
Two new *Meliola* species from China

Bin Song^{*}, Tai-Hui Li and Ya-Heng Shen

Guangdong Institute of Microbiology, Guangzhou 510070, Guangdong, China

Song, B., Li, T.H. and Shen, Y.H. (2003). Two new *Meliola* species from China. Fungal Diversity 12: 173-177.

Meliola fabri parasitic on *Castanopsis fabri*, and *Meliola hosagoudarrii* parasitic on *Tutcheria microcarpa* are described and illustrated as new species.

Key words: *Meliola fabri*, *Meliola hosagoudarrii*, *Meliolaceae*.

Introduction

Fungi in the genus *Meliola* (*Meliolaceae*), are obligate parasites on higher plants that are widely distributed in the tropical and subtropical regions. Although attempts have been made to culture these fungi, both in the laboratory and on host plants (Hansford, 1961; Thite and Patil, 1975; Goos, 1978), no one has yet succeeded in doing so. The genus *Meliola* is similar to the *Amazonia*, *Appendiculella*, *Asteridiella* and *Irenopsis*, but it differs from these genera of *Meliolaceae* in having hyphal setae on the mycelium and lacking vermiform appendages and setae on perithecial surface (Hansford, 1961). *Meliola* is the largest genus of the family *Meliolaceae*. Over 1000 species of *Meliola* have been described and over 230 species have been reported from China (Hu *et al.*, 1996, 1999; Kirk *et al.*, 2001; Song *et al.*, 2002).

Specimens of meliolaceous fungi deposited in the Herbarium of Guangdong Institute of Microbiology (HMIGD), Guangzhou (China) were examined. Two new species are determined, and therefore described and illustrated here.

Taxonomy

***Meliola fabri* B. Song, T.H. Li & Y.H. Shen, sp. nov.** (Figs. 1-3)

Etymology: in reference to the host, *Castanopsis fabri*.

Coloniae caulinolae, atrae, densae, velutinae, dispersae, ad 3 mm diam., raro confluentes. *Hyphae* brunneae, rectae vel undulatae, opposite vel alternate acuteque ramosae,

* Corresponding author: B. Song; e-mail: lith@gis.sti.gd.cn

dense reticulatae, cellulae $12-20 \times 5-7 \mu\text{m}$. *Appressoria* opposita vel 10% alternata, interdum dense posita, antrorsa, recta vel subrecta, $11-20 \mu\text{m}$ longa; *cellulae basis* subcylindraceae, $3-6 \mu\text{m}$ longae; *cellulae apicalis* ellipsoideae vel oblongae, integrae, $9-14 \times 7-10 \mu\text{m}$. *Phialides* illis capitatis immixtae, oppositae vel alternatae, ampullaceae, $15-28 \times 7-9 \mu\text{m}$. *Setae myceliales* dispersae vel aggregatae, numerosae, atrae, simplices, rectae vel leniter curvulae, apice acutae, ad $290 \mu\text{m}$ longae vel $8-12 \mu\text{m}$ crassae ad basim. *Perithecia* aggregata, nigra, globosa, verrucosa, ad $140 \mu\text{m}$ diam. *Ascospores* brunneae, ellipsoideae vel subfusoideae, utringue obtusae, 3-septatae, constrictae, $43-45 \times 13-17 \mu\text{m}$.

Colonies caulicolous, black, dense, velvety, scattered, up to 3 mm diam., rarely confluent. *Hyphae* brown, straight to undulate, opposite to alternate branching at acute angles, closely reticulate, cells $12-20 \times 5-7 \mu\text{m}$. *Appressoria* opposite, up to 10% alternate, often crowded, spreading, straight to nearly straight, $11-20 \mu\text{m}$ long; *stalk cells* nearly cylindrical, $3-6 \mu\text{m}$ long; head cells ellipsoid to oblong, entire, $9-14 \times 7-10 \mu\text{m}$. *Phialides* mixed with appressoria, opposite to alternate, ampulliform, $15-28 \times 7-9 \mu\text{m}$. *Mycelial setae* scattered to crowded, numerous, black, simple, straight to slightly curved, acute at the apex, up to $290 \mu\text{m}$ long, $8-12 \mu\text{m}$ broad at base. *Perithecia* crowded, black, globose, verrucose, up to $140 \mu\text{m}$ diam. *Ascospores* brown, ellipsoidal to nearly fusiform, obtuse, 3-septate, constricted at septa, $43-45 \times 13-17 \mu\text{m}$.

Material examined: CHINA, Wuyishan, Fujian Province, on leaves of *Castanopsis fabri* Hance (*Fagaceae*), September 1980, Z.X. Chen (HMIGD 30951, holotype designated here).

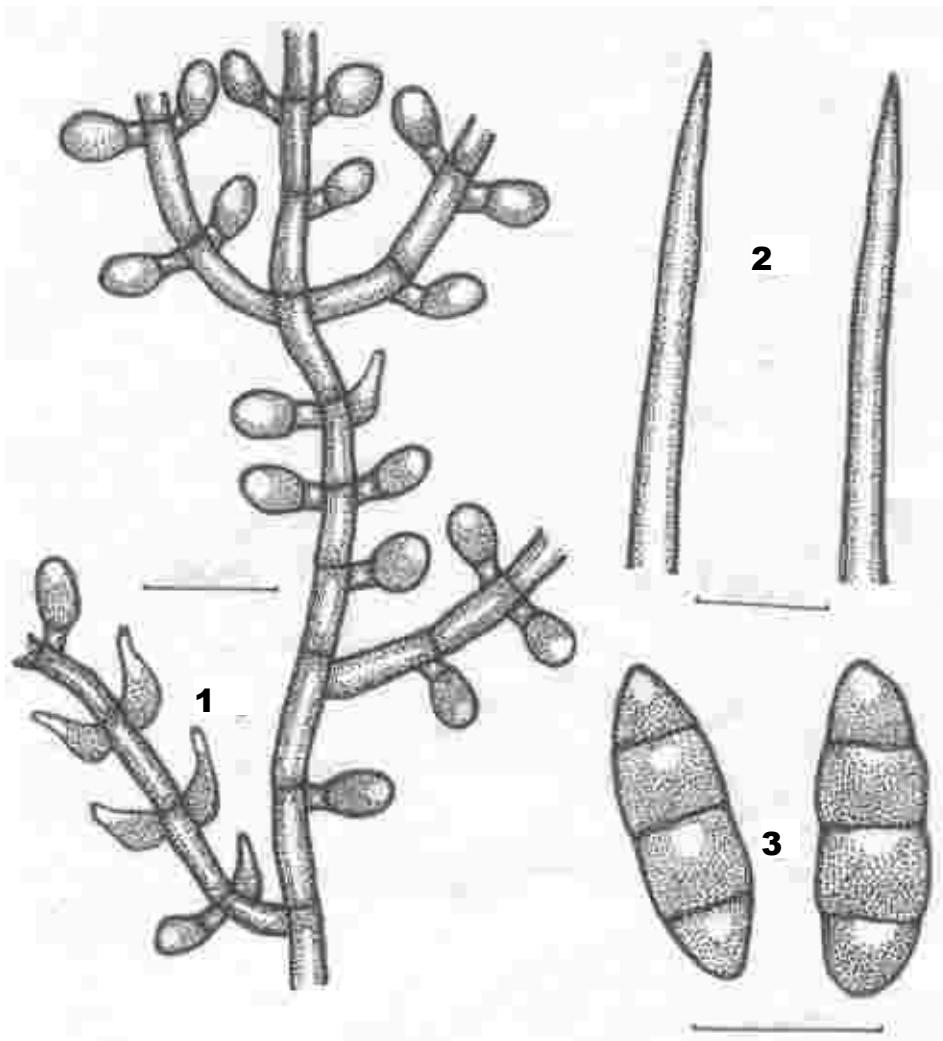
Notes: The present species differs from other species of *Meliola* known on the members of the *Fagaceae* in having 3-septate ascospores. It is similar to *Meliola hippocrateicola* Hansf. & Deight., but differs from this species in having 3-lobate appresoria, and having smaller and differently shaped ascospores (oblong, $34-41 \times 11-14 \mu\text{m}$ in *M. hippocrateicola*).

Meliola hosagoudarii B. Song, sp. nov. (Figs. 4-7)

Etymology: in honour of V.B. Hosagoudar for his contribution towards the study of Indian Meliolales.

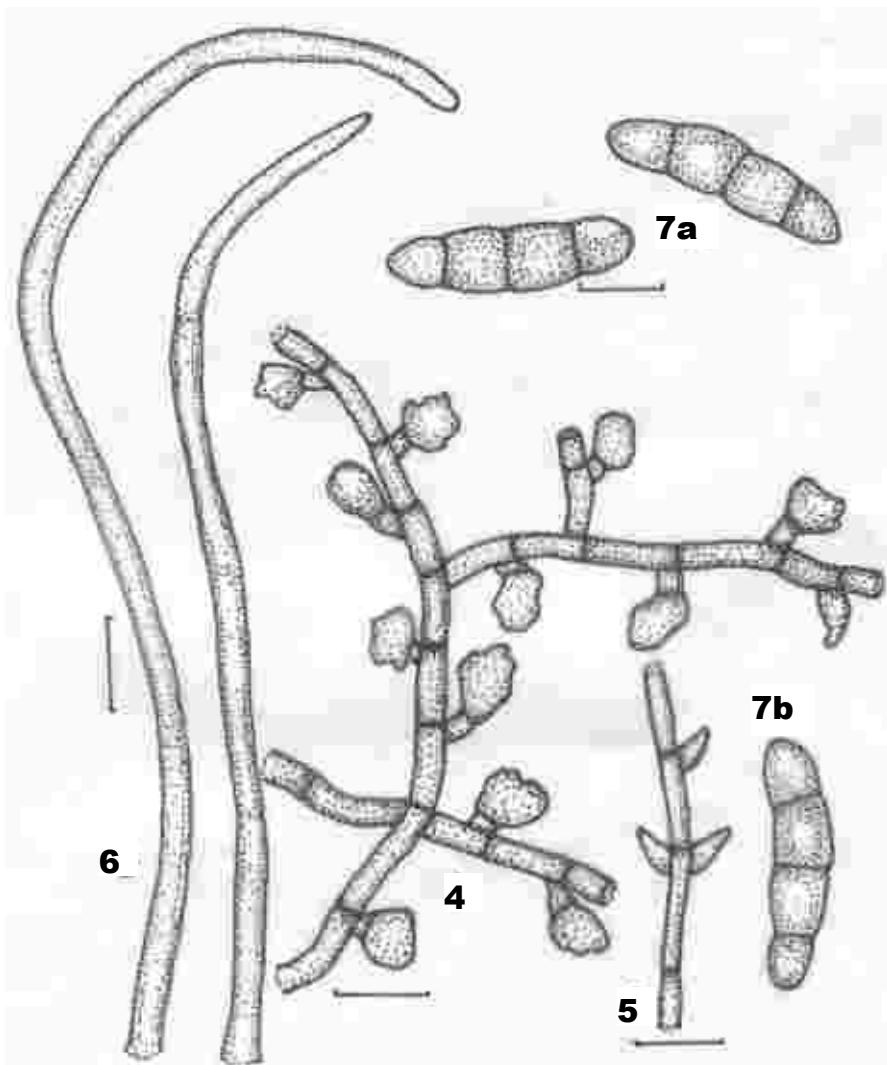
Coloniae amphigenae, atrae, densae, velutinae, dispersae, ad 5 mm diam., raro confluentes. *Hyphae* brunneae, rectae vel undulatae, opposite acuteque vel wideque ramosae, dense reticulatae, cellulae $20-40 \times 6.5-8 \mu\text{m}$. *Appressoria* alternata vel unilateralia, antrorsa, recta vel curvata, $20-37 \mu\text{m}$ longa; *cellulae basalis* cuneatae vel cylindraceae, $5-12 \mu\text{m}$ longae; *cellulae apicalis* ovatae vel ellipsoideae, lobatae vel angulosae, $15-25 \times 17-20 \mu\text{m}$. *Phialides* illis appressoria immixtae, interdum separatae, alternatae vel oppositae, ampullaceae, $13-16 \times 6-7 \mu\text{m}$. *Setae myceliales* dispersae vel aggregatae, atrae, simplices, curvulae, subacutae ad apicem, ad $480 \mu\text{m}$ longae vel basis $7.5-9.5 \mu\text{m}$ latae ad basim. *Perithecia* aggregata, nigra, globosa, verrucosa, ad $160 \mu\text{m}$ diam. *Ascospores* brunneae, curvatae, cylindraceae vel fusoideae, obtusae, 3-septatae, constrictae, $70-77 \times 16.5-18.5 \mu\text{m}$.

Colonies amphigenous, black, dense, velvety, scattered, up to 5 mm diam., rarely confluent. *Hyphae* brown, straight to undulate, branching opposite at an acute to wide angle, closely reticulate, cells $20-40 \times 6.5-8 \mu\text{m}$.



Figs. 1-3. *Meliola fabri*. 1. Hyphae with appressoria and phialides. 2. Mycelial setae. 3. Ascospores. Bars = 25 μm .

Appressoria alternate to unilateral, spreading, straight to curved, 20-37 μm long; stalk cells cuneate to cylindrical, 5-12 μm long; *head cells* ovate or elliptical, lobate or angulose, 15-25 \times 17-20 μm . *Phialides* mixed with appressoria, or sometimes separate, alternate to opposite, ampulliform, 13-16 \times 6-7 μm . *Mycelial setae* scattered or crowded, black, simple, curved, subacute at the apex, up to 480 μm long, 7.5-9.5 μm broad at the base. *Perithecia* aggregated, black, globose, verrucose, up to 160 μm diam. *Ascospores* brown, bent, cylindrical to fusiform, obtuse, 3-septate, constricted at the septa, 70-77 \times 16.5-18.5 μm .



Figs. 4-7. *Meliola hosagoudarrii*. **4.** Hyphae with appressoria and phialides. **5.** Phialides. **6.** Mycelial setae. **7a,b.** Ascospores. Bars = 25 μm .

Material examined: CHINA, Chebaling, Guangdong Province, on leaves of *Tutcheria microcarpa* Dunn (Theaceae), March 1993, B. Song & Y.S. Ouyang (HMIGD 34010, holotype designated here).

Notes: *Meliola hosagoudarrii* differs from other *Meliola* species known on the members of Theaceae in having 3-septate ascospores. *Meliola litseicola* Hansf. is similar to this new species, but differs in forming straight, ellipsoid and shorter ($50-55 \times 18-20 \mu\text{m}$) ascospores.

Acknowledgements

The project was supported by the Natural Science Foundation of Guangdong (A20000205; A020470) and Guangdong Key Laboratory of Microbial Culture Collection and Application. The authors are deeply grateful to V.B. Hosagoudar of Microbiology Division, Tropical Botanic Garden and Research Institute, Palode (India) for reviewing the manuscript, and especially acknowledge F.W. Xing of the South China Institute of Botany, Academia Sinica, Guangzhou, for identifying the host plants.

References

- Goos, R.D. (1978). Field and laboratory studies of meliolaceous fungi in Hawaii. *Mycologia* 70: 995-1006.
- Hansford, C.G. (1961). The Meliolineae. A Monograph. *Sydowia Beih* 2: 1-806.
- Hu, Y.X., Ouyang, Y.S. and Song, B. (1996). *Flora Fungorum Sinicorum. Vol. 4. Meliolales I.* Science Press, Beijing: 1-270. [Chinese]
- Hu, Y.X., Song, B. and Ouyang, Y.S. (1999). *Flora Fungorum Sinicorum. Vol. 11. Meliolales II.* Science Press, Beijing: 1-252. [Chinese]
- Kirk, P.M., Cannon, P.F., David, J.C. and Stalpers, J.A. (2001). *Ainsworth & Bisby's Dictionary of the Fungi*. 9th edn. CAB International, Wallingford, UK.
- Song, B., Li, T.H. and Shen, Y.H. (2002). Ecological and floristic analyses of Meliolales (Fungi) in China. *Journal of Tropical and Subtropical Botany* 10: 118-127. [Chinese]
- Thite, A.N. and Patil, C.R. (1975). Ascospore germination in *Meliola jasminicola*. *Indian Phytopathology* 28: 94-96.

(Received 30 June 2002; accepted 17 October 2002)