

***Clathroconium*, a new helicosporous hyphomycete genus from spiders**

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Clathroconium arachnicola gen. and sp. nov. is described from a spider, collected on a cocoa leaf in Ghana. The fungus is characterized by yellow–brown, solitary, clathroid conidia.

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Clathroconium arachnicola gen. et spec. nov. est décrit. Ce nouveau champignon fut récolté sur une araignée trouvée sur une feuille de cacao au Ghana. Il est caractérisé par des conidies clathroïdes solitaires et brun jaune.

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Introduction

During an investigation of the entomogenous mycoflora of Ghana, an interesting helicosporous hyphomycete was collected on a spider. The new genus *Clathroconium* is proposed to accommodate the species.

Description

Clathroconium Samson & Evans, gen. nov.

ETYMOLOGY: Named from the clathroid conidial form.

Hyphomycetes, Moniliales, helicosporas pertinens. Mycelium hyalinum, septatum. Conidiophora micronematosa, mononematosa, ramosa, hyalina, levia. Cellulae conidiogenae monoblasticae ad polyblasticae, integratae, terminales vel intercalares, denticulatae; denticuli lati, breves, cylindrici. Conidia singula, sicca, clathroidea, flavobrunnea; e filamentis verruculosus multiseptatis composita. Habitat in araneis. Teleomorphosis ignota.

SPECIES TYPICA: *Clathroconium arachnicola* Samson & Evans.

Hyphomycetes, Moniliales, Helicosporae. Mycelium hyaline, septate. Conidiophores micronematous, mononematous, branched, hyaline, smooth walled. Conidiogenous cells monoblastic or polyblastic, integrated, terminal and intercalary, denticulate; denticles broad, short, cylindrical. Conidia solitary, dry, clathroid,

yellow–brown; filaments rough walled, multiseptate. Araneogenous. Teleomorph unknown.

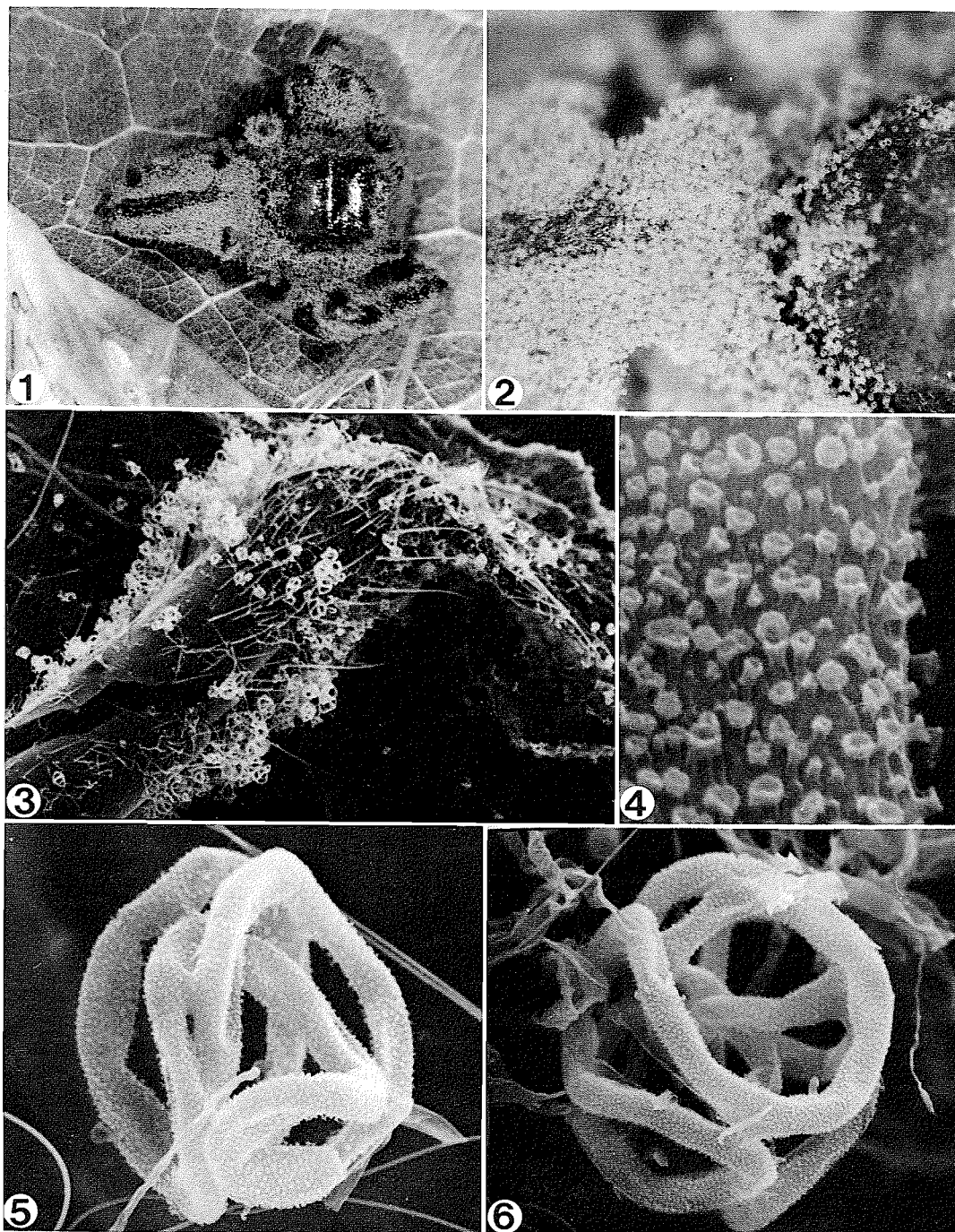
TYPE SPECIES: *Clathroconium arachnicola* sp. nov.

Clathroconium arachnicola Samson & Evans, sp. nov. (Figs. 1–7)

Mycelium hospitem araneam omnino obtegens, tenue, album; strato denso conidiorum flavobrunneorum pulverulentorum obtectae. Hyphae hyalinae, leves, ramosae, septatae, 2.5–5.0 μm latae. Conidiophora micronematosa, mononematosa, ramosa, hyalina, levia. Cellulae conidiogenae monoblasticae vel polyblasticae, integratae, terminales vel intercalares, cylindricae, 20–30 \times 2.5–4.5 μm , denticulatae; denticuli breves, cylindrici, 1.5–3.0 \times 1.5–2.0 μm , cicatricem latam relinquentes. Conidia singula, sicca, clathroidea, globosa vel ellipsoidea, e filamentis in tres and quattuor laqueos apicaliter et tangentialiter anastomosante constantia; filamentum flavobrunneum, verrucosum, multiseptatum, 2.5–4.5 μm latum.

HOLOTYPE: R.S. 143, in aranea quadam in folio Theobromae lectus, prope Tafo in Ghana, 11 October 1972 (CBS praeservatus).

Mycelium entirely covering spider host, thin, white, covered with a dense layer of yellow–brown conidia, imparting a powdery appearance. Hyphae hyaline, smooth walled, branched, septate, 2.5–5.0 μm wide. Conidiophores micronematous, mononematous,



FIGS. 1–6. *Clathroconium arachnicola*. Fig. 1. Holotype showing spider on leaf covered by the powdery layer of conidia. $\times 7$. Fig. 2. Conidia. $\times 22.5$. Figs. 3–6. Scanning electron micrographs of air-dried specimen. Fig. 3. Spider leg with mycelium and conidia. $\times 50$. Fig. 4. Warty ornamentation of conidia. $\times 16\,000$. Figs. 5, 6. Conidia. Fig. 5. $\times 1900$; Fig. 6. $\times 1400$.

branched, hyaline, smooth walled. Conidiogenous cells monoblastic or polyblastic, integrated, terminal or intercalary, cylindrical, $20\text{--}30 \times 2.5\text{--}4.5 \mu\text{m}$, denticulate. Denticles short, cylindrical, $1.5\text{--}3.0 \times 1.5\text{--}2.0 \mu\text{m}$, with a broad scar. Conidia solitary, dry,

clathroid, globose to ellipsoidal, consisting of filamental elements forming a hollow network, with irregular pattern, but usually three or four loops anastomosing terminally or tangentially, $24\text{--}50 \mu\text{m}$ diam.; filaments yellow-brown, rough walled (in scanning electron

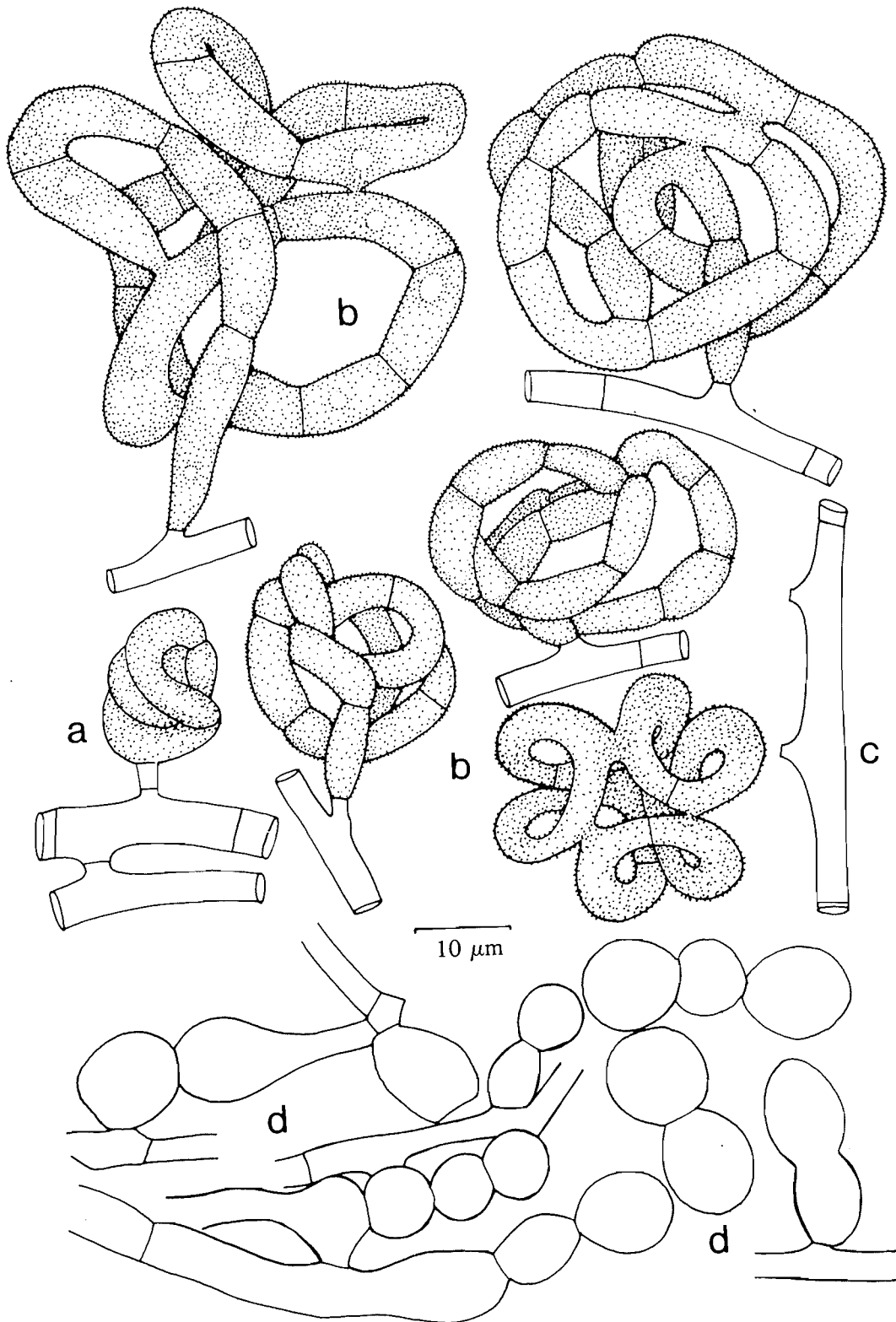


FIG. 7. *Clathroconium arachnicola*. Camera-lucida drawings. (a) Immature conidium; (b) conidia; (c) polyblastic conidiogenous cell; (d) mycelium and catenulate "resting" spores in spider host.

micrographs of air-dried specimen showing wartlike protuberances (Fig. 4)), multiseptate, 2.5–4.5 μm wide.

The host is completely filled by hyaline mycelium, 2–7 μm wide, and by thin-walled, catenulate, globose or elongated resting spores, 6–12 μm diam. (Fig. 7a).

HOLOTYPE: R.S. 143. On spider on cocoa leaf, Tafo, Ghana, collected by H. C. Evans, 11 October 1972. (CBS); slide of the holotype deposited in IMI.

Several efforts were made to isolate the fungus from the fresh specimen but, although the conidia were observed to germinate by producing lateral hyphae from the filaments, the fungus failed to establish on agar. It seems likely that specific host metabolites are required for growth on artificial media as suggested for other araneogenous fungi (Samson and Evans 1973).

The new genus can be compared with two other helicosporous genera producing clathroid conidia: *Clathrosphaerina* van Beverwijk (1951) and *Spirosphaera* van Beverwijk (1953). Both genera are aero-aquatic and are known in pure culture. In the genus *Clathrosphaerina*, the conidia are borne on short coni-

diophores which are usually simple branches on the mycelium. The smooth-walled conidia are produced by repeated forking and joining of the fork tips. In *Spirosphaera*, the conidia are similarly formed on short conidiophores which are poorly differentiated, erect hyphae (Hennebert 1968). The conidia consist of globose balls of filaments in densely interwoven spirals.

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