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THREE NEW FUNGI FROM SURINAM SOIL

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Eleutherascus cristatus Van Emden, **spec. nov.**
Coloniae in agaro avenaceo 3 diebus 40 mm diametro, primum hyalinae deinde ascosporis maturantibus griseae.

Coloniae in culturis juvenibus omnino submersae, in culturis veteribus paulum mycelium aerium gossypinum albidum formant. Asci in agaro submersi, e hyphis binis contortis oriuntur, nudi, hyphis involventibus absentibus, normaliter binati, tenuitunicati, persistentes, globosi, 25–30 μm diametro, normaliter 8-spori, raro 4-spori.

Ascosporae primum hyalinae, deinde brunneae, globosae vel oblatae 8–9 × 7–8 μm, cristis aequatorialibus interdum convexis laevimarginatis 3 μm latis praeditae, spinis grossis basi 1 μm latis 1,5 μm longis obtectae.

Status imperfectus absens.

Habitat in terra "latosol," sub vegetatione Elaeidis guineensis, Brokobaka in Surinama. Typus CBS 609.74 vivus et exsiccatus in Centraal Bureau voor Schimmelcultures, Baarn preservatus.

Colonies in oatmeal agar in three days attaining a diameter of 40 mm at 20 °C, initially hyaline, becoming light grey as ascospores mature. Mycelium in young cultures entirely submerged; in old cultures a little white, cottony aerial mycelium produced. Ascomatal initials are coiled branches 3–5 μm wide, often originating from the same parent hypha. Asci naked, without differentiated surrounding hyphae, submerged in the agar, usually occurring in pairs, thin walled, persistent, hyaline, globose, 25–30 μm in diameter, normally containing 8 ascospores, sometimes 4, rarely fewer. Ascospores initially hyaline, later brown, globose to slightly oblate, provided with an equatorial or somewhat lateral, occasionally convex crest, coarsely spinulose, measuring 8–9 × 7–8 μm without spines or crest. Crest smooth edged, 3 μm wide. Spines 1 μm wide at the base and 1.5 μm long.

No conidial state observed.

E. cristatus is the 3rd species to be described in the genus *Eleutherascus* which was proposed by VON ARX in 1971 to accomodate *Arachniotus lectardii* Nicot. A second species *E. tuberculatus* SAMSON & LUITEN was found in 1974.

E. cristatus differs from the spp. described earlier by the presence of a crest on the ascospores. These are, moreover, smaller than those of *E. lectardii* and of *E. tuberculatus*, measuring only 8–9 × 7–8 μm as compared with 10–13 and 10–12.5 μm respectively.

Dictyosporium alatum Van Emden, **spec. nov.**
Coloniae in agaro maltoso aetate trium hebdomadum 32–35 mm diametro, in medio lanatae, submurinae, steriles, margine lata, glabra, olivaceo-bubalina,

sporodochiis viridi-nigris maculata circumdatae. Mycelium e hyphis hyalinis vel subhyalinis, levibus 2–3 μm latis compositum. Conidia brunnea (22) 26–32 × 15–25 μm, normaliter complanata, vulgo e 26–32 (37) cellulis, in 4–5 (7) seriebus ordinatis constant, in sporodochiis vel singula oriunda. Cellulae apicales serierum externarum appendice hyalina, tenuitunicata, circa 20–25 × 5 μm praeditae. In conidiis veteribus appendices interdum inflatae et crystallos continentes.

Habitat in terra "latosol", sub vegetatione Elaeidis guineensis, Brokobaka in Surinama. Typus CBS 578.73 vivus et exsiccatus in Centraal Bureau voor Schimmelcultures, Baarn preservatus.

Colonies on malt agar attaining 32–35 mm diameter in three weeks, consisting of a light mouse grey, woolly, sterile area and a surrounding glabrous area, olivaceous buff and speckled with greenish black sporodochia. Mycelium made up of hyaline or sub hyaline, smooth hyphae, 2–3 μm wide. Conidia borne singly on short conidiogenous cells, mainly in sporodochia, but also along creeping hyphae and becoming detached easily by rupture of the conidiogenous cell, normally flattened, chiroid in face view, cylindrical in side view, consisting of 26–32 (37) cells arranged in 4–5 (7) rows of 6–7 elements each lying in one plane, brown, (22) 26–32 × 15–25 μm. The apical cells of the outer rows provided with a hyaline, thin walled, allantoid appendix at first 20–25 × 5 μm later becoming considerably swollen and then containing crystalline material.

On account of the conidial habit the fungus is to be compared with *D. elegans* Corda and with *D. zeylanicum* Petch. From both species mentioned it differs by the presence of the conidial appendages; from the former also by its much smaller conidia with fewer cells.

Phialophora geniculata Van Emden. **spec. nov.**

Coloniae aetate duarum hebdomadum 10–12 mm diametro, fusco-nigrae, fertilissimae. Mycelium aerium fere deficiens. Mycelium submersum e hyphis levibus, hyalinis, ca 1 μm crassis compositum. Conidiophora simplicia vel ramosa, pigmentata, usque ad 80 μm alta, septata, crassitunicata, levia. Cellulae conidiogenae phialides, sympodialiter proliferantes, geniculatae, ad proliferationes irregulariter dilatatae. Apices phialidum ca. 1 μm lati, collaribus patelliformibus 1.5–2 μm latis praediti. Conidia continua, oblonga, utrinque obtusa, levia, dilute pigmentata, hilum fuscum praebentia, 4–5 × 2–2.5 μm, capitulis mucidis connexa.

Habitat in terra "latosol", sub vegetatione Elaeidis guineensis, Brokobaka in Surinama. Typus CBS 562.73 vivus et exsiccatus in Centraal Bureau voor Schimmelcultures, Baarn preservatus.

Colonies on malt agar attaining 10–12 mm diameter in two weeks at 20 °C, fuscous black, densely sporulating with virtually no aerial mycelium. Aerial part of colony consisting of a tangled mass of conidiophores covered with droplets of conidia in slime. Mycelium hyaline or subhyaline, smooth, c. 1 μm wide. Conidiophores simple or branched, irregularly septate, thick walled, pigmented, smooth. Conidiogenous cells phialides, proliferating sympodially, geniculate, irregularly widened at the proliferations. The sporulating orifices about 1 μm wide, provided with a flaring collarette 1.5–2 μm wide. Conidia 1-celled, oblong with obtuse ends, lightly pigmented with a darker hilum, smooth, 4–5 × 2–2.5 μm, collecting in slime.

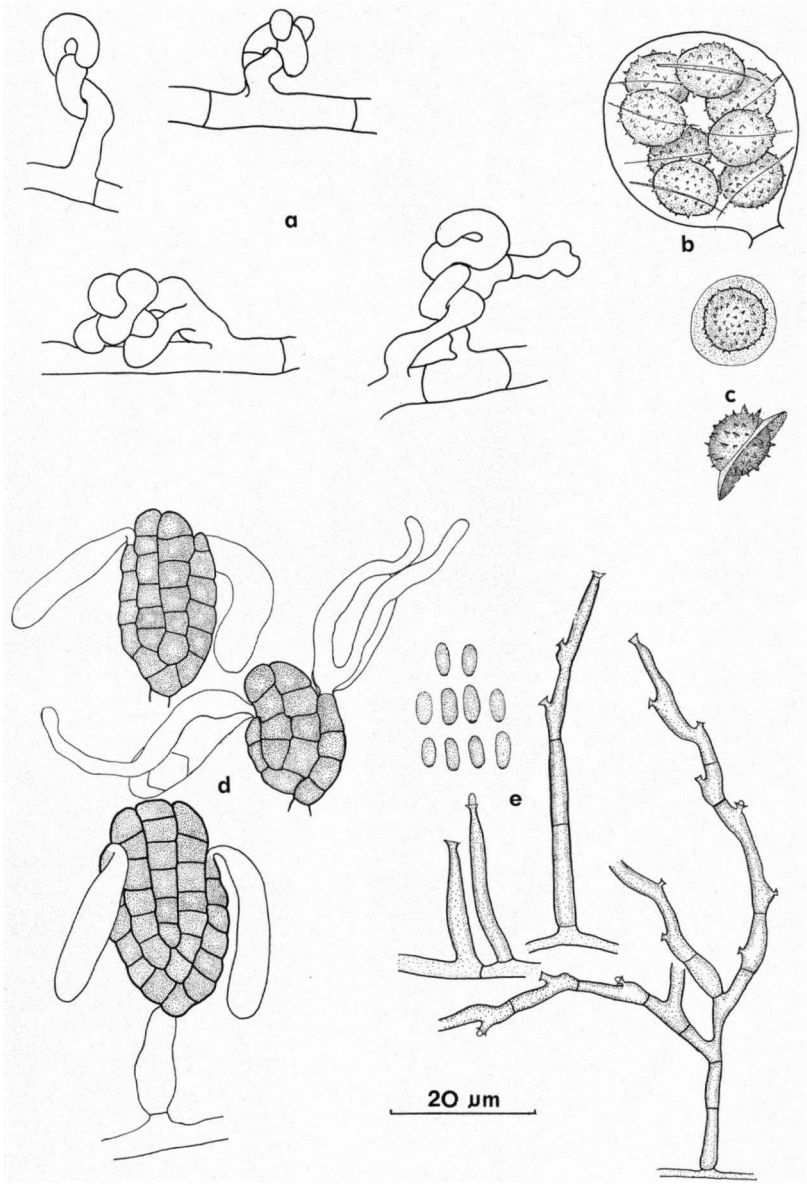

Fig. 1. a, b, c, *Eleutherascus cristatus*, a, ascomatal initials; b, young ascus with ascospores; c, mature ascospores.
d, *Dictyosporium alatum*, conidia, one of which germinating.
e, *Phialophora geniculata*, conidiophores and conidia.

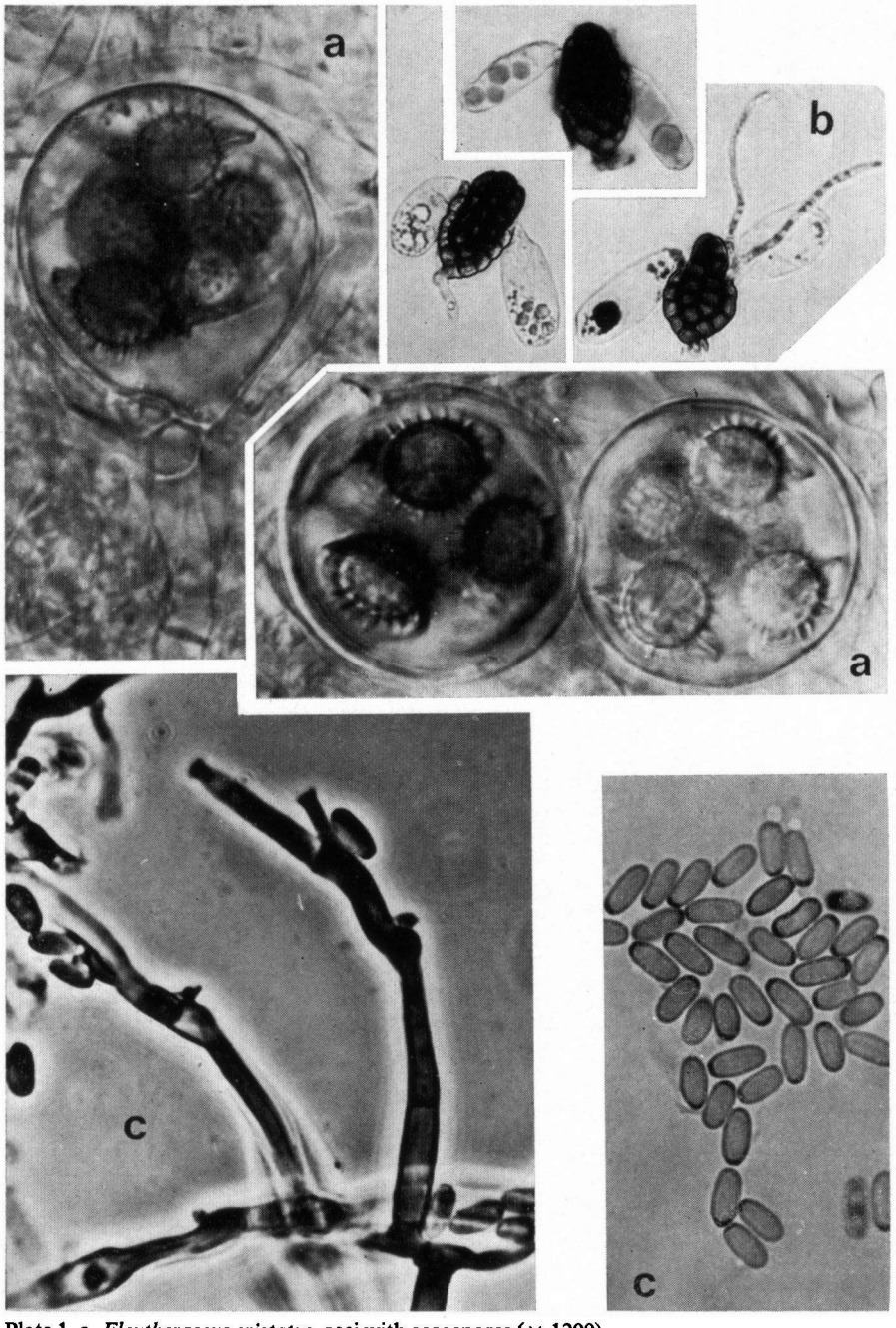

Plate 1. a, *Eleutherascus cristatus*, asci with ascospores (× 1200)
(photograph J. A. von Arx)
b, *Dictyosporium alatum*, conidia (× 600)
c, *Phialophora geniculata*, conidiophores and conidia (× 1500)

The conidiophores resemble those of *Phialogeniculata* Matsushima and those of *Codinea* Maire, but the conidia are different from those of the species of both genera by their lack of septation and of appendices. The fungus seems to be best classified in *Phialophora* Medlar, in which genus it shows affinity with *P. richardsiae* (Nannf.) Conant where sympodial proliferation is also known to occur (SCHOL-SCHWARZ 1970). *P. geniculata* differs from *P. richardsiae* by its uniform oblong conidia with obtuse ends, by the virtual absence of aerial mycelium and its slow rate of growth.

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