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Ommatomyces, with one new species and one new combination

Y.Z. Wang, M.K.M. Wong and K.D. Hyde*

Centre for Research in Fungal Diversity, Department of Ecology and Biodiversity, The University of Hong Kong, Pokfulam Road, Hong Kong; * e-mail: kdhyde@hkucc.hku.hk


A new species of Ommatomyces is described from senescent culms of Pennisetum purpureum and Thysanolaena maxima collected in Hong Kong. Didymosphaeria pardalina may be an earlier name for Ommatomyces coronatus, however there are several differences between this species and O. coronatus. Until further collections are made we maintain O. coronatus and combine Didymosphaeria pardalina as a third species of Ommatomyces. One of the most important characters of Ommatomyces is the short lacerate germ slits that occur at each end of ascospore and separates it from Cainia species.

Key words: Amphisphaeria, Amphisphaeriaceae, Cainiaceae, graminicolous fungi, new combination, new species.

Introduction

Ommatomyces is a monotypic genus in the Cainiaceae (s.s. Kang et al., 1999) typified by O. coronatus Kohlm., Volkm.-Kohlm. and O.E. Erikss. (Kohlmeier et al., 1995). Its clypeate ascomata are immersed in grass culms and its unitunicate asci are cylindrical with a J+, layered subapical ring. Ascospores are ellipsoidal, brown, bicelled and have short lacerate germ slits at each end, and are surrounded by a mucilaginous sheath (Kohlmeier et al., 1995).

Ommatomyces was introduced and placed in the Amphisphaeriaceae by Kohlmeyer et al. (1995). Recent studies, however, have shown that Ommatomyces coronatus resembles Cainia species as the J+ ascal ring is layered. Most genera in the Cainiaceae also occur on grasses, which is true for Ommatomyces (Kang et al., 1999).

In this study we transfer Didymosphaeria pardalina to Ommatomyces. We also describe and illustrate a new species, Ommatomyces terrestris from two species of grass, Pennisetum purpureum Schum. and Thysanolaena maxima (Roxb.) Kuntze collected in Hong Kong. The differences between Ommatomyces coronatus, O. pardalina and O. terrestris are listed in Table 1.
Materials and Methods

Type specimens were loaned from NY and IMS, while fresh material was collected in Hong Kong. Slides of ascospores, asci and sections of ascomata were mounted in distilled water for observation, microphotography and measurement. Ascus apical rings were stained using Melzer's solution. Sections of ascomata were made on a cryotome and mounted with O.C.T. Compound.

Taxonomy

Key to Ommatomyces species

1. Ascospores 20-25 μm long (x = 22 μm), on Spartina.......................... O. pardalina
1. Ascospores 14-23 μm long (x = less than 20 μm), on other grasses......................... 2

2. Papilla surrounded by white halo, ascospores surrounded by a mucilaginous sheath, a marine species on Juncus .......................................................... O. coronatus
2. Papilla not surrounded by white halo, ascospores with bipolar mucilaginous pads, terrestrial species on other grasses......................................................... O. terrestris

Accepted species


2. Ommatomyces pardalina (Ellis and Everh.) Y.Z. Wang, M.K.M. Wong and K.D. Hyde, comb. nov. (Figs. 1-8)
   = Didymosphaeria pardalina Ellis and Everh., Journal of Mycology 2: 102 (1886).
   = Didymosphaerella pardalina (Ellis and Everh.) Cooke, Grevillea 18: 29 (1889).
   = Microthelia pardalina (Ellis and Everh.) Kuntze, Revisio Generum Plantarum 3: 498 (1898).
   Ascomata immersed beneath blackened clypei on host culm; in section 320-400 μm diam., 325-390 μm high, globose, gregarious, apapillate (Fig. 1). Ostiole periphysate. Peridium 14-18 μm wide, composed of light reddish-brown to hyaline, compressed rows of cells (Figs. 2, 3). Paraphyses narrow, ca. 2 μm in diam., filiform, unbranched. Asci 110-155 x 11-14 μm (x = 125 x 13 μm, n = 15), 8-spored, cylindrical, unitunicate, pedicellate, apically rounded, with a J+, wedge-shaped, subapical ring, 3-4 μm high, 3.5-4.5 μm diam. (Fig. 5). Ascospores 20-25 x 7.5-10 μm (x = 22 x 8 μm, n = 25),
uniseriate, oblong-ellipsoidal, reddish-brown, bicolled, slightly constricted at
the septum, ends with several short lacerate germ slits radiating inwards, up to
2.5-4 μm long, surrounded by narrow mucilaginous sheath (Figs. 4, 6-8).

Material examined: U.S.A., Louisana, Point à la Hache, on Spartina cynosuroides
Roth (as S. polystachya Willd., Gramineae), 17 May 1886, A.B. Langlois (NY 429, HOLOTYPE
of Didymosphaeria pardalina).

Notes: Type material of Didymosphaeria pardalina is not in perfect
condition. The taxon is, however, very similar to Ommatomyces coronatus
as the ascospores have distinctive bipolar lacerate germ slits. It may be that these
taxa prove to be synonymous following further collections, but at present there
are several differences that indicate two separate species are involved. In O.
coronatus a distinctive white halo occurs around the ostiole, ascospores are on
average shorter (17-23 μm), and are surrounded by a mucilaginous sheath
which is extended and pad-like at the ends (Kohlmeyer et al., 1995). Ommatomyces coronatus
is found on Juncus in the intertidal region. In O. pardalina there is no white halo
around the ostioles, ascospores are on average longer and although the material
is not in good condition it appears that a mucilaginous sheath occurs around
the ascospores. Ommatomyces pardalina occurs on dead stems of Spartina, but no mention is made
of the habitat (Ellis and Everhart, 1886). Considering that Spartina cynosuroides (= S. polystachya)
is a marine species (Kohlmeyer and Kohlmeyer, 1979) it is probable that O.
pardalina is also a marine species. Until further collections are made we prefer
to maintain O. coronatus and O. pardalina as separate species.

nov. (Figs. 9-18)

Etymology: terrestris, referring to the habitat, this taxa occurs on terrestrial
grasses.

Ascomata 125-135 μm in diam., 105-125 μm alta, immersa, subglobosa, ostioluta. Asci
120-140 × 8-14 μm, 8-spori, cylindrici, uniseriati, pedicellati, apparatu apicale ca. 2 μm alta,
4 μm in diam. praediti. Ascosporae 14-20.5 × 5.5-8 μm, uniseriatae, oblong-ellipsoidae,
olivacea-brunneae, quttulatae, ad apex cum multi-brevis germen fissurae, cum bipolaris
mucilaginoso praeditae.

Ascomata immersed beneath blackened clypeae on host culm (Fig. 9); in
section 105-125 μm high, 125-135 μm diam., irregularly globose, solitary to
gregarious, papillate (Fig. 11). Papilla erect, tapering, from 125 μm wide near

Figs. 9-18. Ommatomyces terrestris (from holotype). 9. Colony on natural substratum. 10. A
cluster of asci with both mature (darkened) and immature (hyaline) ascospores. 11. Vertical
section through ascoma. Note the presence of clypeus around the neck. 12. Peridium, which
comprises compressed cells. 13. Paraphyses. 14. Asci, with the J+ subapical rings stained with
Melzer’s reagent. 15-18. Ascospores. Note the mucilaginous pads in Figs. 15-16 (arrowed) and
in Figs. 17-18 (spreading in Indian Ink; arrowed). Bars: 9-10 = 100 μm; 11 = 50 μm; 12, 14-18
= 10 μm; 13 = 5 μm.
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Table 1. Comparison of species of Ommatomyces.

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<tr>
<td>Host</td>
<td>Juncus roemerianus</td>
<td>Spartina cynosuroides (as S. polystachya)</td>
<td>Thysanolaena maxima (holotype) Pennisetum purpureum</td>
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<tr>
<td>Habitat</td>
<td>Marine</td>
<td>Probably marine</td>
<td>Terrestrial</td>
</tr>
<tr>
<td>Asci</td>
<td>120-175 × 12-15 μm</td>
<td>110-155 × 11-14 μm</td>
<td>120-140 × 8-14 μm</td>
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<tr>
<td>Ascospores</td>
<td>17-23 × 7-9 μm (x̄ = 19.5 ± 8 μm, n = 96), surrounded by mucilaginous sheath extending at the ends</td>
<td>20-25 × 7.5-10 μm (x̄ = 22 × 8 μm, n = 25), with remnants of a sheath</td>
<td>14-20.5 × 5.5-8 μm</td>
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<td>14-19 × 5.5-6.5 μm</td>
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| Notes               | The size ranges of asci and ascospores of Ommatomyces species on Pennisetum purpureum and Thysanolaena maxima are different from, but overlap with each other (Table 1). Such differences, however, are not considered to separate the two specimens into different species. Ommatomyces terrestris resembles O. coronatus in having similar dimensions of asci and ascospores (Table 1). However, ascospores of O. terrestris have bipolar mucilaginous pads, rather than being enveloped by a
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sheath. The white halo around the ostiole in *O. coronatus* is lacking in those of *O. terrestris*. Moreover, *O. coronatus* appears to be an obligate marine species as it was only found exclusively in the base of the culms of *Juncus* that were consistently submerged in marine waters (Kohlmeyer *et al.*, 1995), whereas *O. terrestris* is found only in the terrestrial habitat associated with culms of *Pennisetum* and *Thysanolaena*.

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**References**


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