**Endomelanconium phoenicicola** sp. nov., a new coelomycete from *Phoenix hanceana* in Hong Kong

Yanna*, Kevin D. Hyde and Teik-Khiang Goh

Fungal Diversity Research Project, Department of Ecology and Biodiversity, The University of Hong Kong, Pokfulam Road, Hong Kong; * email: yanna@graduate.hku.hk


*Endomelanconium phoenicicola* sp. nov., occurring as a saprobe on decaying leaves and petioles of *Phoenix hanceana* in Hong Kong, is described and illustrated. It differs from *E. pini* and *E. nanum*, the two other members of the genus, in having longer conidiogenous cells producing conidia which are dorsiventrally globose to broadly-ellipsoidal, and laterally slightly flattened.

Key words: Bulgaria, Melanconium, mitosporic fungi, palm fungi, saprotroph, taxonomy.

Introduction

*Endomelanconium* Petr. was erected based on *E. pini* (Corda) Petr., which was transferred from *Melanconium* Link (Petrak, 1940). Gamundi and Arambarrri (1983) introduced a second species, *E. nanum* Gamundi and Aramb. *Endomelanconium* differs from *Melanconium* in having eustromatic, multilocular conidiomata, cylindrical, hyaline conidiogenous cells producing dark brown conidia that have a protruding base, each bearing a longitudinal striation (Sutton, 1980). In *Melanconium*, the conidiomata are acervular, while the branched conidiophores bear annellidic conidiogenous cells, and conidia lack striations (Sutton, 1980). *Endomelanconium* was placed in the monoblastic group of the suborder Blastostromatineae by Sutton (1980), a group characterized by eustromatic conidiomata and holoblastic conidiogenesis. Genera in the Blastostromatineae having unicellular, dark brown, smooth, thick-walled conidia are similar to *Endomelanconium*, for example, *Cymbothyrium* Petr., *Harknessia* Cooke and *Lasmenia* Speg. These three genera, however, differ from *Endomelanconium* in having some other comparable characters. *Lasmenia* has sparingly branched conidiophores bearing
conidiogenous cells, whereas in the other three genera, conidiophores are absent, and the conidiogenous cells are formed from inner cells of the locular walls. *Harknessia* differs from the other genera in having conidia with a cellular, unbranched basal appendage which forms from the conidiogenous cells after rhexolytic conidial secession. In *Cymbothyrium*, *Endomelanconium* and *Lasmenia*, however, conidial secession is schizolytic, and their conidia do not have a basal appendage. In addition, *Cymbothyrium* is distinct in having conidiomata with a clypeus comprising of small-celled, dark brown, rather loose pseudoparenchyma (Sutton, 1980).

We are studying the fungi occurring on tropical palm species and have described several species new to science (Yanna, Hyde and Fröhlich, 1997; Yanna, Hyde and Goh, 1998a, b). In this paper, we describe a further species of *Endomelanconium* from the petioles of *Phoenix hanceana* Naud. from Hong Kong. Our species, *E. phoenicicola* sp. nov., is similar to *E. nanum* and *E. pini* in having eustromatic, multilocular conidiomata, cylindrical, hyaline conidiogenous cells and thick-walled, dark brown conidia which are protruding at the base, with a single longitudinal striation. However, it differs from these two species in having longer conidiogenous cells producing conidia which are dorsiventrally globose to broadly-ellipsoidal, and laterally slightly flattened. In *E. nanum* and *E. pini*, however, conidia are pyriform to limoniform and not flattened. The characters of the three *Endomelanconium* species are compared (Table 1), and a key to these species is provided.

**Taxonomy**

*Endomelanconium phoenicicola* Yanna, K.D. Hyde and Goh, sp. nov.

(Figs. 1-14).

*Etymology:* *phoenicicola*, referring to the occurrence of this fungus on *Phoenix*.


*Mycelium* immersed, branched, septate, pale brown, ca 2 μm wide. *Conidiomata* eustromatic, immersed, peridermal to subperidermal, solitary, irregularly multilocular, ca 250 μm diam. *Wall* comprising pale brown, thin-walled *textura angularis*, ca 7 μm, becoming hyaline towards the conidiogenous region. Dehiscence irregular. *Conidiophores* absent. *Conidiogenous cells*, determinate, discrete, cylindrical, tapered slightly towards the apices, hyaline, smooth, thin-walled, formed from the walls of the locules, 14-25 μm high (x̄ = 19 μm, n = 25), occasionally wider towards the base, 2-5
Figs. 1-4. *Endomelanconium phoenicicola*, diagrammatic representation from holotype. 1. Conidiomata on host surface. 2. Section through multilocular conidiomata. 3. Conidia. Note the protruding base and longitudinal striation. 4. Conidigenous cells and developing conidia. Bars: 1 = 200 μm, 2 = 100 μm, 3-4 = 10 μm.

μm wide at the base (\( \bar{x} = 3.25 \) μm, \( n = 25 \)) and 2-4 μm wide at the apex (\( \bar{x} = 2.88 \) μm, \( n = 25 \)). *Conidia* aseptate, dorsiventrally globose to broadly-ellipsoidal, laterally slightly flattened, ellipsoidal, hyaline to pale brown when immature, dark brown when mature, thick-walled, smooth, base often slightly protruding, with a longitudinal striation, 9-11 × 10-12 μm (\( \bar{x} = 10.33 \times 11.23 \) μm, \( n = 25 \)), 6-8 μm thick (\( \bar{x} = 6.63 \) μm, \( n = 25 \)) and 2-3 μm wide at the protruding base (\( \bar{x} = 2.6 \) μm, \( n = 25 \)).


*Other materials examined:* HONG KONG, New Territories, Tai Mo Shan, Twisk, on dead leaves of *Phoenix hanceana* (Arecaceae), 25 July 1998, Yanna (HKU(M) 10539); *ibid.,* 17
Endomelanconium nanum was recorded to coexist with Bulgaria nana Cash and to be its anamorph (Gamundi and Arambarri, 1983). However, a teleomorph is unknown for E. pini or for the new species.

**Key to Endomelanconium species**

1. Conidia pyriform to limoniform, not flattened
   - Conidia distinct dorsiventrally globose to broadly-ellipsoidal, and laterally slightly flattened, 9-11 × 10-12 μm
     - E. phoenicicola

2. Conidiogenous cells cylindrical, slightly attenuated at the apex, 7.9-10.5 × 4.1-4.7 μm; conidia 7.2-10 × 3.8-5.8 μm
   - E. nanum
2. Conidiogenous cells lageniform, distinctly attenuated at the apex, 7-16 × 3-7 μm; conidia 11.5-13.5 × 6.5-7.5 μm
   - E. pini

**Table 1. Synopsis of characters of Endomelanconium species.**

<table>
<thead>
<tr>
<th></th>
<th>E. nanum (Gamundi and Arambarri, 1983)</th>
<th>E. phoenicicola</th>
<th>E. pini (Sutton, 1980)</th>
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</thead>
<tbody>
<tr>
<td><strong>Conidiogenous cells</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>7.9-10.5 μm</td>
<td>14-25 μm</td>
<td>7-16 μm</td>
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<tr>
<td>Width</td>
<td>4.1-4.7 μm</td>
<td>2-5 μm</td>
<td>3-7 μm</td>
</tr>
<tr>
<td>Shape</td>
<td>Cylindrical</td>
<td>Cylindrical</td>
<td>Lageniform</td>
</tr>
<tr>
<td>Colour</td>
<td>Hyaline</td>
<td>Hyaline</td>
<td>Hyaline</td>
</tr>
<tr>
<td><strong>Conidia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>7.2-10 μm long, 3.8-5.8 μm wide</td>
<td>10-12 μm long, 9-11 μm wide, 6-8 μm thick</td>
<td>11.5-13.5 μm long, 6.5-7.5 μm wide</td>
</tr>
<tr>
<td>Shape</td>
<td>Pyriform to limoniform</td>
<td>Dorsiventrally globose to broadly-ellipsoidal and laterally slightly flattened</td>
<td>Pyriform to limoniform</td>
</tr>
<tr>
<td>Colour</td>
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<td>Dark brown</td>
</tr>
<tr>
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<td>0</td>
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<td>Host</td>
<td>Plant debris</td>
<td>Phoenix hanceana</td>
<td>Abies pectinata, A. alba, A. excelsa</td>
</tr>
</tbody>
</table>

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References


