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MYRIODONTIUM KERATINOPHILUM, GEN. ET SP. NOV.

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(With 2 Text-figures)

The hyphomycete *Myriodontium keratinophilum, gen. et sp. nov.*, is described and illustrated. It was isolated from soil and a preputial swab of a bull. The new taxon is characterized by fertile hyphae consisting of intercalary polyblastic conidiogenous cells and one-celled conidia borne on long denticles. Its relationship to other hyphomycetous genera with solitary blastic conidia is discussed.

In the course of an investigation of the soil mycoflora in Italy a number of fungi were isolated and screened for their antibiotic and antiviral properties. During this work two isolates of an hitherto undescribed hyphomycete were encountered.

Myriodontium Samson & Polonelli, *gen. nov.*

Coloniae albae, floccosae, pulverulentae. Mycelium ramosum, hyalinum, septatum, leve. Hyphae fertiles aeriae, procumbentes, hyalinae, ramosae, leves. Cellulae conidiogenae polyblasticae, integratae, intercalares vel terminales, determinatae, plus minusve cylindricae, undique dense denticulatae; denticuli longi, cylindrici. Conidia solitaria, sicca, continua, hyalina, dacryoidea. Teleomorphosis ignota.
Species typica: *Myriodontium keratinophilum* Samson & Polonelli.

Colonies white, floccose, powdery. Mycelium branched, hyaline, septate, smooth-walled. Fertile aerial hyphae procumbent, hyaline, branched, smooth-walled. Conidiogenous cells polyblastic, integrated, intercalary or terminal, determinate, more or less cylindrical, densely denticulate all over surface; denticles long, cylindrical. Conidia solitary, more or less synchronously formed, dry, one-celled, hyaline dacryoid. Teleomorph not known.
Type species: *Myriodontium keratinophilum* Samson & Polonelli

Myriodontium keratinophilum Samson & Polonelli, *sp. nov.*—Fig. 1

Coloniae in agaro YpSs dicto modice rapide crescunt, post 14 dies 25 °C 6 cm diam. in strato basilari dense coactae, mycelio aerio floccoso albo obtecta, saepe pulvinis mycelialibus sterilibus zonatae. Reversum album; odor abest. Hyphae vegetativae hyalinae, leves, ramosae,

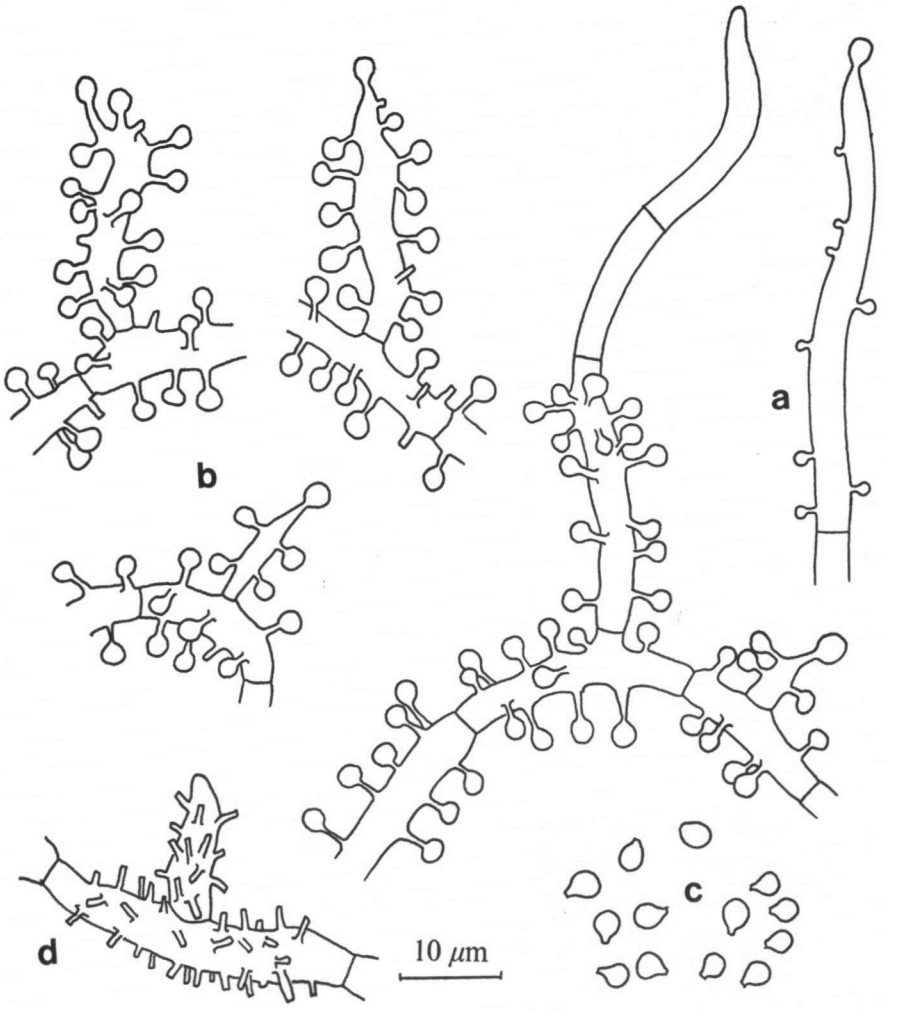

Fig. 1. *Myriodontium keratinophilum.* — a. Young conidial structure. — b. Polyblastic conidiogenous cells with solitary conidia. — c. Conidia. — d. Conidiogenous cells showing long cylindrical denticles after secession of conidia.

septatae, 2.6–6 μm latae; hyphae fertiles similes, ad 4 μm latae. Cellulae conidiogenae polyblasticae, intercalares vel terminales, plus minusve cylindricae, 10–30 × 2.5–5 μm, denticuli undique radiantes, cylindrici, 1.5–3 × 0.5–1.0 μm. Conidia solitaria, plus minusve simul oriunda, sicca, continua, subglobosa ad dacryoidea, hyalina, levia, 2–3 μm diam.

Typus: *CBS 947.73*, isolatus e terra in Horto botanico, Romae in Italia, Junio 1973.

Colonies on YpSs agar growing moderately rapidly, attaining a diameter of 6 cm within 14 days at 25 °C, consisting of a white basal felt, obscured by white, floccose, aerial mycelium, often strongly zonated by white sterile mycelial cushions alter-

nating with sporulating structures, appearing mostly in localized areas. Reverse uncoloured; odour absent. Vegetative hyphae hyaline, smooth-walled, branched, septate, 2.5–6 μm wide. Fertile hyphae hyaline, branched, smooth-walled, 2.5–4 μm wide. Conidiogenous cells polyblastic, integrated, intercalary or terminal, determinate, more or less cylindrical, 10–30 × 2.5–5 μm, denticulate; denticles all over surface, long, cylindrical, 1.5–3 × 0.5–1 μm. Conidia solitary, more or less synchronously formed, dry, subglobose to dacryoid, hyaline, one-celled, smooth-walled, 2–3 μm in diameter.

Colonies on hay-infusion agar growing slowly, attaining a diameter of 5 cm within 14 days at 25 °C, consisting of a thin basal felt with many white mycelial cushions and sporulating structures, usually arranged in a zonated pattern and intermixed with a few aerial hyphae.

Growth on oatmeal agar is similar, but with abundant aerial mycelium and a less zonated pattern.

The fungus grows and sporulates abundantly on hairs. Sporulation on sterilized hairs above Czapek or plain agar occurs after one to two weeks. The hyphae do not penetrate the cortex and growth remains restricted between the scales of the cuticle.

MATERIAL EXAMINED.—*CBS 947.73* (=type culture) and *CBS 948.73*, both isolated from two different soil samples, collected at the Botanical Garden in Rome, Italy, in June 1973. The strains were isolated after inoculation of a soil suspension on Litman's Oxgall agar. — *CBS 949.73*, isolated by Dr. Brigitte Gedek (Munich, FRG) from a preputial swab of a bull. — *IMI 160292* (herbarium specimen), as *Sporothrix* species, isolated from soil, California (USA) by G. F. Orr.

On the basis of the polyblastic conidiogenous cells and the one-celled conidia, *Myriodontium* can be compared with *Trichosporiella* Kamyschko ex W. Gams & Domsch, *Emmonsia* Cif. & Montem., *Myceliophthora* Cost., *Chromelosporium* Corda, *Pulchromyces* Hennebert, *Beniowskia* Rac. and *Ustalaginoidea* Brefeld.

The monotypic genus *Trichosporiella* (type species: *T. cerebriformis* (De Vries & Kleine-Natrop) W. Gams) is distinguished by very slow growing, butyrous colonies with thin, hyaline mycelium growing submerged in the agar. Each conidiogenous cell produces one to few almost sessile conidia, which are borne on short denticles (De Vries & Kleine-Natrop, 1957; Gams & Domsch, 1969; von Arx, 1971). Conidiogenesis in the genera *Emmonsia* and *Myceliophthora* is similar but conidia can also be produced from ampulliform swellings and often form acropetal chains (Van Oorschot, 1977). Colonies are mostly floccose. Conidial structures similar to those in *Trichosporiella* and *Emmonsia* are found in the ascomycete genera *Podosordaria* and *Poronia* (Jong & Rogers, 1969; Morgan-Jones & Hashmi, 1973; Stiers & al., 1973; Furuya & Udagawa, 1977).

Species of the genera *Chromelosporium* and *Pulchromyces* (Hennebert, 1973; Pfister & al., 1974) resemble *Myriodontium*, but have distinct erect, branched conidiophores and broader hyphae. In *Chromelosporium* the conidia are blown out from the conidiogenous cells without denticles.

The genus *Beniowskia* was described by Raciborski (1900) and based on *B. graminis* Rac., a sporodochial fungus growing on leaves of *Panicum nepalense*. On the type specimen (in herb. ZT) no fungal material could be found. Two other species of *Beniowskia*, *B. sphaeroidea* (Kalchbr. & Cooke) Mason and *B. penniseti* Wakef. however, fit Raciborski's generic description and can be regarded as typical representatives.

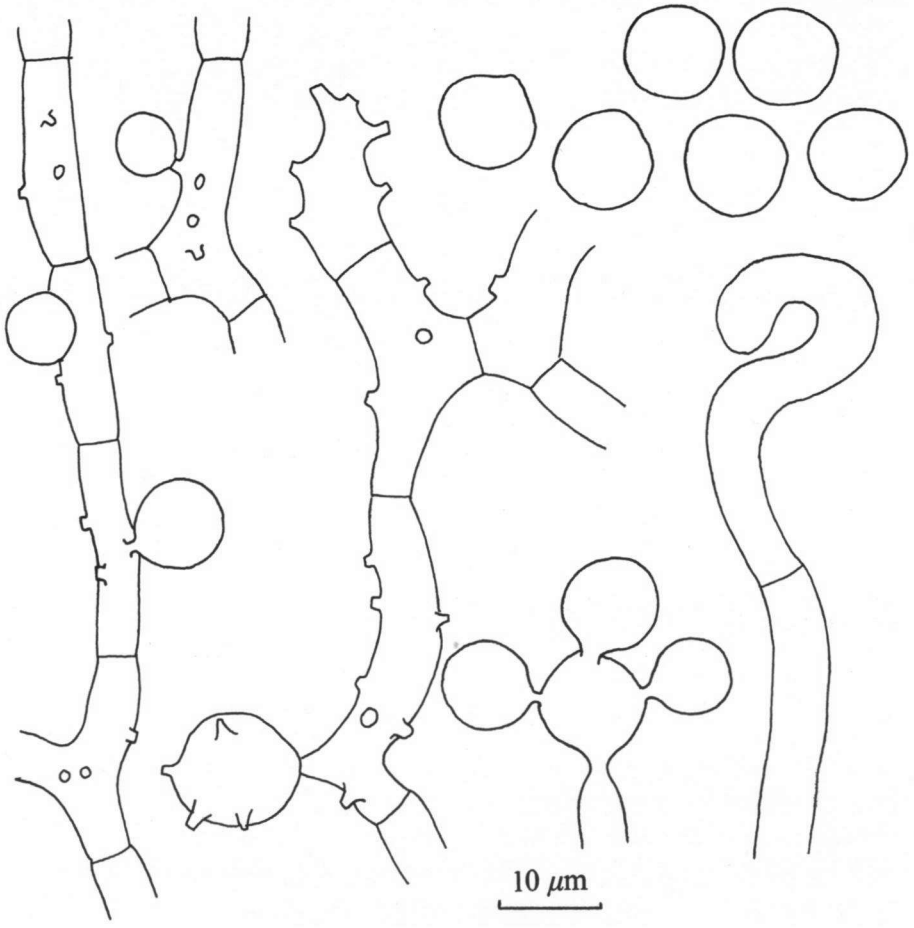

Fig. 2. *Beniowskia sphaeroidea*, conidiogenous structures (Figure drawn from specimens collected by H. Sydow – Fungi Aequatoriense – on *Pennisetum bambusiforme* (Fourn.) Hemsch. and *Lasiacis sorghoidea* (Desv.) Hitch et Chas. in herb. ZT).

In *B. sphaeroidea* (fig. 2) the sporodochia consist of 5–7 µm wide hyphae with conidiogenous cells bearing short denticles. Conidia may also be produced from ampulliform swellings. *B. macrosporus* M. D. Mehrotra (1964) has been cultured on agar media. In the type strain (*CBS 757.74*) good growth and sporulation could be observed. The conidiogenous structures, however, mainly consist of polyblastic proliferating cells, giving rise to acropetal chains of conidia. The formation of solitary conidia from polyblastic, shortly denticulate, cylindrical conidiogenous cells, probably occurs only on the natural substrate.

The species of *Beniowskia* are very similar to those of *Ustilaginoidea* (type species:

U. virens (Cooke) Takahashi). The fructifications also occur on grasses but mostly only on the ovaries of invidual grains which are transformed into large, very dark, olive-green or sometimes orange, velvety masses (Ellis, 1971).

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