Cordana meilingensis and C. lushanensis spp. nov. from Jiangxi, China

Cong-Cong Ai¹, Jian Ma²,³, Kai Zhang⁴, Rafael F. Castañeda-Ruíz⁵, Xiu-Guo Zhang¹*¹

¹Department of Plant Pathology, Shandong Agricultural University, Taian, Shandong 271018, China
²College of Agronomy, Jiangxi Agricultural University, Nanchang, Jiangxi 330045, China
³Jiangxi Key Laboratory for Conservation and Utilization of Fungal Resources, Jiangxi Agricultural University, Nanchang, Jiangxi 330045, China
⁴Department of Landscaping, Shandong Yingcai University, Jinan, Shandong 250104, China
⁵Instituto de Investigaciones Fundamentales en Agricultura Tropical Alejandro de Humboldt (INIFAT), Académico Titular de la Academia de Ciencias de Cuba, Calle 1 Esq. 2, Santiago de Las Vegas, C. Habana, Cuba, C.P. 17200

*Correspondence to: zhxg@sdau.edu.cn

ABSTRACT—Two new anamorphic fungi, Cordana meilingensis and C. lushanensis, were collected from dead branches in Jiangxi Province, China. Cordana meilingensis is characterized by its oblong or cylindrical, medially 1-septate, brown, smooth conidia with a prominent hilum. Cordana lushanensis is distinguished by its ellipsoidal to ovoid, pale brown, aseptate, smooth conidia with a prominent basal scar. They are described, illustrated, and compared with similar taxa.

Key words—asexual fungi, Cordanaceae, Cordanales, hyphomycetes, taxonomy

Introduction

Preuss (1851) established Cordana with three species, without designating a type species, and subsequently added a fourth species (Preuss 1853). However, Saccardo (1886) redescribed Cordana, retaining only one species, C. pauciseptata Preuss, which thus effectively became the type species (Hughes 1958, Seifert & al. 2011; epitypified by Hernández-Restrepo &
al. 2014). *Cordana* is mainly characterized by distinct, simple or sparsely branched conidiophores, and solitary, acropleurogenous, 0–1-septate conidia seceding schizolytically from polyblastic, integrated, terminal and becoming also intercalary, sympodial conidiogenous cells with small denticles, the conidia are ellipsoidal, ovoid, obvoid, pyriform or cylindrical, often with a prominent hilum (Ellis 1971, Markovskaja 2003). Castañeda-Ruiz & al. (1999) reviewed 17 species of *Cordana* and provided a comparative table that distinguished 11 accepted *Cordana* species. However, Markovskaja (2003) regarded *C. minimumbonata* R.F. Castañeda & al. as a problematic species due to its conidial shape and septation mode. *Cordana* currently contains 19 recognized species (Hernández-Restrepo & al. 2014), distinguished primarily by conidial features including shape, size, septation, pigmentation, ornamentation, and presence or absence of a synanamorph (Castañeda-Ruiz & al. 1999, Markovskaja 2003, Hernández-Restrepo & al. 2014).

During our continuing survey (2005–18) of microfungi from plant debris in the forests of southern China, two species referable to the genus *Cordana* were collected on dead branches in Jiangxi Province. A close examination of the two fungi showed that they have significant differences from previously described *Cordana* species and are therefore proposed as new to science.

**Cordana meilingensis** C.C. Ai, Jian Ma, X.G. Zhang & R.F. Castañeda, sp. nov.  

**Fig. 1** IF 555813

Differs from *Cordana johnstonii*, *C. uniseptata*, and *C. versicolor* by its smaller oblong or cylindrical, medially 1-septate, concolorous conidia; and from *C. mercadoana* by its larger, medially 1-septate, brown conidia.

**Type:** China, Jiangxi Province: Meiling National Park, on dead branches of an unidentified broadleaf tree, 8 October 2013, J. Ma (Holotype, HJAPM M0144).

**Etymology:** refers to the locality where the type specimen was found.

**Colonies** on the natural substratum effuse, brown to dark brown. Mycelium partly superficial, partly immersed, composed of branched, septate, smooth, subhyaline to pale brown hyphae. **Conidiophores** macronematous, mononematous, unbranched, erect, straight or flexuous, cylindrical, smooth, septate, brown to dark brown, paler towards the apex, 73–185 × 4–5 μm, occasionally swollen at the base, 5.5–9 μm diam. **Conidiogenous cells** polyblastic, integrated, terminal and intercalary, with subhyaline and slightly prominent scars, cylindrical. **Conidia** solitary, acropleurogenous, dry, medially 1-septate, often slightly constricted at the septa, oblong or cylindrical, brown, smooth, 10–13 × 5.5–7 μm, with a prominent hilum, 0.5–1 × 0.5 μm.
**COMMENTS**—*Cordana meilingensis* resembles *C. johnstonii* M.B. Ellis, *C. uniseptata* L. Cai & al., *C. versicolor* D.J. Soares & R.W. Barreto, and *C. mercadoana* Hern.-Restr. & al. in conidial shape (Table 1). However, *C. johnstonii* has larger broadly ellipsoidal conidia and grows only on plants in the genus *Musa* (Ellis 1971); *C. uniseptata* produces larger broadly ellipsoidal, asymmetrically 1-septate, versicolored conidia (Cai & al. 2004); *C. versicolor* differs by its larger broadly ellipsoidal conidia with a paler basal cell and is parasitic on *Canna denudata* Rosco ([= *C. paniculata* Ruiz & Pav.]
(Soares & al. 2005); and *C. mercadoana* differs by its smaller, versicolored, 0–1-septate conidia (Hernández-Restrepo & al. 2014).

**Table 1. Comparisons of conidia and substrates of *Cordana meilingensis* and similar species**

<table>
<thead>
<tr>
<th>Species</th>
<th>Conidia</th>
<th>Substrate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shape</td>
<td>Size (μm)</td>
</tr>
<tr>
<td><em>C. johnstonii</em>³</td>
<td>Broadly ellipsoidal</td>
<td>20–30 × 12–18</td>
</tr>
<tr>
<td><em>C. meilingensis</em></td>
<td>Oblong or cylindrical</td>
<td>10–13 × 5.5–7</td>
</tr>
<tr>
<td><em>C. mercadoana</em>²</td>
<td>Oblong, obovoid, or cylindrical</td>
<td>6–10 × 3–4</td>
</tr>
<tr>
<td><em>C. uniseptata</em>³</td>
<td>Broadly ellipsoidal</td>
<td>13.5–23 × 8.5–11.5</td>
</tr>
<tr>
<td><em>C. versicolor</em>⁴</td>
<td>Broadly ellipsoidal</td>
<td>15–25 × 10–15</td>
</tr>
</tbody>
</table>

Data from ¹Ellis (1971); ²Hernández-Restrepo & al. (2014); ³Cai & al. (2004); ⁴Soares & al. (2005)

**Cordana lushanensis** C.C. Ai, Jian Ma, X.G. Zhang & R.F. Castañeda, sp. nov. Fig. 2

IF 555814

Differs from *Cordana verruculosa* by its larger smooth conidia; from *C. semaniae* and *C. solitaria* by its smaller ellipsoidal to obovoid, pale brown conidia with a prominent basal scar; and further from *C. solitaria* by lacking a *Bispora*-like synanamorph.

**Type:** China, Jiangxi Province: Lushan (Mount Lu), on dead branches of an unidentified broadleaf tree, 8 November 2017, J. Ma (*Holotype*, HJAP M5406).

**Etymology:** refers to the locality where the type specimen was found.

**Colonies** on the natural substratum effuse, brown to dark brown. Mycelium partly superficial, partly immersed, composed of branched, septate, smooth, subhyaline to pale brown hyphae. **Conidiophores** macronematous, mononematous, simple or branched, erect, straight to flexuous, cylindrical, with intercalary nodes, 7–14 μm diam, brown, paler toward the apex, smooth, ≤240 × 6.5–7.5 μm. **Conidiogenous cells** integrated, polyblastic, terminal and intercalary, with subhyaline small denticles, proliferations percurrent, cylindrical to lageniform. Conidial secession schizolytic. **Conidia** solitary, acropleurogenous, dry, 0-septate, ellipsoidal to obovoid, pale brown, smooth, 5.5–8 × 2.5–4 μm, with a prominent basal scar, 0.3–0.5 μm diam.
**Comments** – Among the known species, only *C. semaniae* Davydchina & al., *C. solitaria* V. Rao & de Hoog, and *C. verruculosa* Hern.-Restre. & al. resemble *C. lushanensis* in producing aseptate conidia. However, *C. verruculosa* differs by its smaller (3–5.5 × 2–3.5 μm) verruculose conidia (Hernández-Restrepo & al. 2014); *C. semaniae* differs by its larger (21–27 × 9–15 μm) obovoid black conidia with an acute basal cell (Davydkina & Mel'nik 1989); *C. solitaria* differs by its broader (4.5–6.5 μm diam) obovoid conidia with a slightly papillate base, and the presence of a *Bispora*-like synanamorph (Rao & de Hoog 1986).

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**Literature cited**


