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SPEIROPSIS ROGERGOOSENSIS SP. NOV. FROM INDIA

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ABSTRACT

A new dematiaceous hyphomycete, *Speiropsis rogergoosensis*, producing unicellular conidia connected by narrow isthmi in profusely branched chains on polyblastic discrete conidiogenous cells, recovered from decaying leaves of *Artocarpus hirsutus* Lam. (Moraceae) is described from the forests of Western Ghats in southern India.

Key words: Biodiversity, Taxonomy, Hyphomycetes, Western Ghats

INTRODUCTION

During studies on the taxonomy and diversity of microfungi of the forests of Western Ghats in southern India, an interesting dematiaceous hyphomycete producing hyaline, smooth, unicellular conidia connected by narrow isthmi in profusely branched chains on polyblastic discrete conidiogenous cells and long, thick-walled, dark brown, septate, conidiophores arising singly or in fascicles was isolated from fallen and decaying leaves of *Artocarpus hirsutus* Lam. (Moraceae) from the forests of Western Ghats in Karnataka State, India. The fungus is described here as a new species of the genus *Speiropsis* Tubaki.

Fallen, dead leaves of *Artocarpus hirsutus*, when incubated in sterile moist chamber in the laboratory, produced fascicles of conidiophores with white masses of conidia appearing on the leaf surface after two weeks.

TAXONOMIC PART

Speiropsis rogergoosensis Kesh. Prasad et Bhat sp. nov. (Fig. 1 & 2)
[Etym.: In honour of Prof. Roger D. Goos, a distinguished mycologist, who contributed immensely to the study of biodiversity of hyphomycetous fungi]

Coloniae effusae, olivaceae vel atrobrunneae. *Mycelium* partim immersum, ex hyphis septatis, ramosis, hyalinis vel pallide brunneis, 2.5-3.0 μm lat. compositum. *Conidiophora* mononematosa, erecta, recta vel flexuosa, singularis vel fasciculata ex 2-6. enata fuscus stroma, 2-3-septata, crassitunicata, atro-brunnea, ad apicem pallidiora, laevia, 40-65 μm longa, 3-4.5 μm lat. et proferens ad ramosa in supra, hyalina, 15-30 μm longa, 2-4.5 μm lat. *Cellulae conidiogenae* polyblasticae, discretiae, terminalis, hyalina, denticulatae ad apicem, 6-9 μm longae, supra 2.5-4 μm lat., infra 2-3 μm lat.

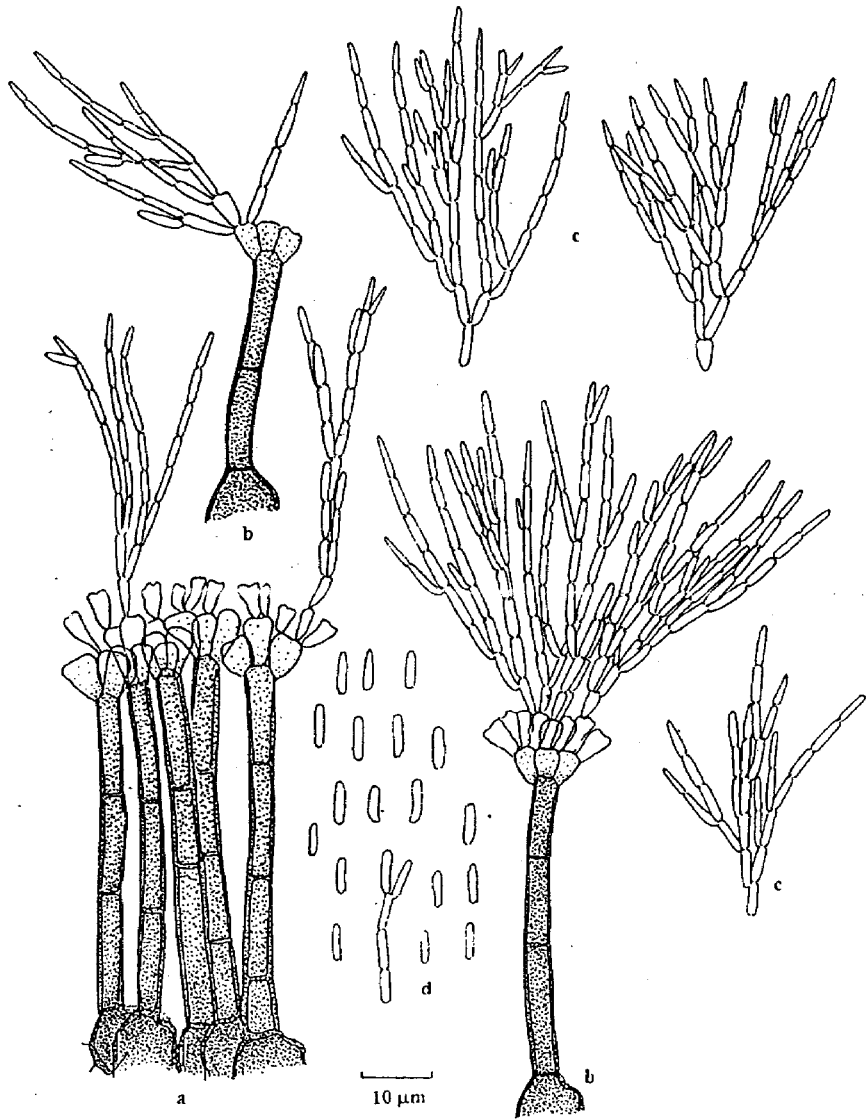


Fig. 1. *Spetropsis rogergoosensis*: a. Fasciculate conidiomata, b. Single conidiophore with fertile lateral branches, c. Conidia in branched chains, d. Conidia.

Conidiae catenata, hyalina, cylindricalis, interdum curvata, utrinque truncata, laevia, aseptata, 4-6 x 1-2 μm , plerumque in multiramosa, infra uniseriata et supra bi- ad heptaseriata, 40-65 μm longa; cellulae apicale et basalem, conicale vel obclavatae, 3-7 x 1-1.5 μm .

HOLOTYPE, In foliis putrescentibus *Artocarpus hirsutus*, Kumara Parvatha, Subrahmanya, Karnataka, India, 11 Sept. 2001, Keshava Prasad, Herb. No. IMI 387092.

Terrestrial litter hyphomycete. *Coloñies* effuse, olivaceous brown, velvety. *Mycelium* partly immersed, composed of septate, and branched, colourless to pale brown hyphae 2.5-3 μm wide. *Conidiophores* mononematous, erect, straight or flexuous, arising singly or in fascicles of 2-6 from a dark brown stroma, 2-3 septate, thick-walled, smooth, dark brown, paler towards the tip, 40-65 μm long, 3-4.5 μm wide, with an apical cluster of 3-5 conidiogenous cells. *Conidiogenous cells* polyblastic, discrete, terminal, hyaline, wider above, smooth, thin-walled, with denticulate projections at the truncate apex, 6-9 μm long, 2.5-4 μm wide above, 2-3 μm wide below, sometimes in two tiers. *Conidia* catenate, hyaline, cylindrical, sometimes curved, truncate at both ends, smooth, aseptate, 4-6 x 1-2 μm , connected by narrow isthmi, in mass whitish, developing in branched chains of 40-65 μm long, uniseriate below, bi- to hepta-seriate above, with branches arising from basal up to penultimate terminal cell of the axis; apical and basal conidia conical to obclavate, 3-7 x 1-1.5 μm .

So far 8 species have been described in the genus *Speiropsis* Tubaki (1958), typified by *S. pedatospora* Tubaki. The genus is characterised by simple conidia connected by narrow isthmi developing in unbranched or branched chains on mononematous conidiophores with discrete, polyblastic conidiogenous cells. In *Speiropsis aquatica* Aramb., Cabello & Megascini (Arambari & al., 1987), *Speiropsis belauensis* Matsush. (Matsushima, 1985), *S. ixorae* Subram. & Sudha (Subramarian & Sudha, 1986), *S. scopiformis* Kuthub. & Nawawi (Kuthubutheen & Nawawi, 1987) and *S. simplex* Matsush. (Matsushima, 1971) conidia are produced in unbranched chains whereas in *S. hyalospora* Subram. & Lodha (Subramarian & Lodha, 1964), *S. irregularis* R.H. Petersen (1963) and *S. pedatospora* conidia are in branched chains. The new species, *Speiropsis rogergoosensis*, has catenate conidia developed in divergent branched chains.

In *S. irregularis*, the conidia are subspherical, pale to mid-brown, 4.4-7.0 x 5.5-12.5 μm and the branching is irregular and divergent. In *S. pedatospora*, the conidia are cylindrical to cuneiform, pale to mid-brown, 10-14 x 4-7 μm and branching is more or less regular and divergent. In *S. hyalospora*, conidia are hyaline, 8-10 x 3.5-5 μm , developing in triseriate chains with first and second branches originating from distal end of basal and epibasal cells of the main axis. In *S. rogergoosensis*, the cylindrical hyaline conidia are straight or curved and developed in profusely and dichotomously branched chains. The branching is visible even in the terminal cell of the chain. The conidia are 4-6 x 1-2 μm , the smallest of all so far known species in the genus.

The key to the species of *Speiropsis* proposed by Kuthubutheen & Nawawi (1987) is updated below incorporating the later described taxa.

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|---------------------------------|---|
| 1. Conidia in branched chains | 2 |
| 1. Conidia in unbranched chains | 5 |

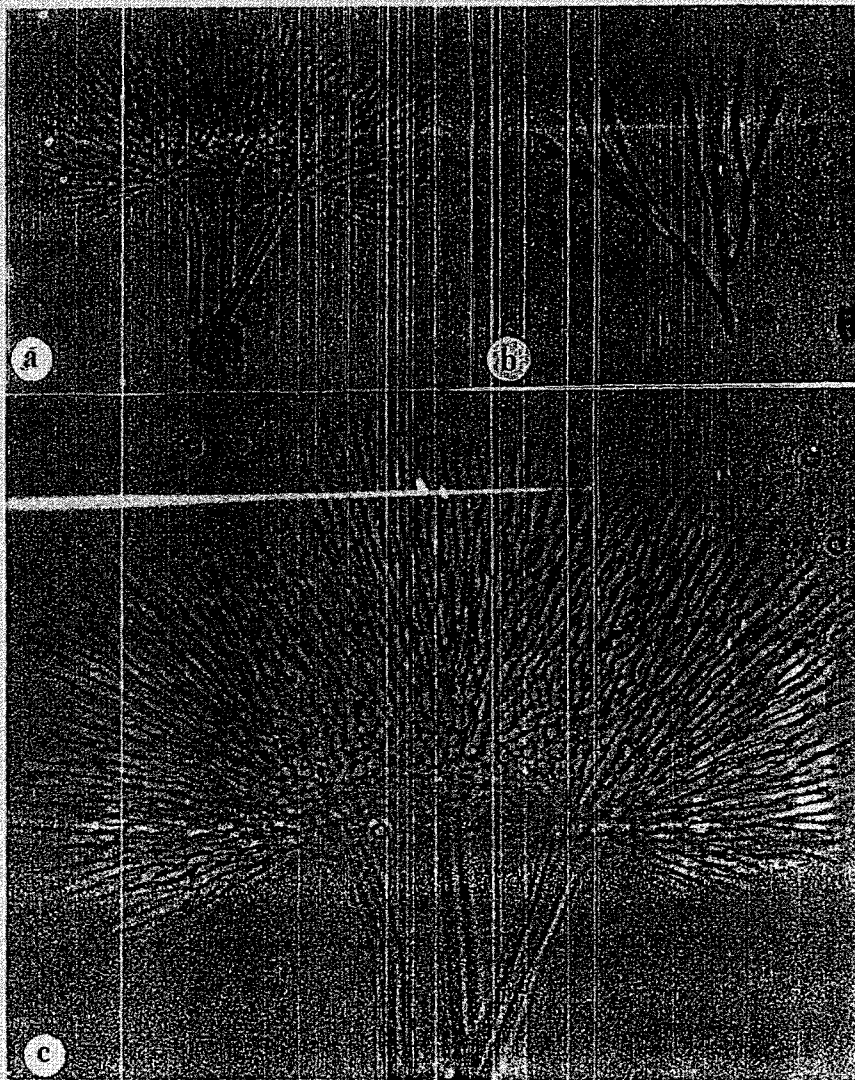


Fig. 2. *Spetropsis rogergoensis*: a. Fasciculate conidiomata, b. Conidia in branched chains, c. Fertile portions of conidiophores

| | |
|---|--------------------------|
| 2. Branching regular | 3 |
| 2. Branching irregular, 3-7 divergent branches; conidia subspherical, 4.4-7.0 x 5.5-2.5 μm | <i>S. irregularis</i> |
| 3. Conidia pale to mid brown, 10-14 x 4-7 μm | <i>S. pedatospora</i> |
| 3. Conidia hyaline | 4 |
| 4. Conidial chains tri-seriate, conidia 8-10 x 3.5-5 μm | <i>S. hyalospora</i> |
| 4. Conidial chains with many divergent branches; conidia narrow cylindrical, 4-6 x 1-2 μm | <i>S. rogergoosensis</i> |
| 5. Conidiophores branched, mostly aggregated in fascicles or appearing synnematosus to sporodochial | 6 |
| 5. Conidiophores unbranched and solitary | 7 |
| 6. Conidia 7-9 cells, conidial chains 80-110 x 4-5 μm | <i>S. simplex</i> |
| 6. Conidia 5-7 cells, conidial chains 40-60 x 4-5 μm | <i>S. belauensis</i> |
| 7. Conidiophores 75-110 x 4-5 μm , conidial chains 5-7 cells, 40-65 x 2-3 μm | <i>S. scopiformis</i> |
| 7. Conidiophores 45-52.5 x 5-5.5 μm ; conidial chains 5-6 cells, 33.5-46.5 x 2.8-3.3 μm | <i>S. ixorae</i> |
| 7. Conidiophores 75-120 x 3-5 μm ; conidial chains 6-7 cells, 40-50 x 2.6-3 μm | <i>S. aquatica</i> |

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