

A NEW SPECIES OF PHALANGISPORÆ FROM INDIA

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ABSTRACT A new dematiaceous setose, sporodochial hyphomycete, *Phalangispora bharathensis*, producing unicellular conidia connected by narrow isthmi in branched chains on polyblastic discrete conidiogenous cells, isolated from decaying leaves of *Holigarna arnotiana* (Wt. & Arn.) Hook.f. (F. Anacardiaceae) is described from the forests of Western Ghats in southern India.

KEY WORDS: Hyphomycetes, taxonomy

INTRODUCTION

During studies on the taxonomy and diversity of microfungi of the forests of Western Ghats in southern India, an interesting setose, sporodochial hyphomycete producing hyaline, smooth, unicellular conidia connected by narrow isthmi in branched chains on polyblastic discrete conidiogenous cells and short, thin-walled, hyaline, septate, conidiophores was isolated from fallen and decaying leaves of *Holigarna arnotiana* (Wt. & Arn.) Hook.f. (F. Anacardiaceae) collected from Cotigao Wildlife Sanctuary in Goa State, India and incubated in sterile moist chamber in the laboratory for about two weeks. The fungus is described here as a new species of the genus *Phalangispora* Nawawi & Webster (1982).

TAXONOMIC PART

Phalangispora bharathensis Keshava Prasad et Bhat sp. nov.

(Fig. 1, a-d)

[Etym: Bharath = India]

Coloniae effusae, olivaceae ad atrobrunneae. *Mycelium* partim superficiale, partim immersum, ex hyphis septatis, ramosis, hyalinis vel pallide brunneis 2.5-3.5 μm lat. compositum. *Conidiomata* sporodochia, solitaria, pulvinata, 8-16 setas basim ferentia. *Setae* subulatae, apice acutae, septatae, crassitunicatae, atrobrunneae; laeves, ex strato conidiophorum protrudentes, 300-400 x 7-10 μm . *Conidiophora* mononematosa, erecta, dwarfa, septata, ramosa in supra, hyalina, 15-30 μm longa, 2-4.5 μm lat. *Cellulae conidiogenae* polyblasticae, discretiae, terminalis ad ramosis fertilis, denticulatae ad apicem spherical. *Conidia* hyalina, laevia, aseptata, catenata, plerumque

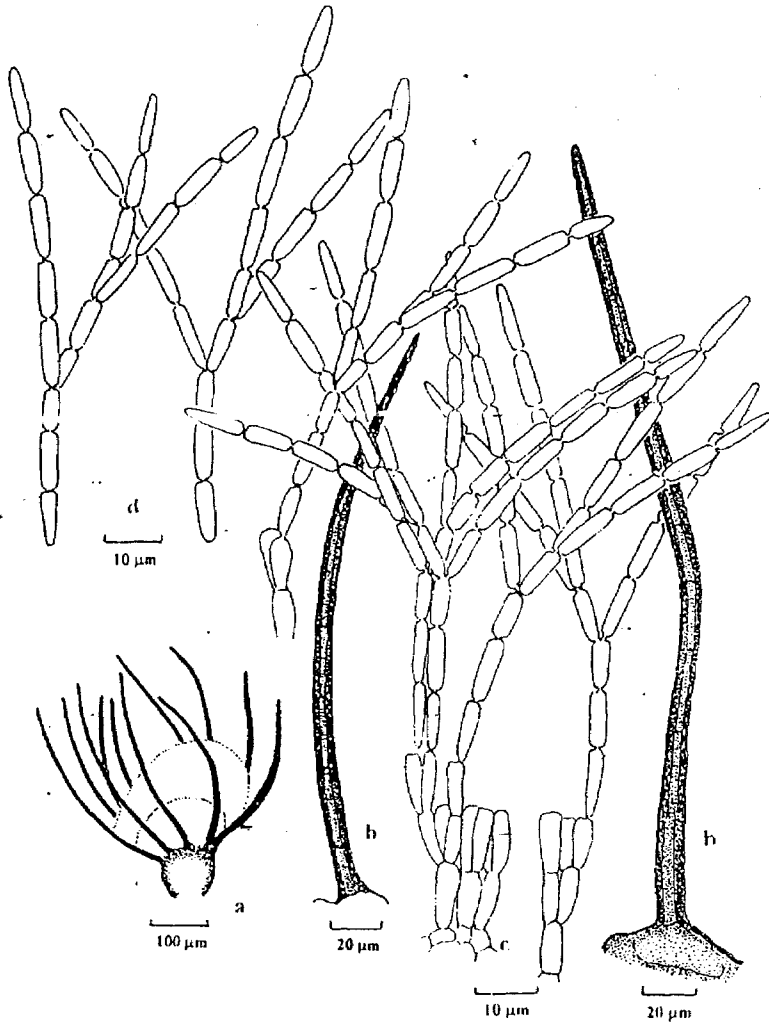


Fig. 1. *Phalangispora bharaohensis*: a. Entire sporodochium, b. Setae, c. Conidiogenous cells with attached conidial chains, d. Conidia

in 2-3-ramosa, infra uniseriata vel supra bi- ad triseriata, 75-85 μm longa, 2.5-4 μm lat.; cellulae apicale ad basale conicale vel obclavatae, 7-9 x 2.5-3.5 μm ; cellulae

intermediatae cylindricae, terminale truncatae, 8-10 x 2.5-4 μm ; in massis hyalina vel atrobrunneae.

HOLOTYPE, In foliis putrescentibus *Holigarna arnotiana* (Wt. & Arn.) Hook.f., Cotigao Wildlife Sanctuary, Goa, India, 11 March 1999, Keshava Prasad, Herb. No. IMI 387091.

Terrestrial litter hyphomycete. Colonies effuse, olivaceous brown to dark brown. Mycelium partly superficial, partly immersed, composed of septate, branched, colourless to pale brown hyphae 2.5-3.5 μm wide. Conidiomata sporodochial, solitary, pulvinate, slightly elevated, with 8-16 setae arising from the margin of the base. Setae subulate, acute at the apex, septate, thick-walled, dark brown, smooth, protruding beyond the level of conidiophores and conidial mass, 300-400 x 7-10 μm . Conidiophores mononematous, erect, short, arising in groups, septate, 1-2 times branched, thin-walled, colourless, smooth, 15-30 μm long, 2-4.5 μm wide. Conidiogenous cells polyblastic, discrete, terminal, hyaline, smooth, with denticulate scars at the rounded apex. Conidia hyaline, smooth, aseptate, in 2-3-branched chains of 75-85 μm long, 2.5-4 μm wide, connected by narrow isthmi, uniseriate below, bi- to triseriate above, with branches arising from the third and fourth cells of the main axis, of two types: apical and basal cells conical to obclavate, 7-9 x 2.5-3.5 μm ; intermediate cells cylindrical with truncate ends, 8-10 x 2.5-4 μm ; in mass initially whitish, later becoming pale brown.

Dematiaceous genera of Hyphomycetes producing unicellular conidia connected by narrow isthmi can be grouped into two categories based on the branching of conidial chains. The genus *Wiesneriomyces* Koorders (1907), typified by *W. laurinus* (Tassi) P.M. Kirk (1984), producing unicellular conidia in unbranched chains in setose sporodochia has been known on terrestrial litter from many parts of the world (Subramanian, 1956; Manotis & Strain, 1968; Ellis, 1971, 1976; Matsushima, 1971, 1975; Kirk, 1983; Shaw & Sutton, 1985; Kuthubutheen & Nawawi, 1988). The genus *Isthmolongispora* Matsushima (1971, 1975), typified by *I. intermedia* Matsushima, is mononematous with conidia developing in unbranched chains. The genus *Speiropsis* Tubaki (1958), with *S. pedatospora* Tubaki as type species, is mononematous but has conidia in branched chains. The conidia of these litter inhabiting fungi are often recovered from freshwater stream habitat.

The genus *Phalangispora* Nawawi & Webster (1982), typified by *P. constricta* Nawawi & Webster, produces pale brown conidia in branched chains from setose sporodochia. The fungus has been reported from freshwater streams. The second species in the genus, *P. nawawi* Kuthubutheen (1987), differs from the type by its smaller-sized conidia and conidial chains and presence of fewer cells in the main axis of the conidial chain. In *P. constricta*, the conidia are 11-20 x 2.5-4 μm whereas in *P. nawawi* these are 10-12 x 2 μm . The conidial chains are 120-140 x 3-4 μm in *P. constricta* and 65-90 x 2 μm in *P. nawawi*. The branches in *P. constricta* and *P. nawawi* arise generally from the second and third cells of the main axis of conidial chain.

Unlike *P. constricta* and *P. nawawi*, in *P. bharathensis*, the branches arise from the third and fourth cells of the main axis of the conidial chain. Although the overall dimension of the conidial chains is similar to that of *P. nawawi*, in *P. bharathensis* the intermediate conidial cells are 8-10 x 2.5-4 μm . Further, the number of cells in the main axis of the conidial chain in *P. bharathensis* is 8-11 (mostly 9) whereas in *P. nawawi*, it is always 6-

8. Individual conidia are wider in *P. bharathensis* (2.5-4 μm) than those of *P. nawawi* (up to 2 μm).

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