

P E R S O O N I A

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**THIELAVIA AEGYPTIACA, A NEW THERMOTOLERANT ASCOMYCETE
FROM EGYPTIAN SOILS**

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Thielavia aegyptiaca spec. nov., isolated from cultivated soil in Egypt, is described and illustrated. It is characterized by dark, fusiform, bi-apiculate ascospores, with single, subapical, conspicuous germ-pores. Its optimum growth is between 30°C and 40°C.

During a survey of the fungal flora of cultivated soils in Ismailia-Governorate, Egypt, an interesting species of *Thielavia*, with brown colonies and dark-pigmented ascomata, was isolated. It proved sufficiently different from other known species (Mouchacca, 1973; von Arx, 1975; Davidson, 1976; Moustafa, 1976) to warrant its description as a new taxon. A short comparison with morphologically similar species is included.

***Thielavia aegyptiaca* Moustafa & A. Wahid, spec. nov.—Figs. 1, 2**

Coloniae fere lente crescunt, optime 30°C. Mycelium aeriame hyphis fuscis, 4–6 µm latis, constat. Ascumata dispersa, superficialia, levia, globosa, nonostiolata, 250–350 µm diam., pariete diaphano, 4–6 µm crasso e 2–3 stratis cellularum applanatarum, dilute brunnearum, 3–7 µm latorum composito circumdata. Asci globosi vel ellipsoidei, octospori, 22–28 × 16–22 µm, evanescentes. Ascosporae fusiformes, fuscae, 13–14 × 8–10 µm, poro subapicali conspicuo praeditae. Chlamydosporae globosae vel ovoideae vel clavatae, 5–9 × 3–5 µm, singulae, laterales vel terminales in mycelio aereo.

Typus vivus et exsiccatus IMI 327073, isolatus e culta terra Ismailia in Aegypto.

Colonies on oatmeal agar grow moderately, attaining a diameter of 5 cm in seven days at 30°C, with 'Greyish-Sepia' to 'Fuscous-Black' colour (Rayner, 1970). Aerial mycelium composed of branched, septate, smooth, brown hyphae, 4–6 µm wide. Ascumata dispersed, superficial, smooth, spherical to obovate, non-ostiolate, (120–)250–350(–450) µm in diameter, with a translucent wall, 4–7 µm thick, composed of 2–3 layers, of flattened, light brown, 3–7 µm wide cells (textura epidermoidea). Asci globose, subglobose to ellipsoidal, 8-spored, 24–28 × 16–22 µm, evanescent when mature. Ascospores fusiform, dark brown, bi-apiculate, 13–14 × 8–10 µm, with single, very conspicuous, subapical germ pore of 1.0–1.5 µm wide. Chlamydospores abundant in the aerial mycelium, globose, ovate to clavate, single, lateral to terminal, subhyaline, 5–9 × 3–5 µm.

Thielavia aegyptiaca is a thermotolerant fungus, growing well in a wide range of temperatures up to 45°C; its optimum, however, lies between 30°C and 37°C. Growth and sporulation was best on oatmeal and on potato-carrot agar. Colonies on potato-dextrose and malt extract agars remained sterile.

Two species of the genus *Thielavia*, namely *T. arenaria* and *T. subthermophila*, are most

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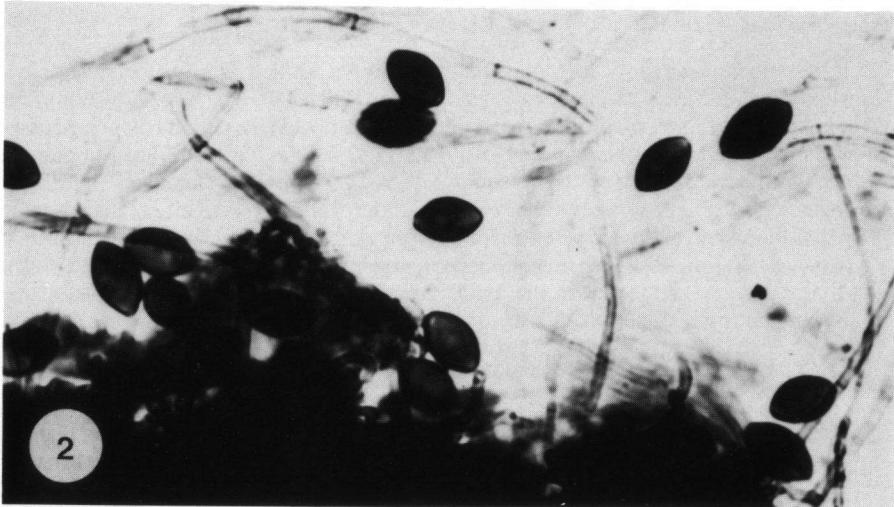
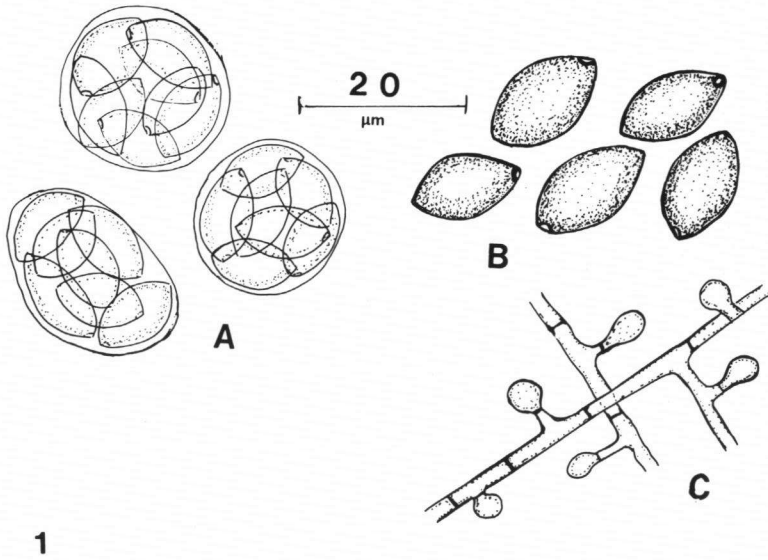


Fig. 1. *Thielavia aegyptiaca*. — A. Asci. — B. Ascospores. — C. Chlamydospores.
 Fig. 2. *Thielavia aegyptiaca*, magnified ascospores (light microscopy, $\times 1300$).

probably the nearest to *T. aegyptiaca* as both are thermotolerant, producing dark-coloured mycelium, pigmented chlamydospores, and brown ascospores, with quite distinct, subapical germ-pores. The ascospore dimension, however, differs markedly in these three species. *Thielavia aegyptiaca*, with ascospores of $13-14 \times 8-10 \mu\text{m}$, occupies an intermediate position between *T. arenaria* ($8-12 \times 5-6.5 \mu\text{m}$) and *T. subthermophila* ($14-19 \times 8-10 \mu\text{m}$).

It has to be mentioned here that within the genus *Thielavia*, there is a group of recognizable species characterized by dark-pigmented colonies with black reverse, elongated, obovate to ellipsoid, 8-spored asci; fusiform to ellipsoid, dark brown ascospores, with single, subapical germ-pores. The anamorph is always present and represented by clavate to spherical chlamydospores, borne directly on the hyphae or on short branches. This group comprises, in addition to the new taxon, the following species: *T. arenaria* Mouchacca, *T. subthermophila* Mouchacca, and *T. microspora* Mouchacca. These species differ only in ascospore size and position of germ-pores which are typically subapical in all, except *T. microspora*. It is worth mentioning that these four species are isolated from subtropical, arid to semi-arid soils in Egypt and all possess thermophilic potentiality. These common features seem to suggest, at least, an infrageneric taxon within the genus.

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