PERSOONIA
Published by the Rijksherbarium, Leiden
Volume 9, Part 4, pp. 501–504 (1978)

A NEW SPECIES OF TALAROMYCES AND A DISCUSSION OF SOME RECENTLY DESCRIBED TAXA

R. A. SAMSON

Centraalbureau voor Schimmelcultures, Baarn

H. M. ABDEL-FATTAH

Botany Department, Assiut University, Assiut, Egypt

(with one Text-figure)

A new species of *Talaromyces* C. R. Benjamin, *T. assiutensis*, is described and illustrated. It was isolated from Egyptian soil amended with crushed buffalo hooves and incubated for five months at 35 °C. *T. assiutensis* is characterized by white to pale yellow ascomata, small, smooth-walled to finely roughened ascospores and short biverticillate conidiophores. The taxa of *Talaromyces* published after 1972 are briefly discussed.

Among some strains sent to the Centraalbureau voor Schimmelcultures for identification, an hitherto undescribed taxon of *Talaromyces* C. R. Benjamin was encountered. The following new species is proposed to accomodate it.

Talaromyces assiutensis Samson & Abdel-Fattah, *sp. nov.*—Fig. 1.

Stat. Conid. **Penicillium assiutense** Samson & Abdel-Fattah, *sp. nov.*

Coloniae in agaro farina maydis confecto celeriter crescunt, post 14 dies 33 °C 7 cm diam., in strato basilari coacto copiosa ascomata alba vel dilute flava ferentes. Status conidialis plerumque parcus vel absens, in coloniis vetustis nonnumquam stratum virescens format. Exsudatum incoloratum nonnumquam adest; odor abest. Reversum cremeum vel dilute flavum. Ascomata 10 diebus 33 °C maturantia, mollia, saepe mycelio laxo obtecta, nonnumquam confluentia, alba, nonnumquam dilute flava, globosa vel subglobosa, 250–500 µm diam.; hyphis laxe intricatis involuta; e hyphis regulariter acervatis oriuntur. Asci catenulati, globosi vel ellipsoidei, 7–10 × 5.5–7 µm, evanescentes, 8-spori. Ascosporae ellipsoideae, 3.0–3.5 × 2.0–2.5 µm, hyalinae, leves vel minute asperulatae. Conidiophora plerumque ex hyphis aeriis surgentia, erecta, hyalina, levia; stipites 25–40 × 2.5–3.0 µm, unum penicillum metularum phialidumque proferunt; metulae plus minusve cylindricae, 3–5 verticillatae, 12–17 × 2.0–3.0 µm; phialides lanceolatae, 2–5 verticillatae, 12–16 × 2.2–3.0 µm. Conidia in catenis intricatis connexa, hyalina, ellipsoidea, levia, 2.2–4.0 × 1.5–2.2 µm. Chlamydosporae absunt. Temperatura optima 33 °C, crescere potest inter 12 et 40 °C.

Typus: *CBS 147.78*, isolatus e terra diluta, ungulis bisonis maceratis admixta, prope Assiut in Aegypto a H. M. Abdel-Fattah, 1977.

Colonies on oatmeal agar growing rapidly, attaining a diameter of 7 cm within 2 weeks at 33 °C, consisting of a basal felt in which numerous white to pale yellow

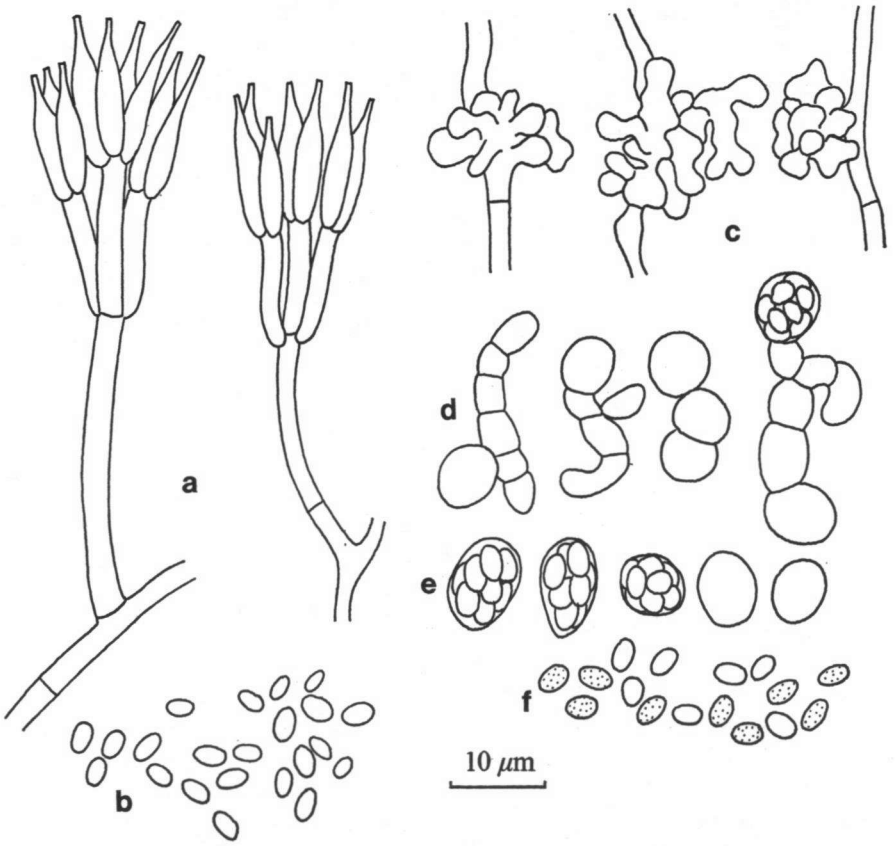

Fig. 1. *Talaromyces assiutensis*. — a. conidiophores. — b. conidia. — c. initials. — d. catenulate asci. — e. asci. — f. ascospores.

ascomata develop; conidial state usually scantily produced or sometimes absent, in 5 weeks old cultures greenish conidial areas may occur when cultures are transferred after 2 weeks from 33 °C to room temperature (about 20 °C). Exudate not produced or sometimes present as colourless drops. Odour absent. Reverse cream to pale yellow. Ascomata ripening within 10 days at 33 °C, non-ostiolate, soft, often bounded by loose cottony mycelial overgrowth, occasionally confluent, white, sometimes pale yellow, globose to suglobose, 250–500 μm in diameter; ascoma wall consisting of loose thin hyphae; ascomata developing from regularly gnarled hyphae. Asci in chains, globose to ellipsoidal, 7–10 × 5.5–7 μm, evanescent, 8-spored. Ascospores ellipsoidal, 3.0–3.5 × 2.0–2.5 μm, hyaline, smooth-walled to finely roughened. Conidiophores hyaline, erect, smooth-walled; stipe 25–40 × 2.5–3.0 μm, bearing one apical whorl of metulae and phialides. Metulae more or less cylindrical, 3 to 5 in a whorl, 12–17 × 2.0–3.0 μm. Phialides lanceolate, in whorls of 2 to 5, 12–16 × 2.2–3.0 μm. Conidia in tangled chains, hyaline, ellipsoidal, smooth-walled, 2.2–4.0 × 1.5–2.2 μm. Chlamydospores not observed.

Colonies on 2% malt extract agar (MEA) growing more slowly than on oatmeal agar with thinner growth and less abundant production of ascomata. In slant

cultures on MEA ascomata with a diameter up to 2000 µm were observed after one month. Conidial state usually better developed than on oatmeal agar. Reverse and basal felt of the colonies yellow to red brown.

Optimum temperature for growth is 33 °C, with a temperature range between 12 and 40 °C. Optimum temperature for ascomata production on oatmeal agar is between 30 and 36 °C.

Type culture *CBS 147.78*, isolated by dilution plating from soil which had been amended with crushed buffalo hooves and incubated for 5 months at 35 °C by H. M. Abdel-Fattah, Assiut, Egypt.

T. assiutensis belongs to the section *Talaromyces* (Stolk & Samson, 1972), but differs from the other members of this section by the white ascomata and the small, smooth-walled to finely roughened ascospores. It resembles *T. trachyspermus* (Shear) Stolk & Samson, but can be distinguished from it by the smooth ascospores, the regularly gnarled ascoma initials and the short biverticillately branched conidiophores. Since the type strain of *T. assiutensis* was isolated from soil with crushed buffalo hooves it was also cultivated on sterilized hairs on plain agar. The strain showed some growth on the hairs, but the hyphae did not penetrate the cortex of the hairs.

DISCUSSION OF SOME RECENTLY DESCRIBED TAXA IN TALAROMYCES

Since the publication of the monograph by Stolk & Samson (1972) some new taxa have been described:

Wright & Loewenbaum in Bertoni & al. (1973) distinguished a new var. *macrocarpus* of *Talaromyces trachyspermus* (Shear) Stolk & Samson for strains which have 500–1500 µm large ascomata. The variety was, however, invalidly published because no type was indicated (Art. 37, Stafleu & al., 1972). The size of the ascomata in the genus *Talaromyces* is an unreliable character since it is depending on age and culture media. The variety *macrocarpus* can therefore regarded as insufficiently distinct from *T. trachyspermus*.

In their notes on Ascomycetes from Ohio, Huang & Schmitt (1975) described seven *Talaromyces* species from soil. They found that *Penicillium ucrainicum* Panasenko (1964) is a *nomen invalidum*, because it was published without indication of a type and regarded it correctly synonymous with *T. flavus* (Klöcker) Stolk & Samson var. *flavus*. They proposed a new name, *Penicillium ohiense* Huang & Schmitt (as '*ohiensis*') for the anamorph of the different species, *T. ucrainicus* Udagawa.

T. galapagensis Samson & Mahoney (1977) isolated from partially sterilized soil of the Galapagos Islands, is a distinct species, characterized by large ascospores ornamented by irregularly disposed warts and ridges.

Ram & Ram (1972) proposed the new combination *Eupenicillium vermiculatum* (Dangeard) Ram & Ram, but did not indicate the location of the basionym *Penicillium vermiculatum* Dangeard. This combination is therefore not validly published according to Art. 33 (Stafleu & al., 1972). The culture studied by these authors was not available for study but their description seems to fit *T. flavus* var. *flavus*.

REFERENCES

BERTONI, M. D., GODEAS, A. M., LOEWENBAUM, M. E. & WRIGHT, J. E. (1973). Micoflora del suelo de la Argentina IV. Formas ascospóricas adicionales de la Region Chaqueña. *In* Boln Soc. Argent. Bot. **15**: 93–105.

HUANG, L. H. & SCHMITT, J. A. (1975). Ohio Ascomycetes Notes II. *Talaromyces* from soil of Southern Ohio. *In* Ohio J. Sci. **75**: 75–81.

PANASENKO, V. T. (1964). Some new species of fungi on starch from the Ukraine. *In* Mycologia **56**: 58–63.

RAM, C. & RAM, A. (1972). Timber attacking fungi from the State of Maranhão Brazil. Some new or interesting wood-staining fungi. IX. *In* Broteria **41**: 89–112.

SAMSON, R. A. & MAHONEY, D. P. (1977). *Talaromyces galapagensis*, spec. nov. *In* Trans. Br. mycol. Soc. **69**: 158–160.

STAFLEU, F. A. & al. (Editors) (1972). International Code of botanical nomenclature adopted by the Eleventh International Botanical Congress, Seattle, August 1969. *In* Regnum veg. **82**: 1–426.

STOLK, A. C. & SAMSON, R. A. (1972). Studies on *Talaromyces* and related genera II. The genus *Talaromyces*. *In* Stud. Mycol., Baarn **2**: 1–56.