Stromatopogon geminatum spec. nova, a further lichenicolous fungus growing on Usnea

JAVIER ETAYO
Navarro Villolslada 16 - 3º dcha.
E-31003 Pamplona, Spain
e-mail: jetayosa@pnte.cfnavarra.es

OTHMAR BREUSS
Naturhistorisches Museum Wien
Botanische Abteilung
Burgring 7
A-1010 Wien, Austria
e-mail: obreuss@bg9.at

Received 20. 6. 2004, in revised version 17. 8. 2004

Key words: Lichenicolous fungi, Coelomycetes, Stromatopogon, S. geminatum spec. nova. - New species. - Mycoflora of North America.

Abstract: Stromatopogon geminatum, a parasite on the lichen Usnea, is described as new.

Zusammenfassung: Stromatopogon geminatum wird als Parasit auf Usnea neu beschrieben.

The name Stromatopogon baldwinii ZAHLBR. (ZAHLBRUCKNER 1897) was introduced for a lichen similar to Usnea with gall-like deformations including black spherical perithecia. Type material was studied by DIEDERICH (1992) who demonstrated Stromatopogon to be a gall-forming lichenicolous fungus on an Usnea thallus and with two types of conidia produced within the same conidioma. The name was lectotypified on the macroconidial element. Known samples of this species are from Hawaiian Islands and Tasmania. Recently, DIEDERICH & SÉRUSIAUX (2003) described a European species of the genus growing on Cladonia: S. cladoniae, which differs - besides infesting a different host - in having smaller conidiomata and smaller macro- and microconidia.

During recent field studies in North America, the second author collected a new representative of the genus that is well characterized by its odd conidia. It is described as new below.

The specimen has been studied using the standard microscopical techniques. All drawings and measurements have been made from material mounted in water.

Stromatopogon geminatum ETAYO & BREUSS, spec. nova (Fig. 1)

Diagnosis latina: Fungus lichenicola thallo Usneae infestans, non cecidioformans. A Stromatopogone baldwinii macroconidiis minoribus, 4-cellulis, bipartitis, leptodermaticis differt.
**Typus:** USA, Oregon, Coos Co., vicinity of Eel Creek Campground, Oregon Dunes National Recreation Area, on *Usnea* spec., elev. 4-50 m s. m., 43°35’N, 124°11’W, 13. 8. 2000, O. BREUSS no. 17.459 (LI - holotype, hb. ETAYO - isotype).

**Characters**

Conidiomata: pycnidial, immersed in blackish spots on the thallus (cortex) of *Usnea*, 100-130 μm in diam., black, subbspherical to ellipsoid; ostiole absent, the conidiomata opening irregularly by breaking of the upper part of the wall. Wall 8-12 μm thick, dark brown, composed of several rows of gelatinized cells.

Conidia: Two kinds of conidia are produced in the same conidioma, but from separate regions of the inner conidiomatal wall.

**Macroconidial morph:** predominating; conidiophores absent, conidiogenous cells lining the conidiomatal cavity, ampulliform to subcylindrical, brown with verrucose outer wall in basal part, more or less hyaline in upper, 6-8 x 4-5 μm; conidia holoblastic, arising singly, not catenate, filling the conidiomatal cavity; each conidium looking like two ellipsoidal 1-septate conidia glued together at different height (Fig. 1A), composed of 4(-5) cells, irregularly ellipsoidal, apically and basally acute, hyaline, thin-walled, smooth, 9-14(-17) x 6-7.5 μm.

**Microconidial morph:** rarer, developed in a small part of the conidiomatal wall, conidiophores present, similar to the conidiogenous cells of macroconidia; conidiogenous cells usually terminal, strongly tapering towards the apex, hyaline, smooth, sometimes with one annellation, 11-17 x 2.5-3.5 μm; conidia holoblastic, arising singly, not catenate, ellipsoidal to subcylindrical, simple, hyaline, smooth, thin-walled, 2.5-4.5 μm.

Vegetative hyphae: abundant, brown, with extracellular pigment.

**Etymology:** the name *geminatum* refers to the odd conidia that look like two uniseptate conidia glued together.

**Remarks**

*Stromatopogon geminatum* is a second species growing on *Usnea* thalli which differs in several important characters from *S. baldwinii*.

The most characteristic feature of *Stromatopogon geminatum* as compared to *S. baldwinii* is the shape of the conidia. In the latter species, the conidia are composed of 2-7 cells, spherical or ellipsoidal to obpyriform, rounded at apices, thick-walled, 11-20 x 6-15 μm (DIEDERICH 1992). In *Stromatopogon geminatum* however, the conidia invariably look like formed by two conidia glued together at different heights, they have acute ends, and are thin-walled and smaller, 9-14(-17) x 6-7.5 μm. Although we have not studied the type of *S. baldwinii*, illustrations in DIEDERICH (1992) show without doubt a different kind of conidia in that species. Furthermore, in *Stromatopogon geminatum* the conidiomata are dispersed or aggregated on the *Usnea* thallus without forming apparent galls, on black dots due to the abundant brown vegetative hyphae of the fungus. Sometimes they grow on small galls, apparently of *Biatoropsis usnearum* RÄSANEN. DIEDERICH (1992) does not comment on the possibility that the galls of *S. baldwinii* might be those of *Biatoropsis usnearum*, but there is evidence that the fungus produces its own galls. Different sizes of the microconidia, different conidiogenous cells, and different distributions also support the distinctiveness of the two closely related species.
Ecology and distribution

*Stromatopogon geminatum* is known only from the type locality in Oregon (USA), where it was found growing on *Usnea* spec.

We thank Paul Diedrich (Luxembourg) for reviewing the manuscript. The second author thanks Bruce McCune (Corvallis) for the excellent organization of the field trip after the Botany 2000 Congress in Portland, Oregon, during which the new species was found.

References

