MYCOTAXON

Volume 111, pp. 117–120 *January–March 2010*

Two new species of *Humicola* from soil

Yu-Lan Jiang[1, 2] & Tian-Yu Zhang[1, *]

tyzhang1937@yahoo.com.cn

[1]*Department of Plant Pathology, Shandong Agricultural University*
Taian, 271018, China

[2]*Department of Plant Pathology, Guizhou University*
Guiyang, 550025, China

Abstract — Two new species of *Humicola* from soil in China, *H. interseminata* and *H. macrospora*, are described and illustrated. The type specimens (dried cultures) and living cultures are deposited in the Plant Pathology Herbarium of Shandong Agricultural University (HSAUP).

Key words — anamorphic fungi, taxonomy

Introduction

The genus *Humicola* was established by Traaen (1914) for two species with hyaline hyphae: the type species, *Humicola fuscoatra,* and *H. grisea*. Later, more species were found, although those with pigmented hyphae did not fit within Traaen's original circumscription. Fassatiová (1967) emended the original generic diagnosis, pointing out that taxonomic opinion no longer considered pigment a decisive feature (Hughes 1953, Subramanian 1962). In addition, she emphasized that only strains in which aleuriospores are dominant in the culture can be included in this genus. Bertoldi (1976) concluded that aleuriospore size is the most effective and stable diagnostic morphological character in *Humicola.* By 2006, no fewer than 50 taxa of this genus had been reported in the world (http://www.indexfungorum.org/ Names/Names.asp).

During an investigation of soil dematiaceous hyphomycetes in southwest China, one fungus obtained from a rice field and another from forest soil possessed the typical *Humicola* characters but did not match other similar species in this genus. These two fungi are described as new species.

* *Corresponding author*

Taxonomic descriptions

Humicola interseminata Y.L. Jiang & T.Y. Zhang, **sp. nov.** FIGURE 1

MycoBank MB 515212

Coloniae effusae, griseo-brunneae, reverse atro-brunneae. Mycelium superficiale vel immersum. Hyphae subhyalinae vel pallide flavo-brunneae, ramosae, septatae, laeves, 1–3 µm crassae. Conidia globosa, singulatim directe nata in vegetalibus hyphis vel in brevibus lateralibus conidiophoris, unicellularia, laevia, pallide flavo-brunnea vel flavo-brunnea, 3–7.5 (plerumque 5.1) µm in diametro. Intercalares, globosa chlamydosporae producuntur. Phialosporae non visae.

Holotype: from soil of a rice field in Wuchang, Hubei Province, China. Oct. 13. 2004, Y. L. Jiang, HSAUP II $_{04}$6108, dried culture (**holotype**), and ex-type living culture.

Etymology: in reference to its habitat.

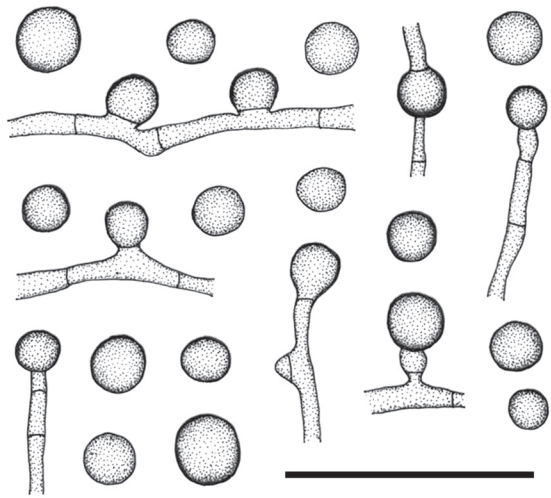

Fig. 1 Conidia and conidiophores of *Humicola interseminata* (Bar = 25 µm)

Colonies on PDA effuse, greyish brown, reverse dark brown. Mycelium superficial and immersed: hyphae subhyaline to pale yellowish brown, branched, septate, smooth, 1–3 µm wide. Conidia globose, with a scar at the base of free spores, produced singly either directly on the sides of vegetative hyphae or on short lateral conidiophores, unicellular, smooth, pale yellowish brown to yellowish brown, 3–7.5 (commonly 5.1) µm in diameter. Intercalary, globose chlamydospores are produced. Phialospores not seen.

Comments: The species most similar to *H. interseminata* are *H. indica* S.C. Agarwal (Agarwal 1983; nom. illegit., non Haware & Pavgi 1971) and *H. nivea*

De Bertoldi (De Bertoldi 1976). However, *H. interseminata* produces only globose conidia while *H. indica* produces both globose and elliptical conidia. Conidia of *H. interseminata* are solitary while those of *H. indica* sometimes occur in groups. Also, *H. interseminata,* unlike *H. indica,* produces intercalary chlamydospores.

Humicola interseminata is distinguished from *H. nivea* by conidial size and ornamentation, with the conidia of *H. nivea* larger (8.9–9.4 µm) and sometimes with slightly roughened walls.

Humicola macrospora Y.L. Jiang & T.Y. Zhang, **sp. nov.** FIGURE 2

MycoBank MB 515213

Coloniae effusae, lanosae rufo-brunneae, reverse atro rufo-brunneae. Mycelium superficiale vel immerse. Hyphae ramosae, septatae, laeves, subhyalinae vel pallide auratae, 1–3 µm latae. Conidiophora pallide aurata vel aurata, ramosa, septata, laevia, 5–13 µm crassa. Conidia globosa, solitaria vel in brevicatenatis, directe nata in vegetalibus hyphis vel in lateralibus conidiophoris, unicellulares, laevia, aurea, crasse tunicata, 15–37 (vulgo 26) µm in diametro. Intercalares, globosa chlamydosporae producuntur. Phialosporae non visae.

Holotype: from a soil of Emei Mountain, Sichuan Province, China. Aug. 9. 2005, Y.L. Jiang, HSAUP II_{05}0911, dried culture (**holotype**), and ex-type living culture.

Etymology: in reference to the large conidia.

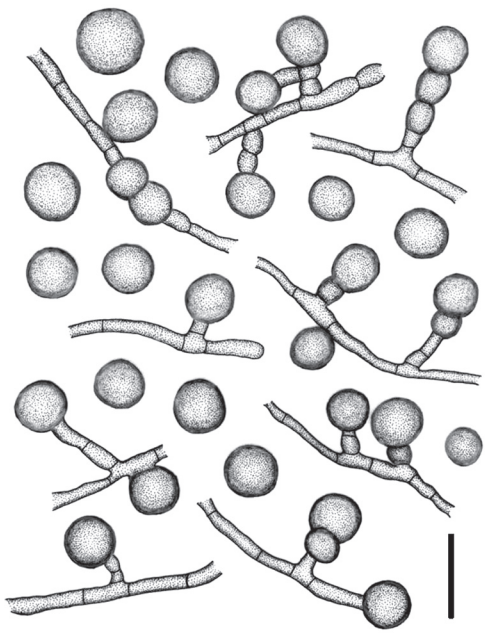

Fig. 2 Conidia and conidiophores of *Humicola macrospora* (Bar = 50 µm)

Colonies on PDA effuse, cottony, reddish brown, darker in reverse. Mycelium superficial and immersed: hyphae branched, septate, smooth, subhyaline to pale golden yellow, 1–3 µm wide. Conidiophores pale golden yellow to golden yellow, branched, septate, smooth, 5–13 µm wide. Conidia globose, solitary or forming short chains, produced either directly on the sides of vegetative hyphae or on lateral conidiophores, unicellular, smooth, golden yellow, thick-walled, 15–37 (commonly 26) µm in diameter. Intercalary, globose chlamydospores are produced. Phialospores not seen.

Comments: *Humicola macrospora* differs from all other described species in the genus in its large, golden yellow conidia and reddish brown colonies on PDA.

Acknowledgments

The authors are grateful for pre-submission comments and suggestions provided by Dr. B. Kendrick and Prof. Y.L. Guo. This project was supported by the National Science Foundation of China (no.30570005, 30499340).

Literature cited

Agarwal SC. 1983 ("1982"). A new species of *Humicola* from Indian alkaline soils. Indian J. Mycol. Plant Pathol. 12(2): 222–223.

De Bertoldi M. 1976. New species of *Humicola:* an approach to genetic and biochemical classification. Can. J. Bot. 54: 2755–2768.

Ellis MB. 1971. Dematiaceous hyphomycetes. Commonwealth Mycological Institute, Kew, Surrey, England. 1–608.

Fassatiová O. 1967. Notes on the genus *Humicola* Traaen. II. Česká Mykologie 21(2): 78–89.

Hughes SJ. 1953. Conidiophores, conidia and classification. Can. J. Bot. 31: 577–659.

Roxon JE, Jong SC. 1974. A new pleomorphic species of *Humicola* from Saskatchewan soil. Can. J. Bot. 52: 517–520.

Subramanian CV. 1962. The classification of the *Hyphomycetes.* Bull. Bot. Surv. India 4: 249–259.

Traaen EA. 1914. Untersuchungen über die Bodenpilze aus Norwegen. Nyt. Mag. Naturvid. 32: 20–121.