

# Dematiaceous Hyphomycetes from North Maharashtra

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## Abstract

The present paper deals with three species of *Dictyosporium* Corda viz. *Dictyosporium elegans* Corda, *Dictyosporium cocophilum* Bat and *Dictyosporium tetraseriale* Goh, Yanna and Hyde were collected from the submerged wood samples from the various water bodies in North Maharashtra region. Two species viz. *Dictyosporium cocophilum* Bat and *Dictyosporium tetraseriale* Goh, Yanna and Hyde are recorded for the first time from India. Brief notes and illustration are given for each taxon. Geographical distribution of each species in India is also provided.

**Keywords:** Dematiaceous Hyphomycetes, *Dictyosporium*, India.

## INTRODUCTION

The hyphomycetes (Mitosporic fungi) are a group of fungi that consists of asexual states of mostly Ascomycetes and some Basidiomycetes. The hyphomycetes (Mitosporic fungi) undergo mitotic division to produce microsporic asexual structures called conidia, which are of various colours, sizes, shapes, and septations. The mitosporic fungi are also traditionally referred to as fungi imperfecti, anamorphic fungi, or the form taxon deuteromycotina [1]. These fungi in its lifetime can reproduce sexually by producing meiospores (ascospores or Basidiospores) as well as asexually by producing mitospores (conidia) or by producing only meiospores or only mitospores. The mitosporic fungi are classified into two main classes, namely Hyphomycetes and Coelomycetes. The Hyphomycetes produce conidia directly from vegetative structures (Hyphae) or on distinct conidiophores (a specialized hypha that bears conidiogenous cells and conidia) whereas, Coelomycetes produce conidia within asexual fruit bodies called pycnidia [2]. Dematiaceous Hyphomycetes are common hyphomycetes with dark conidia or conidiophores [3].

## MATERIALS AND METHODS

The survey was undertaken for one year (June 2009- May 2010). Samples of submerged wood were collected from various streams from Sakri, Shirpur, Padmalaya, Toranmal. Samples were transported in a cooling box to the laboratory. After rinsing in tap water, samples were placed in plastic boxes filled with distilled water and aerated by compressed air in an incubator at room temperature. After one week of aeration the samples were examined for the presence of fungal fruiting structures. Then the samples were placed in Petri-dishes with moistened filter paper and incubated at ambient temp. of 25<sup>o</sup> - 30<sup>o</sup> C for some weeks to stimulate fungal development.

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Voucher slides of the fungi reported were deposited in the mycology herbarium, P. G. Department of Botany, S. S. V. P. Sanstha's L. K. Dr. P. R. Ghogrey Science College, Dhule, M. S.

## Taxonomic Account

**Genus:** *Dictyosporium* Corda

*Dictyosporium* species have been recorded world wide as saprobes on dead wood, decaying leaves and palms in terrestrial, marine and freshwater habitats [4 and 5]. The genus is characterised by having, Sporodochia: compact, with mostly immersed mycelium. Conidiophores: micronematous or absent. Conidia: holoblastic, solitary, dematiaceous, cheiroid with multiple columns of cells, closely branched from the base, without the arms separating, in most species flattened in one plane, and then seceding rhexolytically. The genus is represented 30 accepted species and they are distinguished by morphological characters such as the number of conidial arms, the shape, colour and size of the conidia and the presence/ absence of appendages [4,5,6,7,8,9 and 10]. Tsui et al. (2006) [11] studied molecular phylogeny of *Dictyosporium* and allied genera inferred from ribosomal DNA.

**Type species:** *Dictyosporium elegans* Corda

**Habitat:** Saprobic on plant litter.

**Description:** Based on Ellis (1971) [3], Goh et al. (1999) [4] and Tusi et al. (2006) [11].

***Dictyosporium cocophilum* Bat.**

**Colonies:** on natural substratum in the form of sporodochia.  
**Conidia:** 53-75 X 19-22 µm, median brown to dark brown, cylindrical, not complanate, consisting mostly of 7 rows of cells arranged in a compact cylinder. Conidial appendages are absent.

**Habitat:** Saprobic on submerged decaying wood in freshwater.

**Description:** Based on Goh et al. (1999) [4].

**Distribution:-** Maharashtra (present study)

**Remark:** It is being reported for the first time from India.

***Dictyosporium elegans* Corda**

**Colonies:** on natural substratum effuse, not in the form of sporodochia. **Conidia:** (44-)50-80 x 24-31(-36) µm, uniformly golden or reddish brown, complanate, cheiroid, consisting of 51-96 cells arranged mostly in 5 rows. The outer rows are usually shorter.

The terminal cells of the 3 inner rows are usually larger than other cells in the conidium. Conidial appendages are absent.

**Habitat:** Saprobic on submerged decaying wood in freshwater.

**Discription:** Based on Goh et al. (1999) [4].

**Distribution in India:** Weatern Ghats and Goa [12], Maharashtra [13].

***Dictyosporium tetraseriale*** Goh, Yanna and Hyde

**Conidiophores:** sub-hyaline to pale brown, thin walled, short, irregularly branched.**Conidiogenous cells:** cylindrical, determinate.

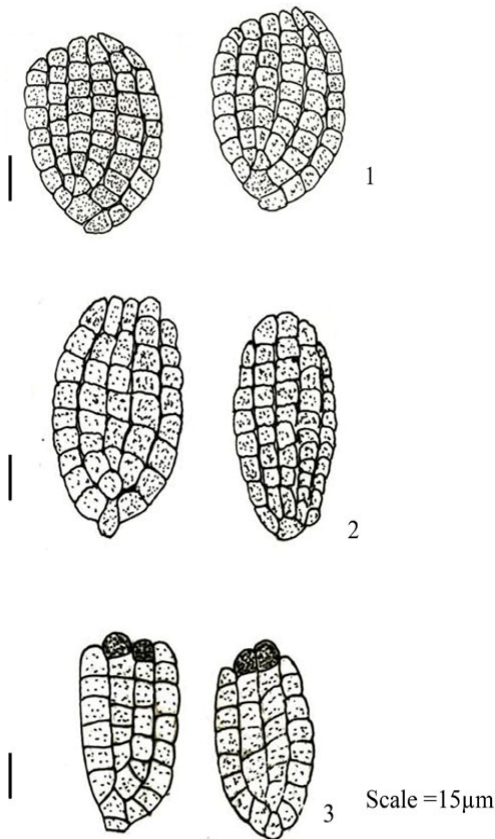
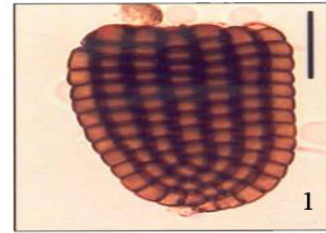
**Conidia:** 24- 40 X 14- 20 μm, complanate, cheiroid, smooth walled, medium brown, consisting of 24- 38 cells, arranged in 4 rows which are inserted in a pale brown to brown, 2- 3μm diameter, truncate basal cell. The cells comprising the central two rows are darker than those of the outer rows. The cells at the apical portion of the two central rows are slightly swollen and are darker than the other cells of the conidium.

**Habitat:** Saprobic on submerged decaying wood in freshwater.

**Discription:** Based on Goh et al. (1999) [4].

**Distribution:-** Maharashtra (present study)

**Remark:** It is being reported for the first time from India. All the three species of *Dictyosporium* were rarely found.



1) *Dictyosporium cocophilum* Bat. (Conidium) (Scale=15μm)  
 2) *Dictyosporium elegans* Corda (Conidium) (Scale=20μm)  
 3) *Dictyosporium tetraseriale* Goh, Yanna and Hyde (Conidium) (Scale=15μm)

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1) *Dictyosporium cocophilum* Bat. (Conidia)  
 2) *Dictyosporium elegans* Corda (Conidia)  
 3) *Dictyosporium tetraseriale* Goh, Yanna and Hyde (Conidia)

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