



## *Thirumalacharia thanensis* sp.nov- A new species of anamorphic Ascomycota from Maharashtra, India

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### ABSTRACT

An undescribed anamorphic Ascomycota fungus was collected during investigations of foliicolous fungi in protected areas of Western Ghats of India. In morphology, new collection resembles *Thirumalacharia* which is still monotypic. New collection was compared with the known species and it is morphologically distinct thus, introduced as *Thirumalacharia thanensis*. New species is illustrated, description is provided and compare with the type species.

**Keywords:** Biodiversity, echinulate, Konkan, transverse septa

### 1. INTRODUCTION

Konkan, also known as the Konkan Coast or Kokan, is a rugged section of the western coastline of India. It is a 720 km long coastline. It is roughly a land between the Western Ghats and the Arabian Sea at western coastline of India and known as little slice

of paradise of Maharashtra. Most of the area is covered by dense rain forest, and are suitable for habitat of Microfungi. The warm and humid climatic conditions are quite favorable for the growth of fungal species. During mycological survey of conidial fungi from the dense rain forest of the Mokhada Taluka of Thane Dist of Kokan region, an unusual and very interesting hyphomycetous fungus was collected from the leaves of *Coix lacryma-jobi* L. The fungus was identified as *Thirumalacharia* based on the presence of ampullose conidiophores, polyblastic conidiogenous cells and solitary conidia. The genus *Thirumalacharia* was reported by Rathiah in 1981 with type species *T. Curcumae* on living leaves of *Curcuma longa* from Shilong, India (Rathiah, 1981). Still the genus is monotypic (Jamaluddin, 2004, Anonymous 1974 – 2016, Bilgrami et al. 1981, 1991) with type species *T. curcumae* and is characterised by macronematous, mononematous, unbranched conidiophores, which terminates in series of spherical to subsphaerical ampulla bearing cupulate polyblastic, conidiogenous cells and solitary, medium brown, mostly one septate, smooth, ellipsoidal to short cylindrical and medially constricted conidia.

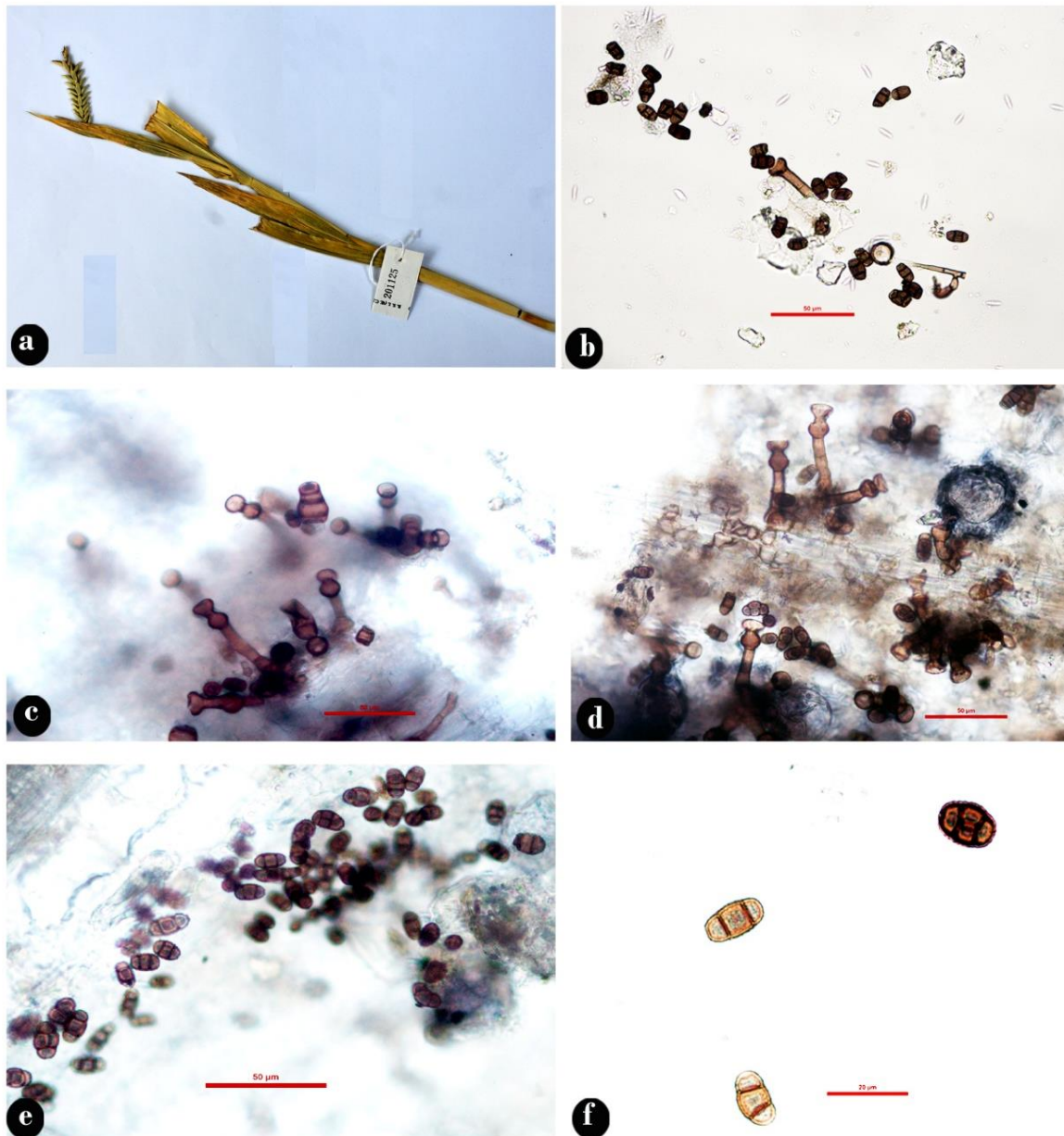


Fig.1-*Thirumalacharia thanensis* sp.nov. (a) Infected leaves of *Coix lacryma-jobi* (b-d) Ampullose conidiophores with conidia (e) Conidia with two horizontal and sometimes with one vertical septa (f) Echinulate biseptate conidia [Scale bar: (b-e) = 50 µm; f = 20 µm]

## 2. TAXONOMIC DESCRIPTIONS

***Thirumalacharia thanensis* Dubey sp. nov.** (MB 816648) (Fig.1)

Leaf spots are oval to oblong, brown, spreaded over surface of the leaves. Mycelium internal, hypophyllous. Conidiophores arising through the epidermal cells, macronematous, mononematous, unbranched, rarely once branched, straight, 1 – 2 septate, light brown to brown, 40 – 60 × 5 – 7 µm. Each conidiophores terminating in an ampulla which is spherical to sub spherical and more dark brown than the conidiophores. Each ampulla bearing a conidiogenous cell which is first spherical becoming cupulate by invagination, lower part dark brown, upper part paler thin walled, fertile, 8 – 12 µm. Conidiogenous cell sometimes forming new ampullae or sometimes produces conidia on lateral side of ampullae. Conidia single, broadly ellipsoidal, echinulate, not smooth, 16 – 17 × 9 – 12 µm, transversely septate, mostly 2 transverse septa, sometimes 3 transverse septa present, septa constricted, median cell broader and larger than the apical and basal cell. Sometimes vertical septation.

**Specimen examined:** On living leaves of *Coix lacryma-jobi* L.(Poaceae), Pulachiwadi, Thane dist. Konkan Division, Maharashtra, 18.10.2012, RD, 201125 BSI (WC). The descriptions were also deposited in Mycobank, MB 816648.

**Etymology:** - The epithet is based on the place of collection (Thane Dist) from where it is collected.

## 3. CONCLUSION

The present species very clearly differs from the type species in the morphology and dimensions of conidia. The conidia of type species is large, measuring 16 – 39 x 11 – 21µm, smooth and uniseptate (very rarely 2 septate), where as in the present species the conidia are small (16- 17 x 9 -12 µm) echinulate and strictly 2 septate, rarely three septate, sometimes vertical septa is also observed. This also features distinguishes the present species from *T. curcumae* and thus the present species was erected as a new species as *T. thanensis* sp. nov.

## SUMMARY OF RESEARCH

Sufficiently large collection of specimens, documentation and descriptions of a number of novel taxa of foliicolous fungi from the Western Ghats, indicate that we have incredible fungi in our area. Floristic details and biological associations when investigated systematically, as done in this study, a treasure of information gets unfolded before us. It is something like nature revealing secrets before us. It was examined that very low number of foliicolous species have been reported earlier and not the true number of foliicolous fungal species occurring in Maharashtra, which reflects the small study efforts made to map them. This is a modest contribution to the understanding and conservation of our national bioresources.

## FUTURE ISSUES

In overall reviews of Biodiversity and global genetic resources, fungi in particular did not receive the attention they deserve on account of their number and the extent to which they are exploited commercially. Many areas in the biology of these fungi need to be further studied and many more mycologists are needed to assist in this, as well as in applied science research projects gaining momentum world-wide.

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