

Lectotypification of *Plectocarpon diedertzianum* (Arthoniales)

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Abstract: DIEDERICH, P. & ERTZ, D. 2018. Lectotypification of *Plectocarpon diedertzianum* (Arthoniales). – *Herzogia* 31: 322–326.

Plectocarpon diedertzianum Y.Joshi, Upadhyay & Chandra was described from India from four different parmelioid host genera. The figure illustrating the holotype specimen in the original publication appears to represent heterogeneous elements. Therefore, a re-examination of the holotype specimen was performed and confirmed the presence of two similar but distinct arthonialean lichenicolous species belonging to *Opegrapha melanospila* on *Parmotrema reticulatum* and to a *Plectocarpon* species on *Myelochroa aurulenta*. As a consequence, the name *P. diedertzianum* is lectotypified on the lichenicolous fungus growing on *Myelochroa*.

Zusammenfassung: DIEDERICH, P. & ERTZ, D. 2018. Lectotypifizierung von *Plectocarpon diedertzianum* (Arthoniales). – *Herzogia* 31: 322–326.

Plectocarpon diedertzianum Y.Joshi, Upadhyay & Chandra wurde aus Indien von vier verschiedenen parmelioiden Wirtsgattungen beschrieben. Die Abbildung des Holotypus in der originalen Veröffentlichung scheint heterogene Elemente darzustellen. Deshalb wurde der Holotypus überprüft, und es wurde bestätigt, dass zwei ähnliche, jedoch verschiedene arthoniale lichenicole Pilze vorhanden sind, wovon einer auf *Parmotrema reticulatum* zu *Opegrapha melanospila* gehört und der andere auf *Myelochroa aurulenta* zu einer *Plectocarpon*-Art. Infolgedessen wird der Name *P. diedertzianum* auf den lichenicolous Pilz auf *Myelochroa* lectotypifiziert.

Key words: India, Lecanographaceae, lichenicolous fungi, Parmeliaceae, taxonomy.

The genus *Plectocarpon* (Arthoniales, Lecanographaceae) was revised and monographed by ERTZ et al. (2005), and comprises 37 known lichenicolous species (LAWREY & DIEDERICH 2017). With our current knowledge, all species are strictly host-specific, confined to a single host species or to a few probably closely related hosts (LAWREY & DIEDERICH 2017).

JOSHI et al. (2016) recently described *Plectocarpon diedertzianum* Y.Joshi, Upadhyay & Chandra growing on *Flavoparmelia caperata*, *Myelochroa aurulenta*, *Parmotrema crinitum*, *P. melanothrix*, *P. reticulatum* and *Punctelia subrudecta* in India. The type specimen was reported as growing on *M. aurulenta* and *P. reticulatum*. As this would be one of the rare known species of *Plectocarpon* occurring on several host genera and as the figure illustrating the holotype specimen in the original publication appeared to represent heterogeneous elements, we have re-examined the type.

The holotype consists of four lichen thalli, three belonging to *Parmotrema reticulatum* and one to *Myelochroa aurulenta*. Although the fungi on both hosts are rather similar, both macroscopically and microscopically, they nevertheless represent two distinct species. The fungus on *Parmotrema* is typical *Opegrapha melanospila* Müll.Arg., a widespread and character-

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istic species growing on *Parmotrema* and perhaps other parmelioid genera. The fungus on *Myelochroa* is a real *Plectocarpon*.

The diagnosis of *P. diedertzianum* is rather short: ‘Similar to *Plectocarpon opegraphoideum*, but differs in having 4-spored asci, narrower ascospores ((2.5–)3.0–3.5 µm) and different host’. The ‘4-spored asci’ obviously refer to the material on *Myelochroa*, as the asci of the fungus on *Parmotrema* are mainly 6–8-spored. The ascospore breadth in the more detailed original description differs from that in the diagnosis, and is given as ‘(1.5–)2.50–3.33–5.0(–5.15) µm (n=50)’. In the type material examined by us, ascospores of both species were much broader (see below), although some narrower, probably young ascospores (c. 4 µm broad) were observed in some asci (Fig. 1F). The macroscopical photos in JOSHI et al. (2016) seem to refer to *Myelochroa* (Fig. 1B) and *Parmotrema* (Fig. 1C). The microscopical photos in Fig. 1 cannot be attributed in a convincing way to one of the two taxa present. The ‘*Opegrapha*-type, clavate, (2–)4-spored, (65–)70–90(–100) × 15–20 µm’ asci from the original description may refer to those on *Myelochroa*, as asci of *O. melanospila* are up to 8-spored, but in both species the longest asci observed by us did not exceed 50 µm in length. Also, the hyaline ascospores in the original description refer to the material on *Myelochroa*, as those of *O. melanospila* become brown when mature or overmature.

Following Art. 8.2 (ICN), a type may consist of multiple small organisms. Therefore, the presence of lichenicolous ascomata on several host thalli belonging to different species does not invalidate the name *Plectocarpon diedertzianum*. However, if a type is found to belong to more than one taxon, the name should be lectotypified on one of these taxa (Art. 9.11). Further, Art. 9.14 requests that ‘the name must remain attached to the part that corresponds most nearly with the original description or diagnosis’.

The original description of *P. diedertzianum*, although being based on a mixture of two species, contains mainly characters of the fungus on *Myelochroa*, and a lectotypification on that species is therefore the best decision. This choice is additionally supported by the fact that the species on *Parmotrema* is already described, while the taxon on *Myelochroa* would be left unnamed, in case of a lectotypification on material growing on *Parmotrema*.

Plectocarpon diedertzianum Y.Joshi, Upadhyay & Chandra, in Joshi et al., *Acta Botanica Hungarica* **58**: 258 (2016) (Fig. 1)

Type: India, Uttarakhand, Pithoragarh district, Gangolihat, Futsil Sacred forest, on *Myelochroa aurulenta* colonising *Quercus leucotrichophora*, 3 May 2015, S. Upadhyay, K. Bisht & P. Joshi LF-06/2015 (LWG, fungus on *Myelochroa aurulenta*, lectotypus hic designatus). Note: an isotype deposited in KU (fide JOSHI et al. 2016) has not been examined by us.

Mycobank MB817746 (description), MBT380298 (lectotypification)

Ascomata black, convex, 0.5–0.8 mm diam., developing in the centre of dark brown circular to elongate areas of the thallus, 0.7–1.6 mm diam., single or rarely confluent; galls rather inconspicuous from the outside but visible in section; upper surface of ascomata strongly warted to almost lirelliform; remnants of host cortex sometimes persistent over mature ascomata; fertile perithecia-like loculi soon exposed through an irregular, punctiform or more often elongate opening, giving the appearance of an agglomeration of lirellae-like ascomata; multilocular stroma 125–200 µm thick; sterile stromatic tissue dark brown, K+ blackish (5% KOH solution). Hymenium hyaline to pale brownish, KI+ blue (Lugol’s reactive, after KOH pre-treatment). Paraphyses anastomosing, 1.5–2.0 µm thick, apically not distinctly swollen. Asci clavate, 4-spored, c. 40–50 µm × (8.7–)9.4–12.1(–13.3) µm (n=14; mean ± standard deviation, extremes in parentheses; in K). Ascospores narrowly ellipsoid, (2–)3-septate, slightly constricted at the septa, hyaline, (13.2–)15.6–18.3(–19.5) × (4.2–)4.9–6.0(–6.5) µm, ratio

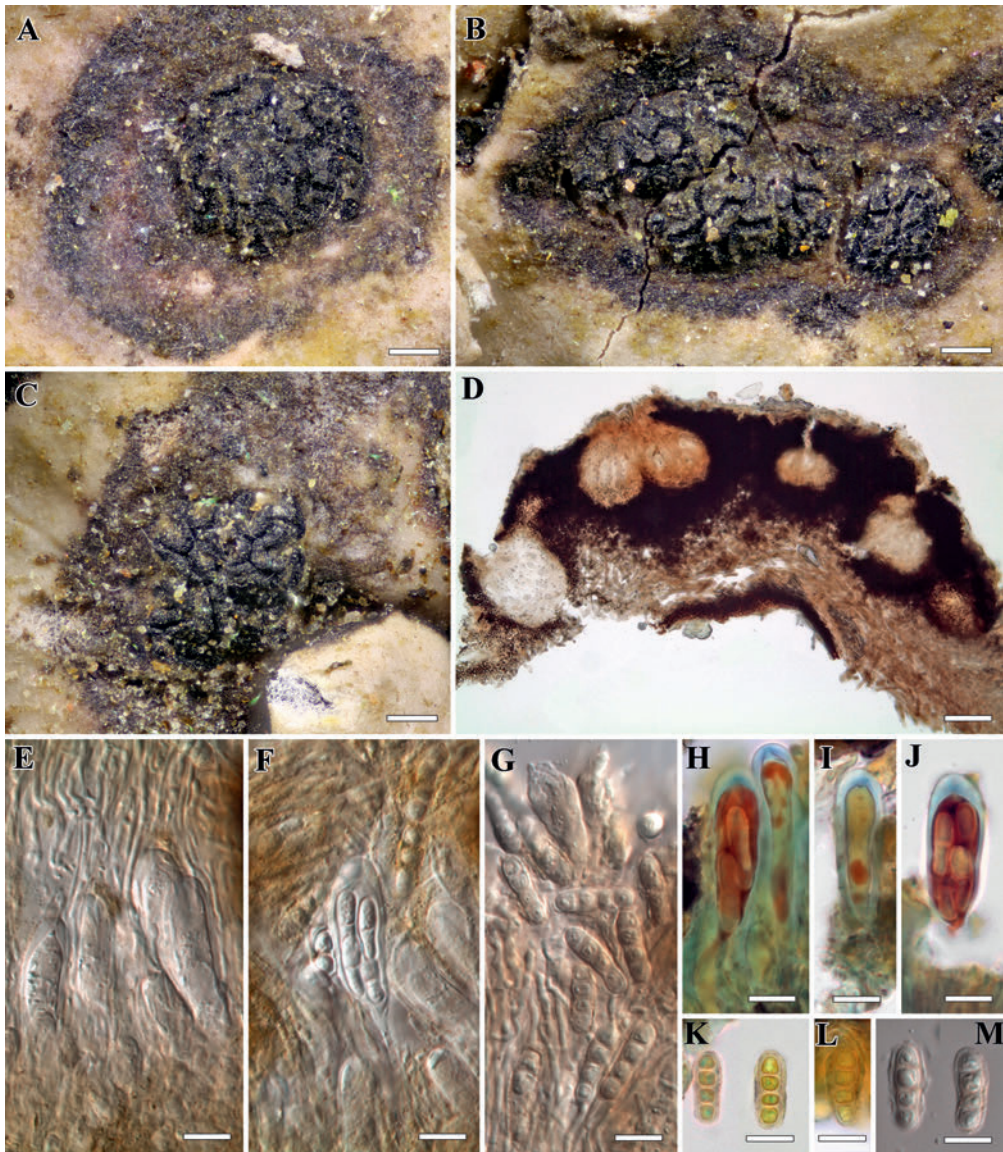


Fig. 1. *Plectocarpon diedertianum* (lectotype, LWG). **A–C.** Ascomatal galls on the thallus of *Myelochroa aurulenta*. **D.** Section through an ascomatal gall (in water). **E–M.** Paraphyses, asci and ascospores (H–L in KI, the others in K). Scale bars: A–C = 200 μ m, D = 50 μ m, E–M = 10 μ m.

length/breadth (2.3–)2.8–3.5(–4.1) (n=30; in K); perispore c. 1 μ m thick in K, hyaline; post-mature ascospores exceptionally becoming brown. Pycnidia not observed.

As the lectotype is relatively reduced, we just prepared three sections from two ascomata, and we observed only a small number of ascospores and asci, some of which were difficult to measure. Consequently, we can only provide a provisional description, and more material on the same host will be needed to better understand the morphological variability of the species.

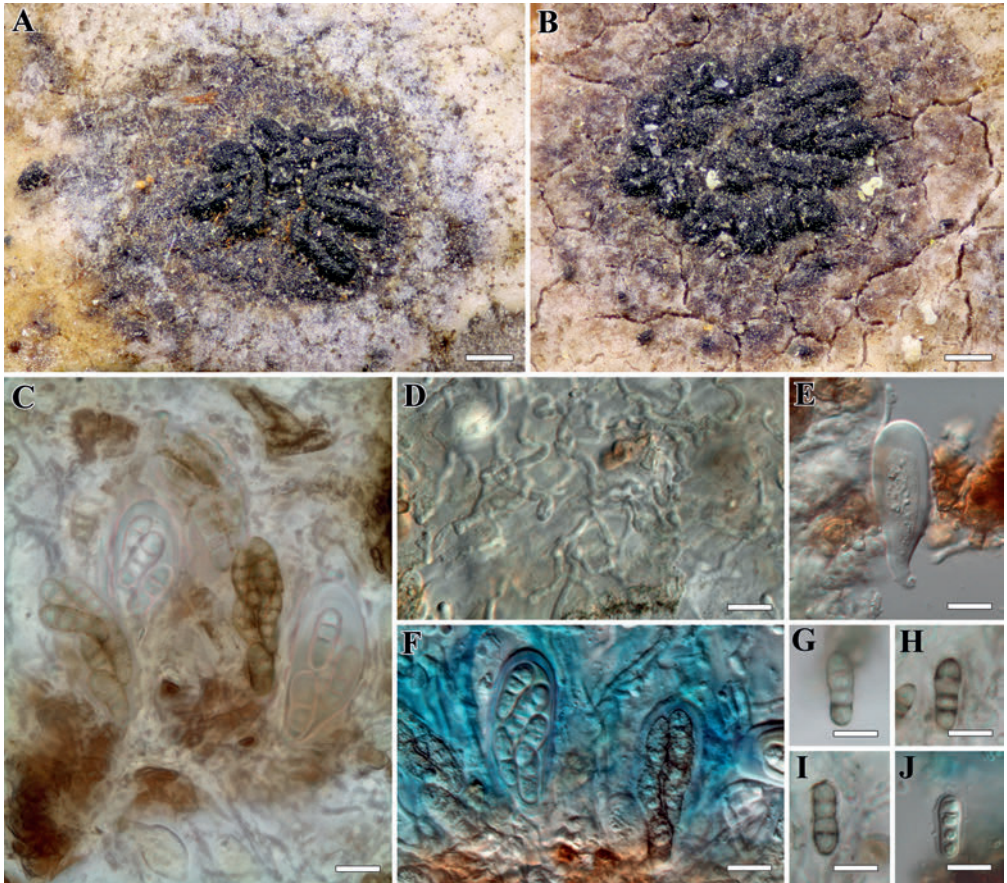


Fig. 2. *Opegrapha melanospila* (in the original holotype of *Plectocarpon diedertianum*, LWG). **A–B.** Ascomata on the thallus of *Parmotrema reticulatum*. **C–J.** Paraphyses, asci and ascospores (F, J in KI, the others in K). Scale bars: A–B = 200 μ m, C–J = 10 μ m.

In the key to *Plectocarpon* provided by ERTZ et al. (2005), *P. diedertianum* would key out close to *P. peltigerae* Zhurb., Ertz, Diederich & Miadl. That species differs, however, by ascomatal galls ‘often dividing into a more or less flat external ring that is usually clearly separated from the more convex central part by a circular depression’, broader asci, $40\text{--}58 \times 12\text{--}19 \mu\text{m}$, longer ascospores, $18\text{--}22 \times 4.5\text{--}6.5(-7) \mu\text{m}$, and a different host-selection, *Peltigera leucophlebia* (ERTZ et al. 2003, 2005).

Opegrapha melanospila, also present in the original holotype, but now excluded from the lectotype, develops on thalli of *Parmotrema reticulatum* (Fig. 2). This species does not induce the formation of galls. Instead, an agglomeration of simple to curved or branched lirellae develop within blackish necrotic spots of 0.5–1.6 mm diam. Paraphyses are strongly anastomosed, 2.0–2.5 μ m thick. Asci are broadly ellipsoid, (4–)6–8-spored, $38\text{--}42 \times (13\text{--})15\text{--}17 \mu\text{m}$. Ascospores are 3-septate, initially hyaline, with a thick perispore best visible in K, soon becoming brown, with a dark brown, verrucose ornamentation, $(14.3\text{--})15.0\text{--}17.4(-18.7) \times (5.0\text{--})5.5\text{--}6.6(-7.4) \mu\text{m}$, ratio length/breadth (2.1–)2.4–3.0(–3.1) (n=20; in K).

Opegrapha melanospila differs from *Plectocarpon diedertianum* by lirellate ascomata (vs. true ascomatal galls), by broadly ellipsoid, mostly 6–8-spored asci, 15–17 μ m broad (vs. clavate, 4-spored asci, 9.5–12 μ m broad), and brown mature ascospores (vs. hyaline ascospores, becoming only exceptionally brown).

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