoudar, HCIO.

Isotype: 19.ii.1997, Kombe, Peppara and Neyyar Wildlife Sanctuaries, Thiruvananthapuram, Kerala, India, on leaves of *Viscum* sp. (Loranthaceae), coll. V.B. Hosagoudar, TBGT 562.

Diagnostic features

Coloniae amphigenae, densae, velutinae, ad 1 mm diam., raro confluentes. Hyphae subrectae vel flexuosae, irregulariter acuteque vel laxe ramosae, laxe vel densae reticulatae, cellululae 12-20 x 3-4µm. Appressoria alternata, ad 2% opposita, ovata, unicellula, appressorii hyphis perpendicularis, plerumque integra, raro sublobatis ad lateralis et furcatis ad apicem, 8-12 x 4-5µm. Thyriothecia dispersa vel connata, orbicularia, ad 150µm diam., stellato dehiscentes ad centro, plerumque crenata ad margine; asci globosi, octospori, ad 30µm diam.; ascosporae conglobatae, oblongae, brunneae, uniseptatae, constrictae, 16-20 x 8-10µm, parietus minute echinulatus ad

maturitatus. Pycnothyria thyriotheciis similes, breviter; pycnothyriosporae globosae, unicellulae, brunneae, 11-18 x 11-16µm, parietus glabrus.

Colonies amphigenous, dense, velvety, up to 1mm in diameter, rarely confluent. Hyphae substraight to flexuous, branching irregular at acute to wide angles, loosely to closely reticulate, cells 12-20 x 3-4µm. Appressoria alternate, about 2% opposite, ovate unicellular, perpendicular to the mycelium, mostly entire, rarely sublobate at sides and furcate at the apex, 8-12 x 4-5µm. Thyriothecia scattered to connate, orbicular, up to 150µm in diameter; ascospores conglobate, oblong, brown, uniseptate, constricted at the septum, 16-20 x 8-10µm, wall minutely echinulate in the matured ascospores. Pycnothyria similar to thyriothecia, smaller; pycnothyriosporae globose, unicellular, brown, 11-18 x 11-16µm, wall smooth.

Remarks

Based on the morphology of appressoria, *Asterina visci* can be compared with *A. deightonii* Sydow. However, differs from it in having 2% opposite, ovate, entire to furcate appressoria (Hosagoudar & Abraham, 2000; Sydow, 1938).

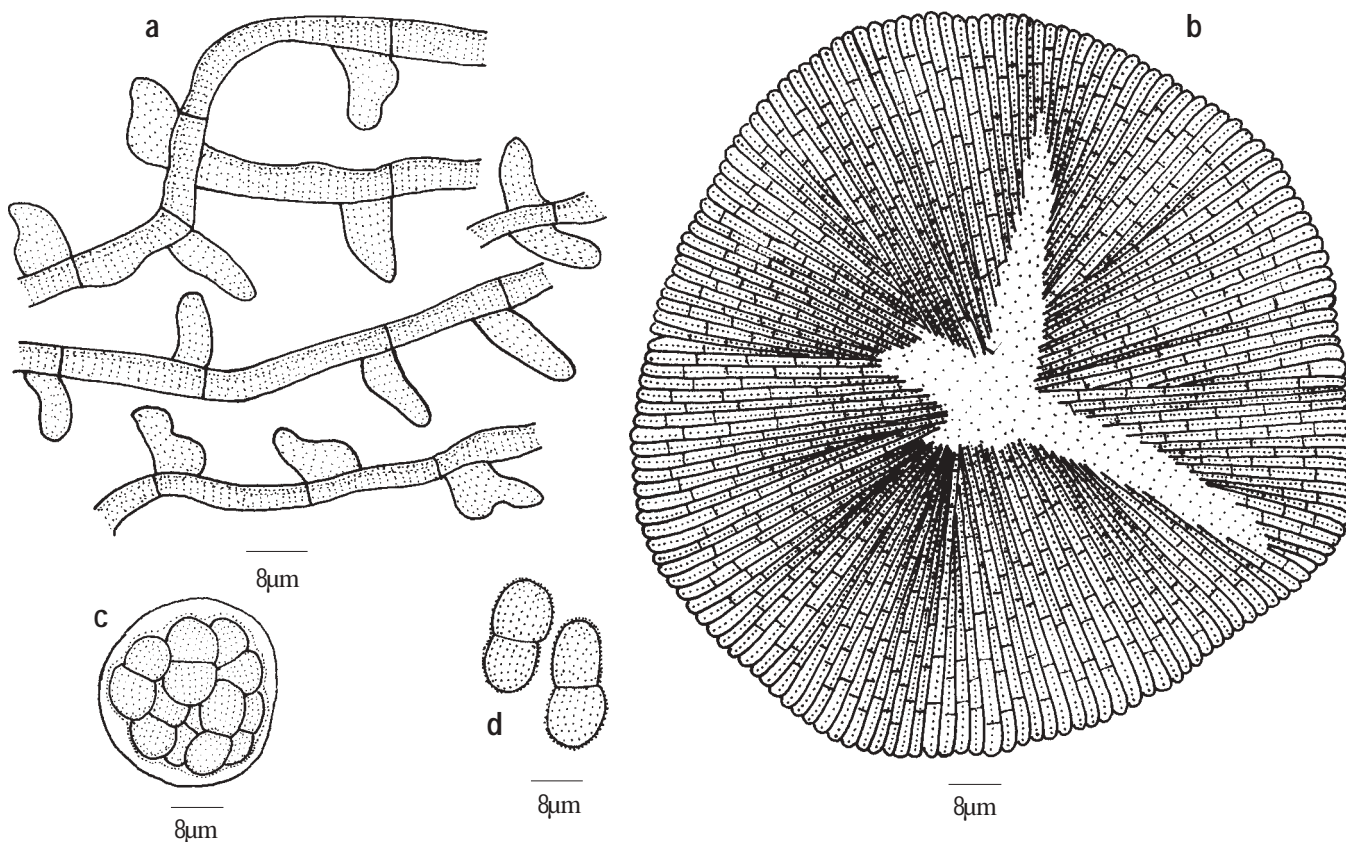


Figure 1. *Asterina visci* sp. nov.
a - Appressoriate mycelium, b - Thyriothecium, c - Ascus, d - Ascospores

***Balladyna rubiacearum* sp. nov.**

(Fig. 2)

Materials examined

Holotype: 19.iii.1997, Attayar, Peppara and Neyyar Wildlife Sanctuary, Thriuvananthapuram, Kerala, India, on leaves of *Tarenna monosperma* (Wight & Arn.) Raju (Rubiaceae), coll. V.B. Hosagoudar, HCIO.

Isotype: 19.iii.1997, Attayar, Peppara and Neyyar Wildlife Sanctuary, Thriuvananthapuram, Kerala, India, on leaves of *Tarenna monosperma* (Wight & Arn.) Raju (Rubiaceae), coll. V.B. Hosagoudar, TBGT 560.

Diagnostic features

Coloniae amphigenae, plerumque hypophyllae, densae, velutinae, ad 5mm diam., raro confluentes. Hyphae subrectae vel flexuosae, irregulariter acuteque ramosae, laxe vel dense reticulatae, cellulae 19-21 x 3-4µm. Appressoria fere nulle ad hyphis centralis, profusa ad hyphis peripheralis, plerumque unilateralia, saepe alternata, unicellula, sessilis vel leniter

stipitata, ovata vel globosa, bi vel tri sublobata, 7-9 x 6-8µm. Setae myceliales numerosae, dispersae, simplices, rectae, flexuosae, uncinatae, geniculatae, rectae vel tortuae, ad superne, acutae vel obtusae ad apicem, ad 100µm longae. Perithecia dense dispersa ad coloniis centralis, stipitata ad initio, postea subsessilia, ovata, globosa, crassa ad basim, anguste ad supernae, ostiolata, 48-56 x 40-45µm; asci pauci, ovati, paraphysati, octospori, bitunicati, 24-38 x 24-26µm, crassitunicati; ascosporae conglobatae, oblongae, brunneae, uniseptatae, constrictae, 15-17 x 7-9µm, parietus glabrus.

Colonies amphigenous, mostly hypophyllous, dense velvety, up to 5 mm in diameter, confluent. Hyphae stright to flexuous, branching irregular at acute angles, loosely to closely reticulate, cells 19-21 x 3-4µm. Appressoria almost absent in the centre of the colonies, present in the peripheral hyphae, mostly unilateral, often alternate, unicellular, sessile to slightly stipitate, oval to globose, 2-3 times sublobate, 7-9 x 6-8µm. Mycelial setae numerous, scattered, simple, stright flexuous, uncinuate, geniculate, straight to twisted towards the upper portion, acute to obtuse at the tip, up to 100µm long. Perithecia very closely

scattered at the centre of the colonies, initially stipitate, later subsessile, ovate, globose, broad at the base, narrows towards apex, ostiolate, 48-56 x 40-45 μ m; asci few, ovate, interspersed with hyaline paraphyses, octosporous, bitunicate, 24-38 x 24-26 μ m, wall thick; ascospores conglobate, oblong, brown, uniseptate, constricted at the septum, 15-17 x 7-9 μ m; wall smooth.

Remarks

Based on the length of the mycelial setae and ascospores, the present species can be compared with *Balladyna sydowii* Petrak, *Balladyna terennae* Ebon & Cane and *Balladyna velutina* (Berk. Curt.) Hohn. However, *Balladyna rubiacearum* differs from the latter two species in having shorter mycelial setae and ascospores, while, differs from the former species in having longer mycelial setae and larger ascospores (Hansford, 1946; Petrak, 1955; Müller & Arx, 1962; Eboh & Cain, 1973).

Prillieuxina anamirtae (Sydow & Sydow) Ryan

(Fig. 3)

Illinois Biol. Monographs 17: 78, 1939; Muller & Arx, Beitr. Krypt. der Schw. 11: 134, 1962 = *Asterinella anamirtae* Sydow & Sydow,

Ann. Mycol. 12: 558, 1914.

Materials examined

Holotype: 13.vii.2001, river side in the campus of Tropical Botanic Garden and Research Institute, Palode, Thiruvananthapuram, Kerala, India, on leaves of *Anamirta cocculus* (L.) Wight & Arn. (Menispermaceae), coll. M. Kamarudeen, HCIO
Isotype: 13.vii.2001, 12.xii.2000, river side in the campus of Tropical Botanic Garden and Research Institute, Palode, Thiruvananthapuram, Kerala, India, on leaves of *Anamirta cocculus* (L.) Wight & Arn. (Menispermaceae), coll. M. Kamarudeen, HCIO, TBGT 566, TBGT 567.

Diagnostic features

Colonies amphigenous, often epiphyllous or hypophyllous, dense, up to 5 mm in diameter, confluent. Hyphae flexuous to crooked, branching irregular at acute angles, loosely to closely reticulate, cells 3-4 μ m broad. Appressoria absent. Thyriothecia few, orbicular, scattered to connate in a line, orbicular, up to 80 μ m in diameter, stellately dehisced at the centre, margin inconspicuously fimbriate, asci globose, ovate, octosporous, up to 40 μ m in diameter; ascospores oblong, brown, 1-septate, constricted at the septum, 24-31 x 11-15 μ m, wall echinulate in

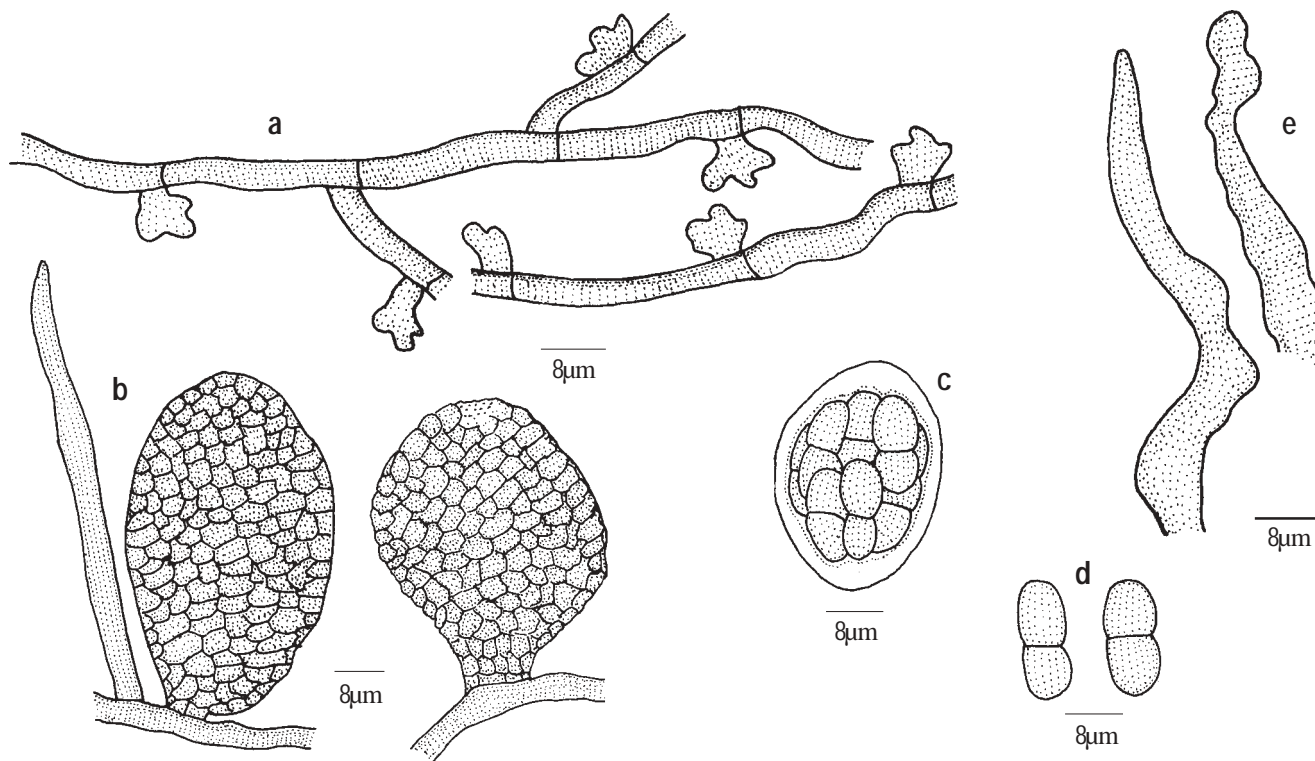


Fig. 2. *Balladyna rubiacearum* sp. nov.

a - Appressoriolate mycelium, b - Thyriothecium, c - Ascus, d - Ascospores, e - Mycelial setae

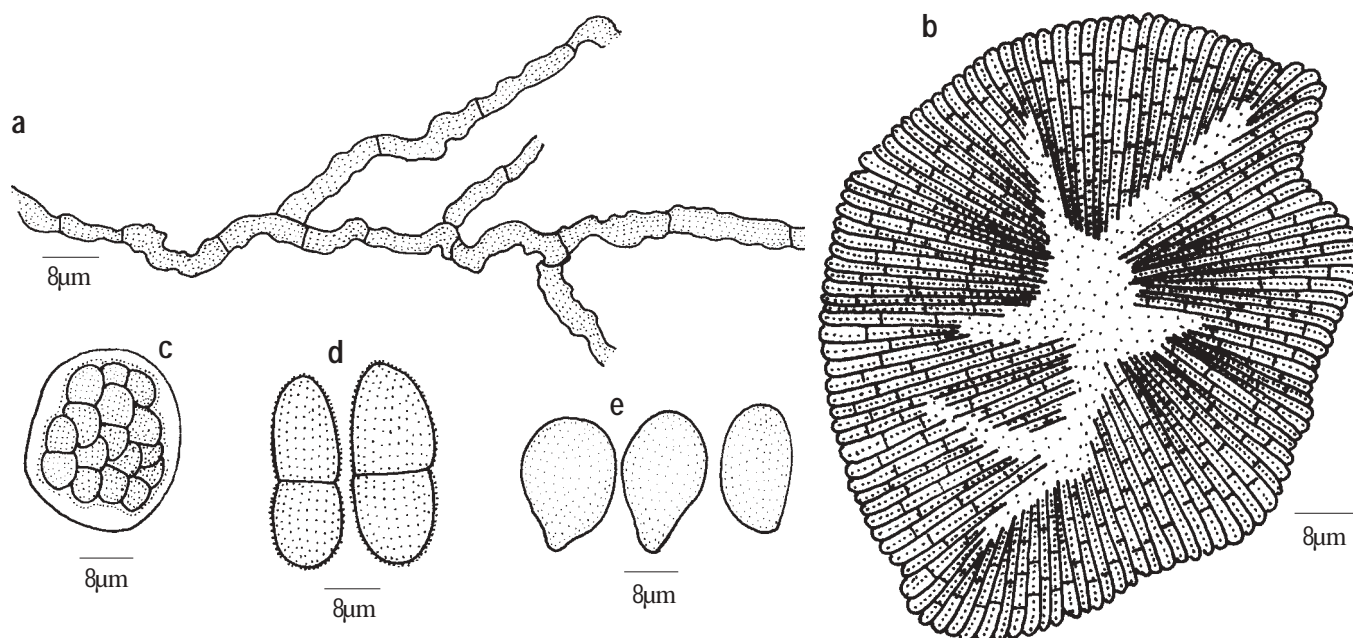


Figure 3. *Prillieuxina anamirtae* (Sydow & Sydow) Ryan
a - Non appressoriolate mycelium, b - Thriothecium, c - Ascus, d - Ascospores, e - Pycnothyriospores.

matured ascospores. Pycnothyria similar to thriothechia, scattered, smaller than the thriothechia; pycnothyriospores brown, unicellular, pyriform, 16-18 x 12-15µm, wall smooth.

Remarks

This species was known on the same host from Philippines and appears to be known only from the type collection, and is reported here for the first time from India (Müller & Arx, 1962; Stevens & Ryan, 1939; Bilgrami *et al.*, 1991).

However, ascospores and pycnothyriospores were larger in the present collections.

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