

Maheshwaramyces, a new genus of the family Lembosiaceae

V.B. Hosagoudar, G. R. Archana and Mathew Dan

Abstract: A new genus *Maheshwaramyces*, with the type, *M. pachygonus*, infected the leaves of *Pachygone ovata* has been described and illustrated in detail. This new genus belongs to the family Lembosiaceae of the order Asterinales.

Keywords: *Maheshwaramyces*, new genus, new species, Lembosiaceae, Asterinales

Introduction

Arnaud (1918) proposed the genus *Maurodothina* and its description was emended by Pirozynski and Shoemaker (1970). The genus *Maurodothina* characterized by both superficial and endophytic mycelium. Superficial mycelium brown, septate, bearing conidiogenous cells. Immersed mycelium aggregated into sub-cuticular plectenchymatous stromata or rarely enter into the mesophyll cells. Conidiogenous cells globose, borne directly on the superficial mycelial cells; conidia tretic, brown, one septate. Thyriothechia mostly discrete or rarely confluent, circular, composed of mostly radial rows of dark brown cells, opening by irregular stellate fissure; asci bitunicate, subglobose to oval, ascospores brown, 1-septate, constricted at the septum (Pirozynski and Shoemaker, 1970).

However, Arx and Muller (1975) synonymised the

genus *Maurodothina* with that of *Eupelte* and made the combination of three species, *E. dothideoides* (Ellis & Everh.) Arx & Muller, *E. farrae* (Pirozynski & Shoemaker) Arx & Muller and *E. amicta* Sydow (type species). Infact, the genus *Eupelte* possesses conidiophores while the genus *Maurodothina* lacks them. This character is quite enough to distinguish the genus *Maurodothina* from *Eupelte*. However, we collected a fungus which produces tretic conidia from the conidiogenous cells borne directly on the mycelial cells. Based on this character the present fungus can be accommodated in the genus *Maurodothina* of the family Asterinaceae. However, the present fungus has elongated thyriothechia dehisce longitudinally, which is the character of the family Lembosiaceae (Hosagoudar *et al.* 2001). No genus in Lembosiaceae having the production of tretic conidia from the conidiogenous cells borne directly on the mycelial cells.

Maheshwaramyces V.B. Hosagoudar, gen. nov.

(Order- Asterinales, Family-Lembosiaceae)

(Named after the Indian mythological God, Maheshwara)

Mycetae foliicololae, hyphae partim superficialis et partim in cellulis epidermalis immersae. Hyphae superficialis ramosae. Cellulae conidiogenae producentes a cellulae myceliales, globosae. Conidia phragmospora, uni vel multiseptata, brunnea, constrictus ad septata. Thyriothechia plerumque connata, elongata, dehiscences longitudinalis; asci ovati, clavati, globosi, bitunicati, octospori; ascosporae brunneae, bicellulae, constrictus ad septatus.

Foliicolous fungus, hyphae partly superficial and partly immersed in the epidermis. Superficial hyphae brown, branched. Conidiogenous cells borne directly on the mycelial cells, globose. Conidia phragmosporous, one to many septate, brown, constricted at the septa. Thyriothechia mostly connate, elongated, dehisce longitudinally; asci ovate, clavate, globose, bitunicate, octosporous; ascospores brown, two celled, constricted at the septum.

Type species - *M. pachygonus* sp. nov.

Taxonomy

Maheshwaramyces pachygonus sp. nov.

(Fig.1, Plate.I & II)

Coloniae amphigenae, caulicololae, densae, ad 2 mm diam. Hyphae partim superficialis et partim in cellulis epidermalis immersae. Hyphae superficialis subrectae, flexuosae, irregulariter ramosae, producentes cellulae conidiogenae, cellulae 11-28 x 3-5 μ m. Cellulae conidiogenae globosae vel cylindratae, monotreticae, 4-10 x 4-8 μ m. Conidia phragmospora, brunnea, uni vel multiseptata, constrictus ad septata, recta vel curvula, rotundata ad ambi apicem, parietus glabrus, 19-72 x 12-48 μ m. Thyriothechia plerumque aggregata, ovata, elongata, X vel Y forma, recta vel curvula, astomata, dehiscences verticalis ad centro, margine fimbriatae,

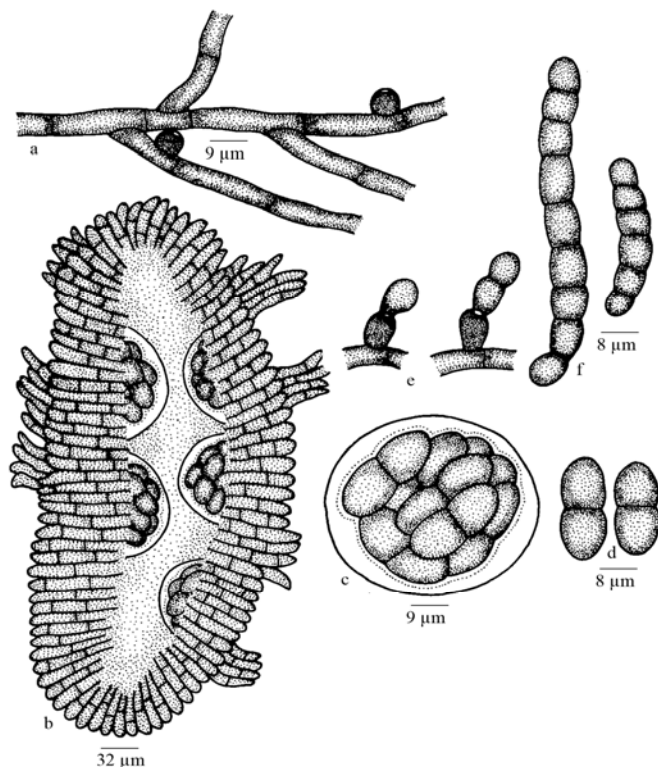


Fig.1. *Maheshwaramyces pachygonus* gen. et sp. nov.

a. Branched mycelium, b. Longitudinally dehiscenced thyriothechium with exposed asci, c. Ascus, d. Ascospores, e. Globose conidiogenous cells producing conidia, f. Conidia

hyphae fringiorae breviter, compactae, thyriothecia 195-690 x 100-252 μm ; asci numerosi, globosi, subglobosi vel clavati, octospori, paraphysati, bitunicati, 20-51 x 12-37 μm , paraphyses hyalinae, filiformis; ascosporae hyalinae ad initio, brunneae ad maturitatae, conglobatae, uniseptatae, constrictus ad septatae, 16-24 x 8-13 μm , parietus glabrus.

Colonies amphigenous, caulicolous, dense, up to 2 mm in diam. Hyphae partly superficial and partly immersed in the epidermis. Superficial hyphae substraight, flexuous, irregularly branched, bearing conidiogenous cells, cells 11-28 x 3-5 μm . Conidiogenous cells globose to cylindrical, monotretic, 4-10 x 4-8 μm . Conidia phragmosporous, brown, one to many septate, constricted at the septa, straight to variously curved, rounded at both the ends, wall smooth, 19-72 x 12-48 μm . Thyriothecia mostly grouped, oval, elongate, X or Y shaped, straight to curved, astomatous, dehisce vertically at the centre, margin fimbriate, fringed hyphae small, compact, thyriothecia 195-690 x 100-252 μm ; asci many, initially globose, subglobose, clavate, octosporous, paraphysate, bitunicate, 20-51 x 12-37 μm , paraphyses hyaline, filiform; ascospores initially hyaline, brown at maturity, conglobate, uniseptate, constricted at the septum, 16-24 x 8-13 μm , wall smooth.



PLATE I. *Maheshwaramyces pachygonis* gen. et sp. nov.
Infected leaves

Material examined: On leaves of *Pachygone ovata* (Poir.) Miers ex Hook.f. & Thoms. (Menispermaceae), TBGRI Campus, Palode, Thiruvananthapuram, Kerala, India, April 4, 2008, Mathew Dan HCIO 48298 (type), TBGT 3017 (isotype).

References

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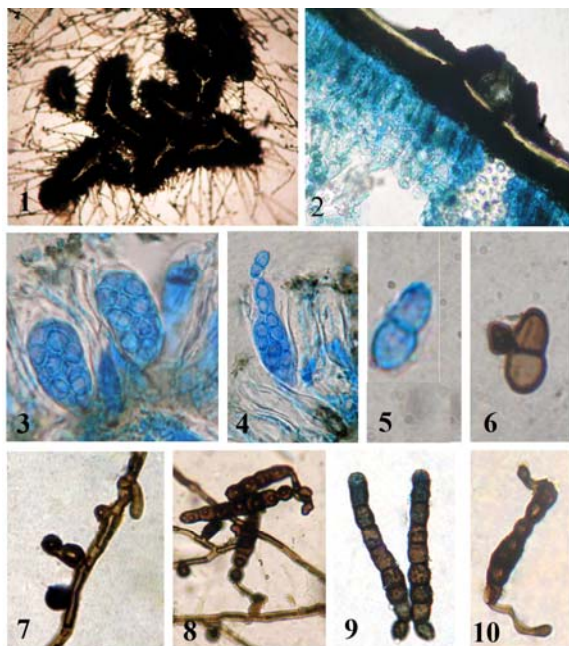


PLATE II. *Maheshwaramyces pachygonis* gen. et sp. nov.

1. Connate thyriothecium, 2. T.S. Showing subepidermal stromata,
3. Asci flanked with paraphyses, 4. Dehiscing ascus, 5. Hyaline ascospore,
6. Matured ascospore, 7. Conidiogenous cells, 8. Conidia produced from the conidiogenous cell, 9. A pair of conidia, 10. Germinating conidium producing bulbous tip