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Clitocybe dryadicola (J. Favre) Harmaja – A new species for Poland and the Carpathians recorded in Tatra mountains

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Résumé – *Clitocybe dryadicola* (J. Favre) Harmaja, une espèce montagnarde bien connue des Alpes, est rapportée pour la première fois des Carpates (dans les Tatras polonaises). C'est également un taxon nouveau pour le territoire de la Pologne. Cette découverte élargit considérablement l'aire de distribution connue de ce champignon et apporte une confirmation importante de son caractère d'espèce alpine européenne attachée aux communautés de *Dryas octopetala*.

Clitocybe dryadicola / Dryas octopetala / Carpates / Tatras / Pologne

Abstract – *Clitocybe dryadicola* (J. Favre) Harmaja, a mountain fungus well known from the Alps is reported for the first time from Carpathians (Polish Tatra Mts. area). This record is the first one for Poland and broadens considerably the known distribution area of the species. It is a confirmation of its character as European alpine species attached to *Dryas octopetala* communities.

***Clitocybe dryadicola* / *Dryas octopetala* / Carpathians / Tatra Mts / Poland**

CLITOCYBE DRYADICOLA (J. FAVRE) HARMAJA

= *Clitocybe rivulosa* (Pers.: Fr.) Kumm. var. *dryadicola* J. Favre
= *Clitocybe candicans* (Pers.: Fr.) Kumm. var. *dryadicola* (J. Favre) Lamoure

MACROSCOPIC AND MICROSCOPIC DESCRIPTION

Cap convex, 2-3 cm diam., whitish-ivory to cream-coloured, shiny, margin incurved, not translucently striate. Gills cream-coloured, crowded (total amount of lamellae in pileus: L = 47-50), narrow (0.2-0.3 cm), shortly decurrent. Stem 2-3 × 0.2-0.6 cm, concolourous with cap, cylindrical to somewhat clavate; apex covered with whitish hairs. Flesh thin, odourless, taste mild. Spores broadly ellipsoid, hya-

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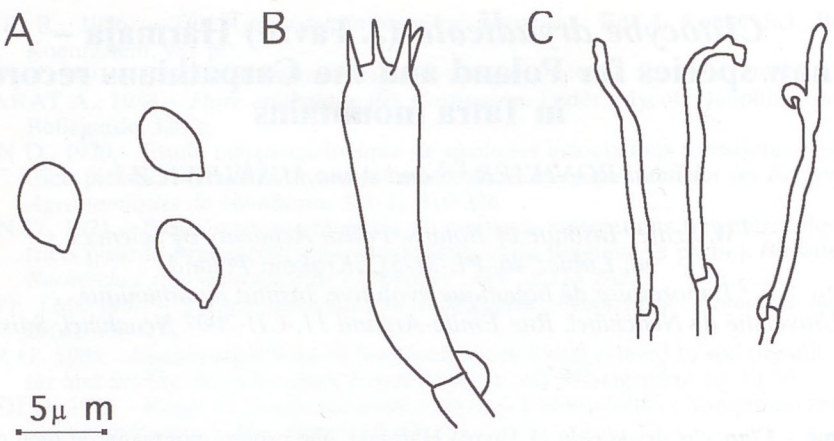

Fig.1. *Clitocybe dryadicola* from Tatra Mts. A) Basidiospores, B) Basidium with basal clamp, C) Hyphal ends of the cortical layer of the stipe apex.

line, smooth, 4.8-5.4 × 2.4-3.6 mm, Q: 1.4-2. Basidia cylindrical, 24-27,6 × 4,8-6,0 mm, with 4 sterigmata and basal clamp. Cystidia absent. Hyphal ends of the cortical layer of the stipe apex sinuous. Septa with clamps (Fig. 1).

SITE LOCATION

Tatry Zachodnie (Western Tatra Mts., Western Carpathians), Przełęcz Między Kopami Pass, 49°15'17"N, 20°00'20"E, 1550 m. a.s.l., subalpine calcareous meadow with *Dryas octopetala* (a patch amongst dwarf pine shrubs), 26 May 1997.

Specimens are deposited in the Herbarium of Polish Academy of Sciences (Cracow) – KRAM F51170.

DISCUSSION

This fungus is described by Favre (1955) from the Swiss National Park, as *C. rivulosa* var. *dryadicola*. Based on the morphological observations and on interfertility tests of mycelia between *C. candicans* and the taxon of Favre, the described var. *dryadicola* was recombined as a variety of *C. candicans* (Lamoure 1965). Taking into account its important differences, especially in ecology (*C. candicans* occurs in deciduous forests), the taxon was finally considered as a separate species by Harmaja (1976). This fungus is very well characterised by its habitat. It seems to be strongly attached to the European alpine/arctic zone. It grows abundantly in French, Italian and Swiss Alps (Favre 1955, Lamoure 1965, 1972, Senn-Irlet 1986), was also recorded in German Alps (Bresinsky & Schmid-Heckel 1983, Schmid-Heckel 1985), mountains and arctic zone of Scandinavia (Lamoure 1965, 1972, Gulden & Jensen 1988, Hansen & Knudsen 1992), Greenland (Lange 1957). In Alps it was found as high as 2600 m. a.s.l. (Favre 1955). It occurs in the alpine meadows; all the authors underline its constant connection to the presence of *Dryas octopetala*, an ectomycorrhizal alpine dwarf shrub. *Clitocybe* ssp. associated with

Dryas octopetala are considered as not mycorrhizal. Their occurrence close to *Dryas octopetala* can be probably explained by a specific nutritional dependence on some litter components (Debaud 1987). A record of *C. dryadicola* in the lower parts of Bavaria, amongst *Dryas* (Bresinsky 1997), particularly supports the standpoint, that this fungus distribution is determined much more by the presence of *Dryas* than by any specific climatic constrains of alpine/arctic environment.

A few other species of *Clitocybe* also appear in such kind of habitat. Among them, *C. dryadicola* is the most similar to *C. gracilipes* Lamoure (also not reported from Carpathians) and differs from it by slightly narrower spores, not hygrophanous and brighter cap, darker and more crowded gills and the shape of hyphal ends of the cortical layer of the stipe (Lamoure 1972, Breitenbach & Kränzlin 1991). Bresinsky & Schmid-Heckel (1983) expose the narrower and more ellipsoid shape of spores as the best character to distinguish these taxons, which is confirmed by the Carpathian specimens. However, the spore size is not always a reliable character as some specimens of *C. dryadicola* were reported to have intermediate spores (Schmid-Heckel 1985). The author claimed in this case the usefulness of cultures and observations of fresh material for an unambiguous determination.

Clitocybe dryadicola is a new species for the territory of Poland and – what is particularly interesting – it was never found in the whole Carpathian range before. There are no reports from either Polish, Slovakian or Ukrainian part of Carpathians (Gumińska, unpublished data, Lizoň & Bacigálová 1998, I. Dudka and M. Prydiuk, personal communication). It is not included in the checklist of Romanian fungi, too (Bontea 1986), and was not reported from Romanian Carpathians till now (A.-M. Csergo, personal communication). In the Polish site, the fungus habitat resembles exactly those described in the Alps. This new record is very important for the global distribution pattern of this interesting alpine fungus, as it extends its known occurrence area to the Carpathians – one of three most important elements of European orogenic system. The appearance of *Clitocybe dryadicola* within the Carpathian part of *Dryas octopetala* distribution range strongly confirms the ecological and biogeographical status of the species as an European taxon attached to *D. octopetala*. Further investigations should be undertaken to reveal the character of its chorology in this part of Europe.

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