

## LICHENODIPLISIELLA MAKAREVICHAE, A NEW LICHENICOLOUS COELOMYCETE FROM TAJIKISTAN

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**Abstract:** A new lichenicolous coelomycete, *Lichenodiplisiella makarevichae* S. Kondratyuk & I. Kudratov, *gen. et sp. nov.*, is described, illustrated and compared with the four known members of the genus *Lichenodiplis*.

**Key words:** *Lichenodiplisiella*, *Lichenodiplis*, Coelomycetes, lichenicolous fungi, Tajikistan

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Recent fieldwork in Tajikistan by the second author led to the discovery of a new lichenicolous coelomycete close to species of the genus *Lichenodiplis* Dyko & D. Hawksw. This genus is known so far from four species: *L. hawksworthii* F. Berger & Diederich, *L. lecanorae* Dyko & D. Hawksw., *L. lichenicola* Dyko & D. Hawksw. and *L. poeltii* S. Kondratyuk & D. Hawksw., distributed in both the Northern and Southern Hemispheres (Hawksworth & Dyko 1979; Berger & Diederich 1996; Kondratyuk *et al.* 1996). The newly described fungus is closest to *L. poeltii*, but it differs in a complex of characters, so it is described as a separate genus.

*Lichenodiplisiella* S. Kondratyuk & I. Kudratov, *gen. nov.*

*Genus fungorum similis Lichenodiplis sed differt conidiis 2(–3) septatis, discoloribus conidiomatibus parietis in lateralibus et basalibus, plicatis septis et deficientebus annelationibus in conidigenalibus cellulis.*

*Lichenodiplisiella* differs from *Lichenodiplis* in several features important for lichenicolous coelomycetes: its 2(–3)-septate conidia, the variegated color of the conidiomata wall in the lateral and basal portions, wrinkled septa, the absence of annelations on the conidiogenous cells, and the

absence of remnants of conidiogenous cells as frills around the base of the conidia (Fig. 1).

TYPE: *Lichenodiplisiella makarevichae* S. Kondratyuk & I. Kudratov (see below).

The genus differs from the members of the genus *Lichenodiplis* in having blackish walls only in the lateral portions and hyaline walls in the basal portions. The conidiogenous cells and conidioma walls are poorly delimited from the host tissue at the base of the conidiomata.

It should be emphasized that more than 50% of the conidia examined were 2- or 3-septate, while 1-septate conidia are typical and diagnostic for the genus *Lichenodiplis*. 1-septate conidia are found only as young conidia in *Lichenodiplisiella makarevichae*.

All species of the genus *Lichenodiplis* have very straight septa (see illustrations in Hawksworth & Dyko 1979). However, the conidia of *Lichenodiplisiella makarevichae* have distinctly wrinkled septa, and this is especially typical for 2- and 3-septate conidia (Fig. 1A).

Conidial bases are very narrow in *Lichenodiplisiella makarevichae* and also atypical for members of the genus *Lichenodiplis*. Furthermore, there are no annelations on the conidiogenous cells in *Lichenodiplisiella makarevichae* as can be

expected in *Lichenodiplis*, nor are there remnants of conidiogenous cells as frills around the base of the conidia.

***Lichenodiplisiella makarevichae*** S. Kondratyuk & I. Kudratov, *sp. nov.* (Fig. 1)

*Fungus lichenicola similis* *Lichenodiplis poeltii* sed differt conidiis majoribus, 15–18(–21) × (3.0–)3.5–4.5 μm et 1–2(–3) septatis.

Fungus lichenicolous, forming grey-blackish conidiomata in apothecia of host, sometimes aggregated in regular circles. Conidiomata pycnidial, characteristically aggregated in groups or arising singly and scattered, immersed initially but becoming erumpent and easily distinguished by a whitish or whitish-grey mass of conidia 45–75

(–90) μm in diameter on disc of apothecia of the host; unilocular, globose or broadly ellipsoid, greyish black, 90–120(–150) μm in diameter; walls hyaline at basal portion and blackish grey at lateral part, 4.5–7.6 μm thick, composed of 3–4 layers of thick-walled pseudoparenchymatous cells forming a 'textura angularis'; a well-defined ostiole is lacking; conidiomata open by disintegration of part of the upper wall to release the conidia. Conidiophores absent. Conidiogenous cells narrowly cylindrical to lageniform, lining the whole pycnidial cavity, percurrently proliferating (?), discrete, hyaline to pale greyish, smooth-walled, (5.0–)6.0–7.0(–9.5) × (3.0–)4.5–5.0 μm. Conidia produced holoblastically, narrowly obpyriform to cylindrical, sometimes slightly curved, pale greyish, smooth-walled, 1–2(–3) septate, septa often wrinkled, apex obtuse, base truncate, 15–18(–21) × (3.0–)3.5–4.5 μm.

TYPE: TAJIKISTAN. NORTH TAJIKISTAN, S slope of Kurama Ridge, Noda'k Valley, Anduzy Kalon locality, on twigs of *Juniperus zeravschanica* Kom., alt. 1800–2000 m, on apothecia of *Teloschistes brevior* (Nyl.) Vain., growing together with *Physcia biziana* (A. Massal.) Zahlbr., 18 July 1987, I. Kudratov 9776 (HOLOTYPE: KW).

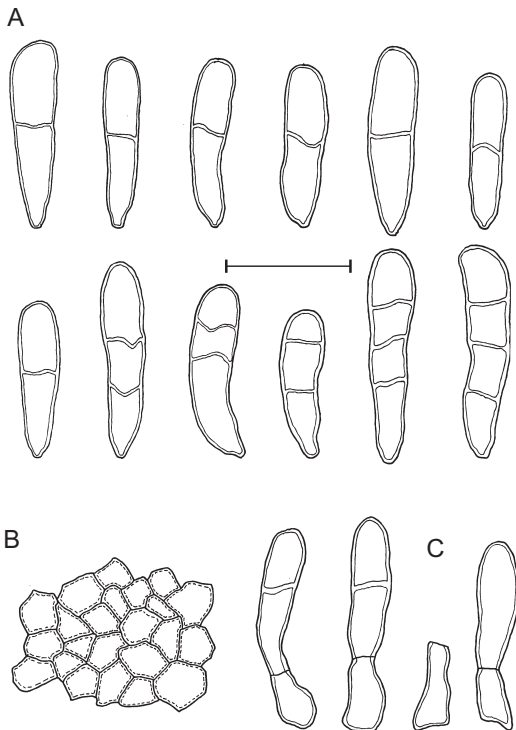
HOST: *Teloschistes brevior* (Nyl.) Vain. (apothecia).

ETYMOLOGY. Named in honor of Professor Maria F. Makarevich, eminent Ukrainian lichenologist.

DISTRIBUTION. Known so far only from the type collection from Tajikistan.

*Lichenodiplisiella makarevichae* differs from all known species of the genus *Lichenodiplis* (*L. hawksworthii*, *L. lecanorae*, *L. lichenicola*, *L. poeltii*) in having longer conidia with 1–2(–3) septa, and in its conidiomatal structure (see above).

Closest to the newly described *Lichenodiplisiella makarevichae* is *Lichenodiplis poeltii* growing on *Xanthoria parietina* (L.) Th. Fr. and *X. ligulata* (Körb.) P. James, which has much smaller and narrower conidia (8–)9–12 × (2.0–)2.5–3.0 (–3.5) μm and is known so far only from Australia (Kondratyuk 1996, 2002). The other species of the genus



**Fig. 1.** *Lichenodiplisiella makarevichae* S. Kondratyuk & I. Kudratov, *gen. & sp. nov.* A – conidia, B – textura of conidiomata wall, C – conidiogenous cells with young conidia. Scale bar = 15 μm. All drawn from the type (*I. Kudratov* 9776, holotype, KW).

*Lichenodiplis* differ from *Lichenodiplisiella makarevichae* in having smaller conidia, as well as different hosts and distribution. *Lichenodiplis hawksworthii* growing on *Pertusaria pustulata* (Ach.) Duby has rather wide, dark brown conidia  $8.5\text{--}13.0 \times 4.5\text{--}5.5 \mu\text{m}$ , and is known from Europe. *Lichenodiplis lecanorae* has a wide host range [mainly on *Caloplaca* spp. (ca 15 species), *Lecanora* spp. (ca 10 species) and *Pertusaria* spp. (ca 5 species), and on thalli genera including *Diploschistes*, *Evernia*, *Imshaugia*, *Lecania*, *Lecidella*, *Lecidea*, *Micarea*, *Mycoblastus*, *Ochrolechia*, *Schismatomma*, *Tephromela* and others], but may not be homogenous (Kocourková 2000); it is characterized by very small and narrow ( $4.0\text{--}7.5 \times 2.0\text{--}3.2 \mu\text{m}$ ), pale conidia. *Lichenodiplis lichenicola* Dyko & D. Hawksw. on *Rinodina* spp. has rather wide, pale brown conidia,  $9.5\text{--}13.0 \times 4.0\text{--}4.5 \mu\text{m}$ .

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