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SOME NEW HYPHOMYCETES

G. S. DE HOOG and VASANT RAO*

Centraalbureau voor Schimmelcultures, Baarn

(With three Text-figures)

Three new Hyphomycetes are described: *Acrodontium intermissum* from Norway, *Beauveria vermiconia* from Chile, and *Periconia pseudolateralis* from India.

Acrodontium intermissum de Hoog & Rao, *sp. nov.*—Fig. 1

Coloniae in agaro farina avenacea addita 20 °C post 8 dies 1 mm diam. attingentes, post 20 dies et diutius maxime 4 mm diam., velutinae, depressae, dilute cinnamomeae, reverso dilute roseo-bubalino. Exsudatum et odor absunt. Hyphae submersae hyalinae, leves et tenuitunicatae, 1.5–2.5 μm crassae. Hyphae aeriae ochraceae, leves et modice crassitunicatae, adscendentes, diametro semper circa 2 μm, frequenter plagiotropice irregulariter verticillatae. Cellulae conidiogenae ochraceae, modice crassitunicatae, e parte basilari cylindrica, 40–60 μm longa, modice inflata ad 1.5–2.5 μm, sursum attenuata, et rachide conidiifera subhyalina, fere tenuitunicata, saepe plus quam 30 μm longa et 1.0–1.5 μm crassa, irregulariter nodosa constant; nodi denticulis conidiiferis haud numerosis, conspicuis, breviter cylindricis obtecti, 3–6 μm distantes. Conidia hyalina, levia et tenuitunicata, ellipsoidea vel oblonga, basi rotundata, 3.5–5 × 2–3 μm. Chlamydosporae absunt.

Typus: CBS 644.74, isolatus a K. Venn e terra prope Ås in Norvegia.

Colonies on oatmeal agar at 20 °C attaining a diameter of 1 mm in 8 days, reaching its maximum of 4 mm within three weeks, velvety, less than 1 mm high, pale cinnamon, reverse pale pinkish buff. Exudate and odour absent. *Submerged hyphae* hyaline, smooth- and thin-walled, 1.5–2.5 μm wide. *Aerial hyphae* ochraceous, smooth- and slightly thick-walled, ascendent, of uniform width throughout about 2 μm, without main stalk, with strong, plagiotropic, irregularly verticillate branching. *Conidiogenous cells* ochraceous, slightly thick-walled, consisting of a cylindrical basal part, 40–60 μm long, somewhat swollen near the base up to 1.5–2.5 μm, tapering very slightly towards the tip, and a subhyaline, rather thin-walled, irregularly nodose conidiiferous rachis, often exceeding 30 μm in length, 1–1.5 μm wide; nodes with a small number of conspicuous, short cylindrical conidium-bearing denticles, at intervals of 3–6 μm. *Conidia* hyaline, smooth- and thin-walled, ellipsoidal to oblong, rounded at the base, 3.5–5 × 2–3 μm. No chlamydospores observed. *Perfect state* unknown.

MATERIAL EXAMINED.—CBS 644.74, type culture, isolated by K. Venn from soil, Ås, Norway, February 1973.

* Present address: Department of Botany, Vivek Vardhini College, Hyderabad, A.P., India.

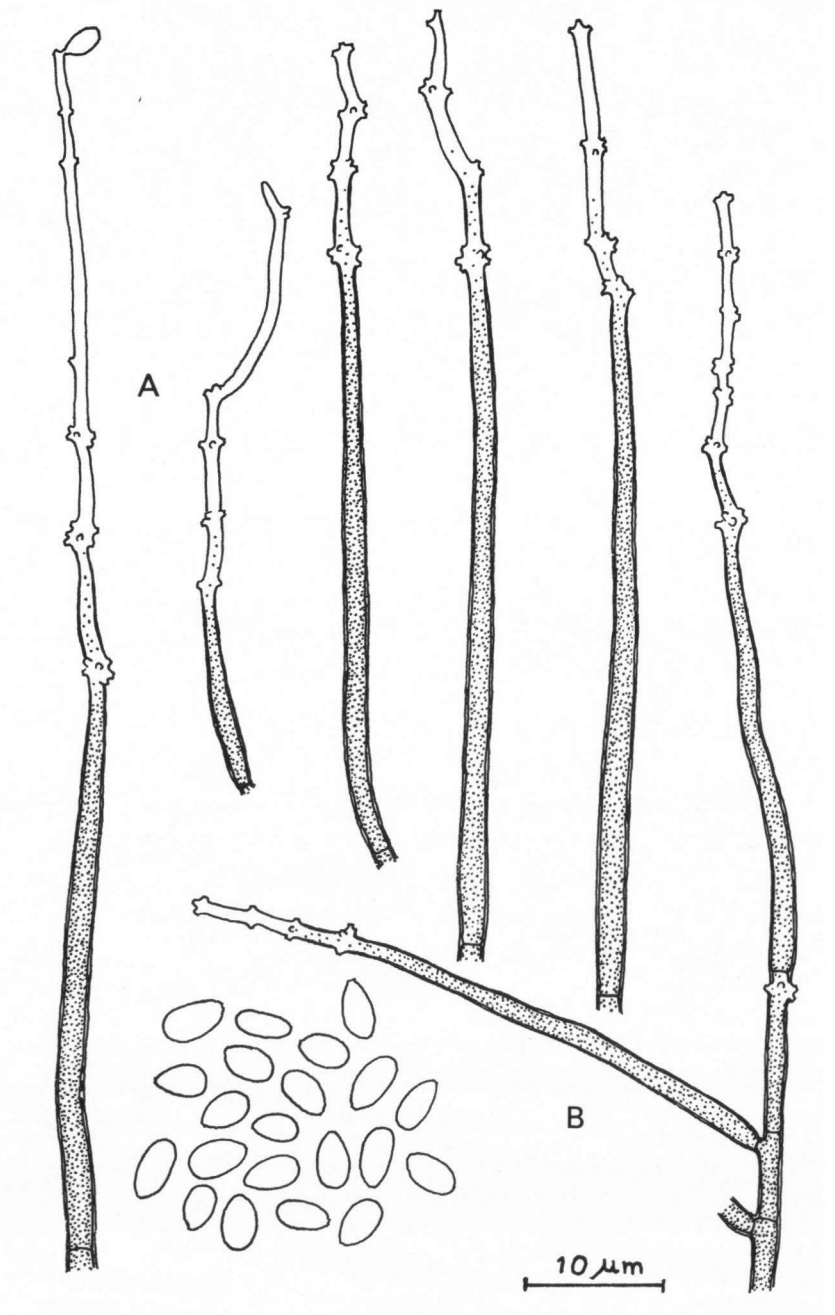

Fig. 1. *Acrodontium intermissum.* — a. Conidiogenous cells. — b. Conidia.

The present species is classified in *Acrodontium* (section *Griseum* de Hoog, 1972) because of its pigmented, slightly tapering conidiogenous cells which are constant in shape and size, and have denticulate rachids and ellipsoidal to oblong conidia. The last mentioned characters are sometimes also found in *Nodulisporium cylindroconium* de Hoog (1973), which is distinct in strictly cylindrical conidiogenous cells with equally wide rachids and flat, not prominent conidial scars. Some species of *Tritirachium* Limber are also reminiscent of *Acrodontium intermissum*, but can be distinguished by regularly flexuose conidiiferous rachids, on which the conidial scars are traced with difficulty under the light microscope. *Sporothrix* Hektoen & Perkins ex Nicot & Mariat differs e.g. by hyaline, thin-walled conidiogenous cells (although the mycelium may be dull brown or olivaceous), and spreading or smooth colonies.

Beauveria vermiconia de Hoog & Rao, *sp. nov.*—Fig. 2

Coloniae in agaro farina avenacea addita 20 °C post 8 dies 20 mm diam. attingentes, pulverulentae vel velutinae, lanuginosae ad marginem, ad 1 mm altae, modice zonatae, deinde

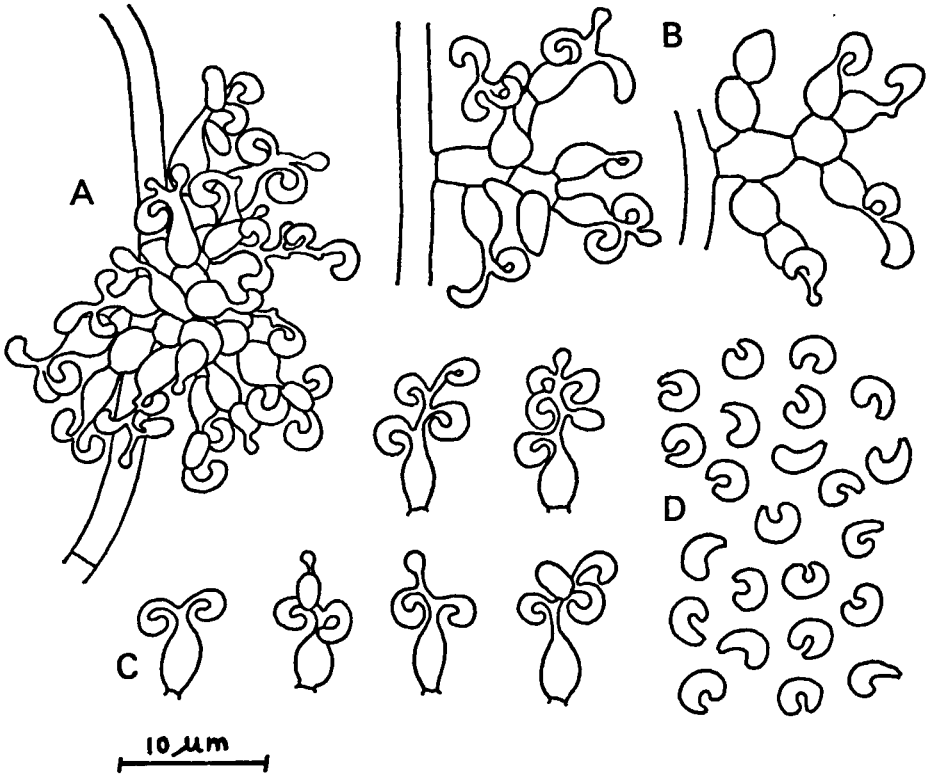

Fig. 2. *Beauveria vermiconia.* — a. Conidial apparatus. — b. Fertile branches. — c. Conidiogenous cells. — d. Conidia.

in medio dilute citrinae. Reversum primum hyalinum, deinde partim dilute roseum. Exsudatum et odor absunt. Hyphae hyalinae, leves et tenuitunicatae, 1.5–3.5 μm crassae, repentes vel adscendentes, frequenter plus minusve dichotome ramosae. Structurae conidiogenae dense aggregatae e cellulis lateralibus inflatis, plerumque 5–6 × 3–4 μm constant quae acervos cellularum secundariarum vel conidiogenarum proferunt. Cellulae conidiogenae e basi ellipsoidea vel lageniformi, plerumque 4–5 × 2–2.5 μm, et rachide tenui, ad 12 μm longa et semper 0.7–1.0 μm crassa, flexuosa, denticulis conidiiferis minutis obtecta constant; conidia sero secedunt. Conidia levia et tenuitunicata, commaeformia vel falcata, diam. arcus 2.5–3.5 μm, radius segmenti 1.0–1.5 μm. Chlamydosporae absunt.

Typus: CBS 645.74 isolatus a J. Grinbergs e cinere vulcanica, prope Valdiviam Chilensem.

Colonies on oatmeal agar at 20 °C attaining a diameter of 20 mm in 8 days, appearing powdery to velvety, lanose near the margin, up to 1 mm high, slightly zonate, white, becoming pale citron yellow in the centre. Reverse at first uncoloured, soon locally pale pinkish. Exudate and odour absent. *Hyphae* hyaline, smooth- and thin-walled, 1.5–3.5 μm wide, creeping or ascendent, with strong, often more or less dichotomous branching. Conidial apparatus tightly clustered, consisting of groups of swollen lateral cells, mostly 5–6 × 3–4 μm, which by further branching give rise to smaller swollen cells or several conidiogenous cells in the first or second order. *Conidiogenous cells* consisting of an ellipsoidal to flask-shaped basal part, usually 4–5 × 2–2.5 μm, and a slender, up to 12 μm long and rather constantly 0.7–1 μm wide, flexuose rachis, on the edges provided with small conidium-bearing denticles; conidia remaining attached to the rachis for a long period. *Conidia* smooth- and thin-walled, comma- or sickle-shaped, 1–1.5 μm in face view, diameter in side view about 2.5 μm. No chlamydospores observed. *Perfect state* unknown.

MATERIAL EXAMINED.—CBS 849.73 and 645.74 (type culture), isolated by J. Grinbergs from volcanic ash, Valdivia, Chile.

Beauveria vermiconia is closely related to *B. bassiana* (Bals.) Vuill., but can be easily recognized by its comma-shaped conidia. It is also reminiscent of *Isaria amorpha* Höhnel (=*I. orthopterorum* Petch; de Hoog, 1972), but the species of *Isaria* (sensu v. Arx, 1970; de Hoog, 1972) are distinguished by the presence of synnemata, and by conidiogenous cells with small groups of conidium-bearing denticles, only rarely extending into a short flexuose rachis.

Periconia pseudolateralis de Hoog & Rao, *sp. nov.*—Fig. 3

Coloniae in substrato naturali effusae, atrobrunneae. Mycelium in hospite submersum, e hyphis crassitunicatis, subhyalinis vel fuscis, 3–7 μm crassis, cellulis 2–5 μm longis, dense intricatis, stromatoideis constat. Stipites solitarii vel acervati, erecti, nonnumquam curvati, 2–5-septati, simplices, raro ramulos fertiles singularum vel ternarum cellularum proferentes, leves vel verrucosi, crassitunicati, atrobrunnei, sursum pallidiores, 160–350 μm longi, ad basim 10–20 μm crassi, sursum ad 2–5 μm attenuati. Cellulae conidiogenae spirales e parte superiore stipitis oriuntur, singulae vel seriatae, ovoideae, globosae vel subglobosae vel forma variabiles, leves vel verrucosae, crassitunicatae, 5–7 μm longae, 8–11 μm crassae; cellulae conidiogenae et conidia saepe vix distinguenda. Conidia sicca, continua, in catenulis acropetalibus simplicibus vel ramosis disposita, deorsum maturantia, crassitunicata, spinis ad 1 μm longis obtecta, dilute vel fusce pigmentata, globosa vel subglobosa, 6–9 μm diam.

Typus: Herb. CBS 118, in bambusoidea putrescente, prope Srisailem, Andhra Pradesh, India, Sept. 1971.

Colonies on the natural substrate effused, blackish brown. *Mycelium* submerged in the host tissue, composed of thick-walled, subhyaline to dark brown, 3–7 μm wide hyphae, septate every 2–5 μm, tightly interwoven, forming stroma-like bodies. *Stipes* solitary or in groups, erect, occasionally curved, 2–5-septate, simple, rarely with short fertile branches of 1–3 cells, smooth or verrucose, thick-walled, blackish brown, slightly paler towards the apex, 150–350 μm long, 10–20 μm wide at the base, and 2–5 μm wide at the apex. *Conidiogenous cells* spirally arranged on the stipe in the upper two-third of the length, singly or in short series, ovoidal, globose, subglobose or irregular, smooth or verrucose, thick-walled, 5–7 μm long, 8–11 μm wide; often conidiogenous cells and conidia are not markedly different. *Conidia* dry, 1-celled, arising in acropetal, single or branched chains, maturing from apex backwards, thick-walled, spiny (spines up to 1 μm long), dark yellowish brown, globose or subglobose, 6–9 μm in diameter.

MATERIAL EXAMINED.—Herb. CBS no. 118, on decaying bamboo, Srisailem, Andhra Pradesh, India, September 1971, *Rao*.

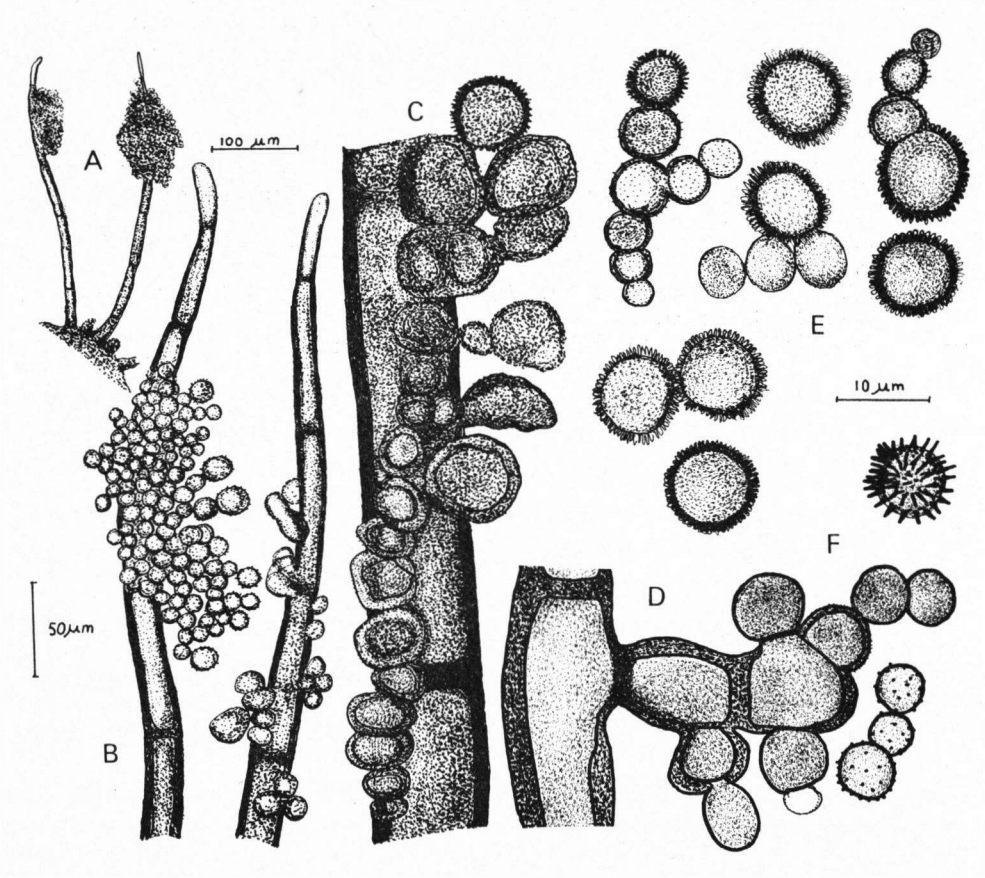

Fig. 3. *Periconia pseudolateralis*. — a. Stipes on the natural substrate. — b. Apical region of stipes. — c. Arrangement of conidiogenous cells. — d. Fertile branch. — e. Conidia in various stages of development. — f. Conidium, focussed on spines.

This species is very similar to *Periconia lateralis* Ellis & Everh. (1886; Ellis, 1971), hitherto the only known species with unilateral conidiophores having a sterile apex. In the type specimen of the latter (IMI 52,615) and other collections kept in the CMI the conidiogenous cells are intermixed with sterile branches, and the conidia are verrucose to echinulate. In *P. pseudolateralis* sterile branches are absent, the basal conidiogenous cells are arranged in more regular spiral rows and the ornamentation of the conidia is much more conspicuous.

Acknowledgements

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