BRUNNEOSPORA RETICULATA, GEN. ET SPEC. NOV. A KERATINOPHILIC ASCOMYCETE FROM SPAIN

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Two strains of a gymnoascaceous keratinophilic fungus growing on hair have been encountered during the routine screening of soil fungi in Catalonia (Spain), using the hair bait method. Examination of these strains indicated that they differ from previously described genera of the Eurotiales or Onygenales and apparently represent a new genus. It is described below.

BRUNNEOSPORA Guarro & Punsola, *gen. nov.*

Ascomata rubro-brunnea, globosa, ad peripherum appendicibus spiralibus praedita, discreta vel confluentia, elementa ascomata componentia eis hypharum vegetarum similis, laxe intertexta et ascos circundata; asci globosi vel ellipsoidei, evanescentes, octospori; ascosporae irregulariter ellipticae, rubro-brunneae, reticulatae, crassitunicatae. Status asexualis in forma aleuriosporarum. Species typica: *Brunneospora reticulata.*

Ascomata reddish brown, more or less globose, with coiled appendages at the periphery, solitary or confluent. Peridial elements similar to those of the vegetative hyphae, loosely interlaced to enclose the asci. Asci globose or ellipsoidal, evanescent, 8-spored. Ascospores irregularly elliptical, thick-walled, reticulate, reddish brown.

Type species.—*Brunneospora reticulata.*

Brunneospora reticulata Guarro & Punsola, *spec. nov.*

Ascomata rubro-brunnea, 400–600 μm; asci 8–12 μm diam.; ascosporae, irregulariter ellipticae, crassitunicatae, reticulatae, 6.3–7.2 × 4.6–6.1 μm, rubro-brunneae. Conidia terminalia et alteralia, sessilia vel in protrusionibus brevibus vel ramulis lateralibus oriunda, hyalina, tenui-tunicata, obovoidea vel clavata, 4–8(–10) × 2.5–4 μm, conidia intercalaria solitaria. Ceratinophilica. Typus ex solo in herb. FMR* e cultura FMR 784.

Ascomata reddish-brown, more or less globose, 400–600 μm diam., often confluent; peridial hyphae scanty to absent, smooth, septate, 2–4 μm wide, hyaline, anastomosed or intertwined, loosely reticulate, peripheral appendages coiled, septate, subhyaline to pale brown, 3.5–4.5 μm diam. Asci globose or ellipsoidal, 8–12 μm diam., evanescent, 8-spored, ascospores irregularly elliptical, with rounded ends, roundish in polar view, reddish brown, thick-walled, aseptate, reticulate, 6.3–7.2 × 4.6–6.1 μm, often covered with mucilaginous material which masks the reticle.

Keratinophilic.

Anamorph represented by terminal, intercalarly and lateral conidia, sessile or on short protrusions or branches, usually solitary, hyaline, smooth, obovoid to clavate with a broad and truncate base with long frills after secession, 4–8(–10) × 2.5–4 μm, thin-walled, aseptate or occasionally 1-septate, intercalarly conidia hyaline, inequilaterally swollen or cylindrical.

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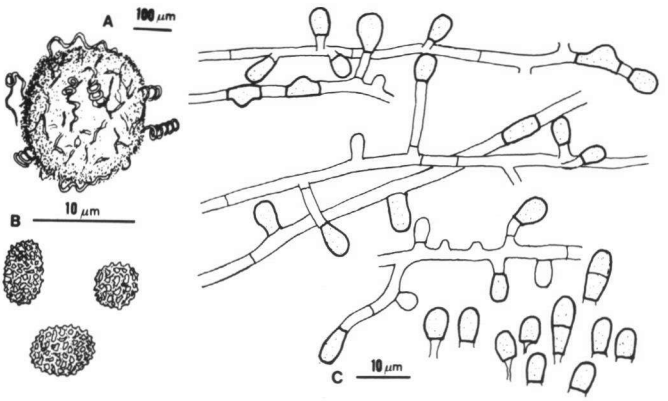

Fig. 1. *Brunneospora reticulata*. — A. Ascomata. — B. Ascospores. — C. *Chrysosporium* anamorph.

Material examined.—FMR 784 (type strain) isolated from arable soil by L. Punsola, Segrià, Catalonia, Spain, Sept. 1980. FMR 811, from the same kind of soil, Baix Ebre, Catalonia, Spain, Aug. 1980. Dried material of the type has been deposited at the IMI herbarium.

In artificial culture it is very difficult to obtain the teleomorph, and we only had some success using oatmeal agar mixed with human hair and small pieces of cow hoof, in that case a lot of ascomata immersed in an abundant aerial, white mycelium are obtained, although these ascomata lack coiled appendages.

The *Chrysosporium* anamorph grows well on Phytone-yeast extract agar (PYE) with colonies attaining 30–35 mm diam. in 14 days, mostly white or pale yellow, rather dense, slightly raised at the centre, margin defined, reverse pale creamy yellow. On potato-dextrose agar (PDA) the colonies are similar reaching 30–33 mm diam. in 14 days, white, powdery; margin defined, regular, slightly fimbriate, reverse pale brown.

Distinguishing characters of *Brunneospora* are the ellipsoidal, pigmented ascospores with a thick, reticulate-alveolate wall. Such ascospores occur also in *Aphanoascus* Zukal which includes species with spherical ascomata with a distinct, dark peridium composed of flattened cells. Spirally coiled appendages are absent. The ascospores are usually ovate or oblate, bilaterally flattened. Those of *Brunneospora reticulata* are round in polar view. Currah (1985) classified *Aphanoascus* in the Onygenaceae. The species of *Onygena* Pers. also have ellipsoidal, but pale and nearly smooth ascospores. Currah classified in the Onygenaceae also genera with dorsiventrally flattened (lenticular or discoid) or with spherical ascospores, which formerly had been classified in the Gymnoascaceae. Von Arx (1986) on the other hand restricted the Onygenaceae to taxa with elongate, ellipsoidal, fusiform, or cylindrical ascospores. Currah included the genera *Myxotrichum* Kunze, *Pseudogymnoascus* Raillo, and *Byssoascus* v. Arx, characterized by ellipsoidal or fusiform ascospores in a new family Myxotrichaceae. All species of these genera have

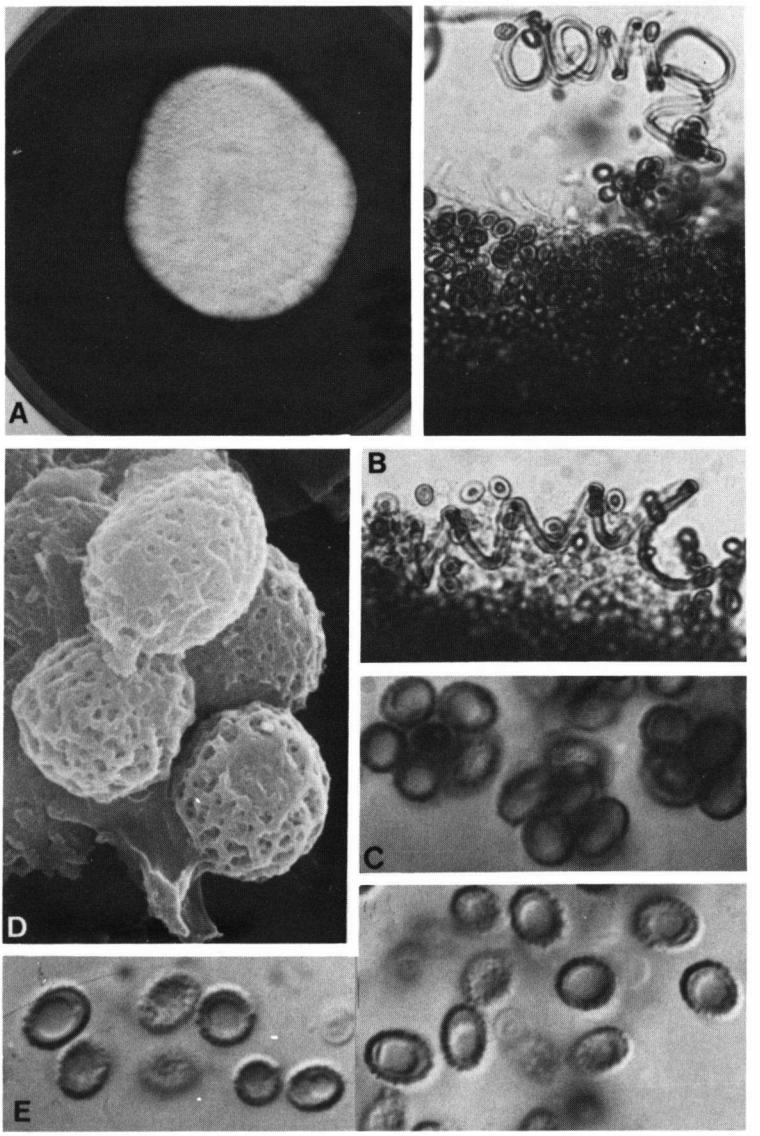

Fig. 2. *Brunneospora reticulata*. — A. Colonial morphology of the anamorph after 14 days on PYE, ×0.9. — B. Coiled appendages of the ascomata, ×512. — C. Asci, ×1600. — D. Ascospores (scanning electron micrograph), ×6000. — E. Ascospores (interference contrast optics), ×1600.

hyaline or pale, smooth, striate or longitudinally furrowed ascospores. Another genus with elongate, often slightly inequilateral, hyaline ascospores is *Renispora* Sigler & Carmichael. Currah classified this genus in the Onygenaceae, because the ascospores of its type are finely pitted when studied with SEM and because it is keratinophilic.

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