

TWO UNDESCRIBED SPECIES OF CONIDIAL FUNGI FROM FORESTS OF WESTERN GHATS IN SOUTHERN INDIA

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Abstract

Bahusutrabeeja dubhashii sp. nov. and *Spegazzinia subramanianii* sp. nov. are described and illustrated from collections of forest litter made in Western Ghats, Southern India.

This communication deals with description of two so far undescribed species of conidial fungi isolated from forest litter of Western Ghats in southern India and these form part of a rich fungal biodiversity of the tropics.

Bahusutrabeeja dubhashii D.J. Bhat sp. nov. (Fig. 1)

(etym : In honour of Dr. P.R. Dubhashi, Vice Chancellor, Goa University, for his outstanding efforts of development of higher education in the State of Goa).

Coloniae effusae, atrobrunneae, velutinae. Conidiophora mononemata, erecta, recta vel flexuosa, nonramosa, laevia, crassitunicata, 3-5-septata, usque ad 170 μ m longa, 6-8.5 μ m, cum orificium phialido 3-4 μ m lat., cum 2-4 aequidistantibus positus (2-2.5 μ m distantia) proliferationes percurrenter et celeriter ad apicem cum distinctus collarrette. Conidia solitaria, blastica-phialidica, obpyriformea vel obclavata, incolourata, ad apicem cellulae conidiogenae in massam mucosam aggregata, crassitunicata, nonseptata, 15-20 μ m longa, 5-8 μ m lat., ad basim truncata, ad apicem arguta et rotundata, ad

basim 4 et apicem 2 tenuis setulae oppositorientata, vel 18 μ m longa.

Holotypus in foliis emortuis *Pandanus fascicularis* Lam., Molem Wildlife Sanctuary, Goa State, India, leg. D.J. Bhat, 20-10-1992 GUMH No. 122.

Colonies effuse, dark brown, velvety. Conidiophores mononematous erect, straight or flexuous, unbranched, smooth, thick-walled, 3-5-septate, up to 170 μ m long, 6-8.5 μ m wide; septa 18-28 μ m apart, dark brown, slightly inflated and up to 20 μ m wide at the base. Conidiogenous cells terminal, integrated, monophialidic, cylindrical to slightly wider above, 30-45 x 5-8 μ m, phialide opening 3-4 μ m wide with 2-4 equidistantly placed (2-2.5 μ m apart) percurrent and quickly formed proliferations at the tip, with distinct, slightly flaring collarettes. Conidia solitary, blastical-phialidic, obpyriform to obclavate, hyaline, accumulating in a slimy colourless mass at the apex of conidiogenous cell, thick-walled, nonseptate, 15-20 μ m long, 5-8 μ m wide, truncate at the base, narrower and rounded at the tip, with 4 basal and 2 apical, oppositely arranged, slender, up to 18 μ m long setulae.

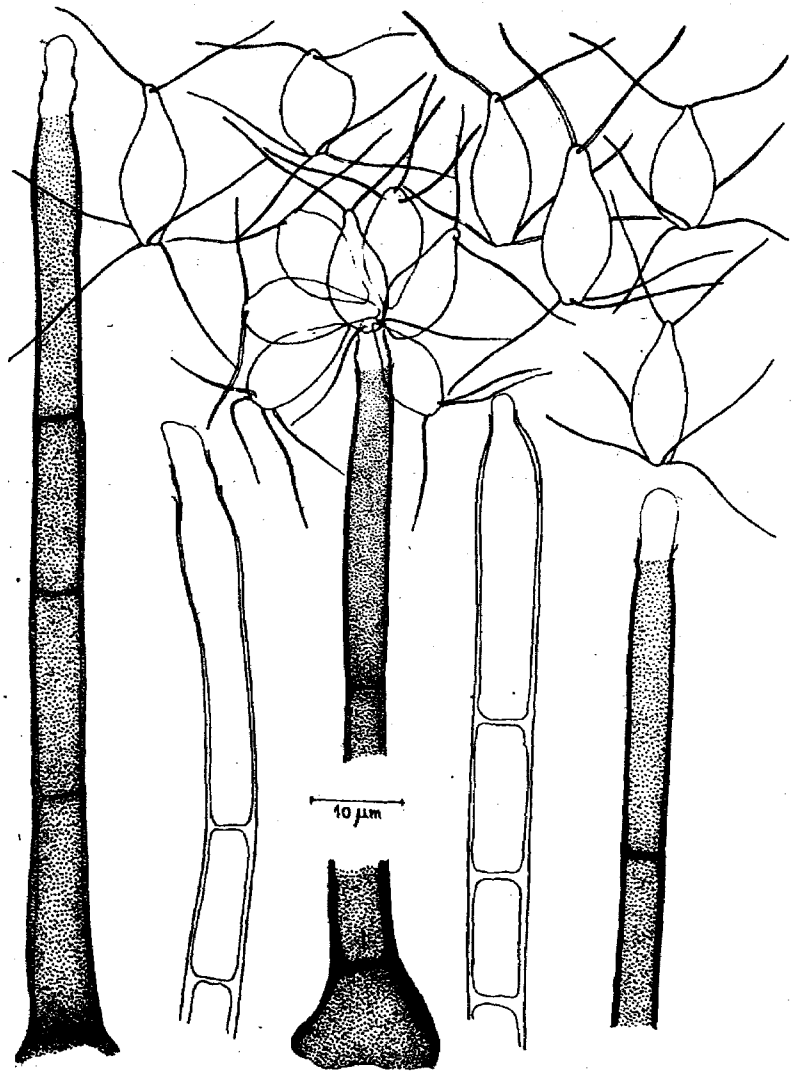


Fig. 1. *Bahusutrabeija dubhashii* sp. nov. : conidiophores and conidia

Since the description of the genus *Bahusutrabeoja* Subramanian et Bhat (1977), with *B. dwaya* Subramanian et Bhat as the type species, so far two species have been described, viz., *B. angularis* Rao et de Hoog (1986) and *B. globosa* Bhat, Kendrick et Nag Raj (1992). In *B. dwaya*, the first-formed conidia are pear-shaped while the subsequent conidia are globose and 12.5-14 μm diam. In *B. globosa* conidia are uniformly spherical and larger (18-22 μm diam). The setulae of *B. dwaya* are 4.5-5 μm long whereas in *B. globosa* these are 6.5-12.5 μm long. In *B. angularis*, conidia are much smaller (7-8 μm diam.) and angular, appear 4-5-sided, with a setula arising from each corner. In *B. dubhashii*, conidia are obpyriform to obclavate, 15-20 x 5-8 μm , with up to 18 μm long and oppositely arising 4 basal and 2 apical setulae.

Spegazzinia subramanianii D.J. Bhat sp. nov. (Fig. 2).

(etym : In honour of Dr. C.V. Subramanian, former Director, C.A.S. in Botany, University of Madras, for his outstanding efforts of development of Mycology in the tropics).

Coloniae effusae, atrobrunneae, pulveraceae, in conidiophori *Helminthosporium velutinum* Link ex Ficus & Schubert obtegentes. Mycelium superficiale, ex hyphis prostratis ramosis, septatis, hyalinis vel subhyalinis, 1-2.5 μm crassis compositum. Conidiophora basauxica mononemata, recta, flexuosa, angustata, hyalina vel subhyalina, minute dentata in tunicae, nonramosa, usque ad 15 μm long 1-2.5 μm lat., une ex doliiforma vel ampuliforma metricemulae conidiophora oriunda 2.5-5 x 1.5-2 μm . Cellulae conidiogenae integrat cylindricae, mono-

blasticae, ad basim elongatae. Conidia solitaria, sicca, pyriforma vel turbinata, curvata ad basim, laevis, atrobrunnea lato et obtusa ad apicem, contracto in hilo angusti ad basim, 12.5-23 μm longa, 9-15 μm lat., a crassiframedian septo-transversaliter divisio in a parte grandis apicalis, muriformis, 9-15 μm diam., ad deminutis cellulae-lumini, cum a parte parvis, abconis, laevis et crassitunicatus, 0-1-septatis oblique vel transversaliter, curvatus parte basim 5-8 μm diam.

Holotypus in conidiophora emortuis *Helminthosporium velutinum* in foliis emortuis *Calamus* sp., Kodachadri Hills, Karnataka State, India, D.J. Bhat, 30-12-1989, GUMH 423.

Colonies effuse, dark brown, powdery, growing on conidiophores of *Helminthosporium velutinum* Link ex Schubert. Mycelium superficial, composed of septate, branched, hyaline to subhyaline; 1-2.5 μm wide, prostrate hyphae. Conidiophores basauxic, mononematous, erect, flexuous, narrow, hyaline to subhyaline, minutely dentate on the walls, unbranched, upto 15 μm long, 1-2.5 μm wide, arising from cylindrical, doliiform to ampulliform conidiophore mother cell 2.5-5 x 1.5-2 μm . Conidiogenous cells integrated, cylindrical, monoblastic, elongating at the base. Conidia solitary, dry, pyriform to turbinate, basally curved, smooth, dark brown, broad and obtuse at the tip, tapering into a narrow hilum at the base, 12.5-23 μm long, 9-15 μm wide, divided by a submedian, thick, transverse septum into a large, apical, muriform portion 9-15 μm diam., with reduced cellumen, and a small obconic, smooth and thick-walled, 0-1-transversely or obliquely septate, often curved, basal portion 5-8 μm diam.

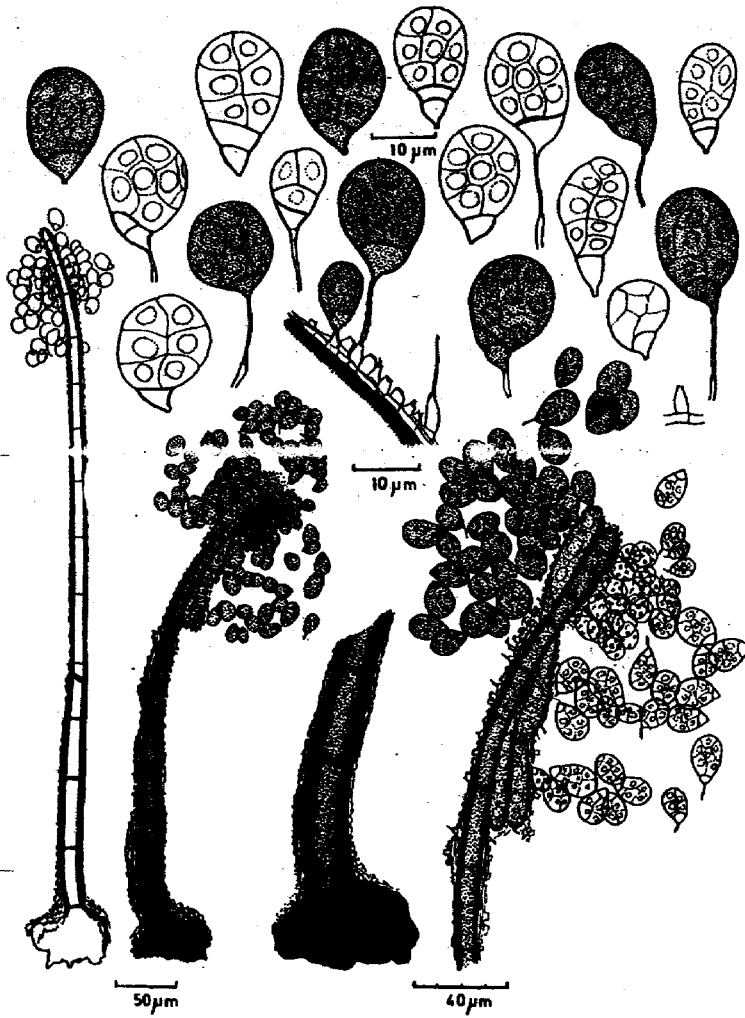


Fig. 2. *Spegazzinia subramanianii* sp. nov.: conidiophores and conidia. Note the hyperparasitic growth of the fungus on conidiophores of *Helminthosporium velutinum*.

The taxonomic significance of basauxic nature of growth of conidiophores in hyphomycetous fungi was first observed and adapted by Hughes (1953). The basauxic conidiophore is now typical of at least six anamorph genera, viz., *Spegazzinia* Sacc., *Arthrinium* Kunze, *Cordella* Speg., *Pteroniconium* Sacc., *Dictyoarthrinium* Hughes, *Endocalyx* Berk. et Br. and *Catenospegazzinia* Subramanian. While describing two interesting and new hyphomycetes with basauxic conidiophores from Western Australia, Subramanian (1991) reviewed the status of all these six genera and provided a taxonomic key in addition to brief notes on their ecology and distribution.

Spegazzinia subramanianii is a hyperparasite on conidiophores of *Helminthosporium velutinum* found growing on dead leaves of *Calamus*. It produces solitary, muriform, pyriform to turbinate, smooth and dark conidia on simple, basauxic conidiophores with unthickened septa which are typical of the genus *Spegazzinia*. Further, the conidia of *S. subramanianii* are divided by a submedian transverse septum delimiting an upper, large

and muriform portion with cells having reduced cell-lumen and a lower, thick-walled, curved 0-1-septate, obconic portion. None of the so far described species of *Spegazzinia* (Ellis, 1971, 1976) possess these characters.

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