KAVAKA 55: 119-120 (2020) doi:10.36460/Kavaka/55/2020/190-120

Maheshwaramyces cryptocaryae sp.nov. (*Lembosiaceae, Asterinales, Ascomycota*) on *Cryptocarya wightiana* Thw. from Goodrical Reserve, Ranny forest, Kerala, India

Jacob Thomas* and Nisha Mathew
PG & Research Dept. of Botany, Mar Thoma College, Kuttappuzha P O, Tiruvalla 689103, Kerala, India
**Corresponding author Email: jacobnthomas@gmail.com*
(Submitted on July 20, 2020; Accepted on October 12, 2020)

ABSTRACT

In this paper a new foliicolous fungal species of genus *Maheshwaramyces,* namely *Maheshwaramyces cryptocaryae* sp. nov., was found infecting the leaves of *Cryptocarya wightiana* Thw. (*Lauraceae*). The newly named fungus belongs to the family *Lembosiaceae* of the order *Asterinales*.

KEYWORDS: New species, *Maheshwaramyces*, *Lembosiaceae*, taxonomy, fungi, Western Ghats

INTRODUCTION

Asterinaceous fungi are sooty moulds characterised by thyriothecia having stellately or longitudinally split dehiscence aperture and uniseptate ascospores. The fungus reported here produces tretic-type conidia on the conidiogenous cells borne directly on the mycelia. Based on this character the presently worked out fungus has been placed under genus *Maheshwaramyces* of the family *Asterinaceae*. Although it has elongated thyriothecia dehiscing longitudinally, which is the character of the family *Lembosiaceae* (Hosagoudar *et al.*, 2001) but none of the genera in family *Lembosiaceae* is having tretic-type conidia developing from the conidiogenous cells borne directly on the mycelia, which is a unique feature of genus *Maheshwaramyces*.

MATERIALS AND METHODS

Plant leaves with black superficial fungal infections were collected from Moozhiyar, Ranny forest division of Goodrical Reserve in Pathanamthitta district of Kerala State, India. The leaves were packed separately in polythene bags along with host twig, preferably with the reproductive parts to facilitate the identification of the host. The infected plant parts were neatly pressed and dried between blotting papers. The dried leaves were used for microscopic study.

A drop of transparent nail polish was applied to selected colonies on the leaves and carefully thinned with the help of a fine brush without disturbing the colonies. The treated colonies were kept in dust free chamber for half an hour. When the nail polish on the colonies were fully dried, a film or flip was formed with the colonies firmly embedded in it. In case of soft host parts, the thin film lifts up with slight pressure on the opposite side of the leaves and just below the colonies. In case of hard host part, the flip was eased off with the help of a razor or scalpel. A drop of DPX was put on a clear slide and the flip was gently placed on it. One or two more drops of DPX were again added on the flip and a clean cover glass was placed over it. Excess DPX was removed by a gentle pressure on the cover glass. Care was taken to avoid air bubbles. These slides were labelled and placed in a dust free chamber for 1-2 days for drying. The permanent slides used in this study are retained in the regional herbarium, Mar Thoma College Herbarium Thiruvalla under MTCHT.

TAXONOMIC DESCRIPTION

Maheshwaramyces cryptocaryae Jacob Thomas and Nisha Mathew sp.nov.

MycoBank Number: 835656

Diagnosis: The present species can be identified on the basis of its host specificity, colony morphology, crenate margin of the thyriothecium, short conidia and epiphyllous colonies. Based upon these unique features the present species has been described.

Etymology- The name of the species is after the plant host genus *Cryptocarya*

Colonies epiphyllous, moderately dense, crustose, up to 2 mm in diameter, confluent. **Hyphae** partly superficial and immersed in the epidermis. Superficial hyphae straight to substraight, flexuous, septate, irregularly branched, 10-34× 1-5 µm, bearing conidiogenous cells. **Conidiogenous cells** globose to cylindrical, monotretic, 13-29 × 3-7 µm. **Conidia** phragmosporous, brown, one to many septate, constricted at septa, straight to variously curved, rounded at both the ends, smooth-walled, 35-54 × 6-10 µm. **Thyriothecia** mostly in groups, oval to elongate, sometimes Y-shaped, straight to curved, vertically dehiscing at the center, crenate at the margin, with short fringed hyphae , compact, 140-452× 129-404 µm; asci many, initially globose, later becoming subglobose to clavate, octosporous, paraphysate, bitunicate, 19-45 × 16-34 µm, with hyaline, filiform paraphyses; **ascospores** initially hyaline, becoming brown at maturity, conglobate, uniseptate, constricted at the septum, 17-29 × 8-11 µm, smooth-walled.

Material examined: Goodrical Reserve, Ranny Forest Division, Moozhiyar-Illumpampa region, Kerala, India.: On leaves of *Cryptocarya wightiana* Thw. (*Lauraceae*), July, 7 2018, Nisha Mathew; MTCHT 500 (**holotype**), **MycoBank**: 835656.

DISCUSSION

The species of *Maheshwaramyces* are superficial, obligate biotrophs on the leaves which appear as small to big black colonies. These are commonly referred as 'black mildews' (Hosagoudar *et al.*, 2001). Among them 'Asterinaceous fungi' produce flattened fruiting bodies called thyrothecia which slit either radially (as in *Asternaceae*) or longitudinally

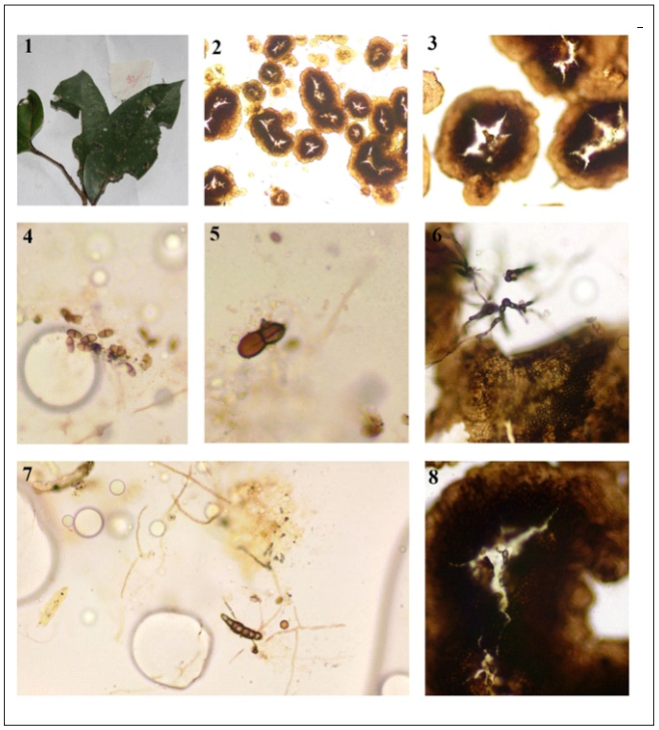

Fig. 1. *Maheshwaramyces crytocaryae* sp. *nov.* 1. Infected leaves of *Cryptocarya wightiana*, 2. Colony, 3. Crenate thyriothecia, 4-5. Ascospores, 6. Conidia produced from conidiogenous cells, 7. Conidia, 8. Conidia along with thyriothecium

(as in *Lembosiaeae*) and are well characterised by bitunicate asci formed within the thyriothecium that contain transversely uniseptate ascospores (Hosagoudar and Archana, 2012). The genus *Maheshwaramyces* is quite close to genus *Lembosia*, the type genus of family *Lembosiaceae* (Hosagoudar *et al.*, 2001) but differs in having conidiogenous cells borne directly on the mycelia cells. Only two species of the genus *Maheshwaramyces* are so far known, viz. *M. coculi* (Hosagoudar and Archana, 2012) and *M. pachygones* (Hosagoudar, *et al.*, 2009; 2011) from a single host family *Menispermaceae*. The species newly described here *M. cryptocaryae* was collected from *Cryptocarya wightiana* belonging to family *Lauraceae*, which is a new host for this genus. This tree forms a subcanopy in low elevation evergreen forest. The presently named species differs greatly from the other two earlier described species on the basis of its host specificity, colony morphology, crenate margin of the thyriothecium, short conidia and colonies only epiphyllous in appearance. Based upon these unique features the present species has been described.

ACKNOWLEDGEMENTS

We are grateful to the KSCSTE, Govt. of Kerala; Department of Forests, Govt. of Kerala; Principal Mar Thoma College, Tiruvalla, Kerala, for providing lab facilities and Mahatma Gandhi University, Kottayam for their financial support.

REFERENCES

Hosagoudar, V.B. and Archana, G.R. 2012. *Asterinales* of India. *Mycosphere* **2** (5): 617-852. Doi 10.5943/*Mycosphere*/3/5/9.

Hosagoudar, V.B., Abraham, T.K. and Biju, C.K. 2001. Re-evaluation of the family *Asterinaceae*. *Journal of Mycopathological Research* **39**: 61-63.

Hosagoudar, V.B., Archana,G.R. and Dan.2009. *Maheshwaramyces*, a new genus of the family *Lembosiaceae*. *Indian Journal of Science and Technology* **2** (6): 12-13.

Hosagoudar, V.B., Chandraprabha, A. and Agarwal, D.K.2011. *Asterinales* of Kerala. Associated Publishing Company, pp. 270+pL.23.