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FIRST RECORD OF *MARASMIUS LIMOSUS* AND *PHOLIOTA CONISSANS* (BASIDIOMYCOTA) IN BULGARIA

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Abstract. The paper provides information on the first finding of *Marasmius limosus* Quél. and *Pholiota conissans* (Fr.) M. M. Moser in Bulgaria. Both fungi were found as saprotrophs on decaying leaves and stems of *Typha angustifolia* L. in the karstic swamp Dragomansko Blato. Morphological data obtained by light microscopy are provided for both species. The easy recording of both species in the swamp in the middle of October allows the suggestion for further autumn searching for macromycetes in wetlands.

Key words: Dragomansko Blato, karstic swamp, monocot saprotrophs, *Typha angusitifolia*.

Marasmius limosus Quél. and *Pholiota conissans* (Fr.) M. M. Moser (Syn. *Pholiota graminis* (Quél.) Singer) are among macromycetes which can grow on wetland monocots such as *Carex, Cyperus, Deschampsia, Eleocharis, Juncus, Molinia, Phragmites, Scirpus* and *Typha* (Redhead 1981). Therefore these fungi are spread in different wetlands throughout the North Temperate Zone (Redhead 1981; Hansen & Knudsen 1992; Bas et al. 1995, 1999). Although the surface of Bulgarian non-lotic wetlands is more than 10^5 ha and many data on their biodiversity

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are available (Stoyneva & Michev 2007b), their macromycetes are very poorly studied and need further attention (Gyosheva 2007a). Quite scarce are the data on macromycetes on non-lotic wetland monocots in Bulgaria. Barsakoff (1929) reported the ascomycete *Disciotis venosa* (Pers.) Arnould (Syn. *Peziza venosa* Pers.) on stems of *Schoenoplectus lacustris* (L.) Palla (Syn. *Scirpus lacustris* L.) from the swamp Dragomansko Blato and later on Gyosheva (2007b) included *Mycena typhae* (Schweers) Kotl in the species list for the swamp Gorno Boyansko Blato. Recently *Mycena tubarioides* (Maire) Kühner was published from a dry stem of *Typha latifolia* L. and from dead stems of *Carex* spp. and *Juncus* spp. (Gyosheva et al. 2012; Ganeva & Roussakova 2015). The present paper provides new data on the macromycetes which develop on wetland monocots in the karstic swamp Dragomansko Blato (IBW0012 in Stoyneva & Michev 2007a).

Barsakoff (1929) visited the swamp Dragomansko Blato on 15th September 1928. The author of the present article inspected the same wetland for macromycetes 87 years later, on 18th October 2015. Then two new for Bulgaria species were found on decaying parts of *Typha angustifolia* L.: *Marasmius limosus* Quél. and *Pholiota conissans* (Fr.) M. M. Moser. Their basidiomata were collected for further investigations by Olympus BX53 microscope on non-permanent slides. The photos were taken by Olympus DP72 camera. Fungal names follow the Index Fungorum. The collected specimens are kept in the Mycological Collection of the Department of Botany of Sofia University "St. Kliment Ohridski".

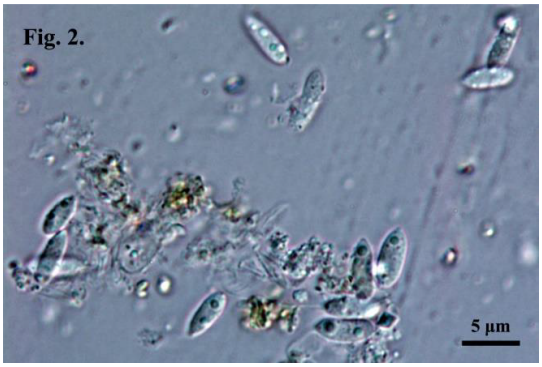
Below morphological data obtained by light microscopy (LM) on both new species are provided:

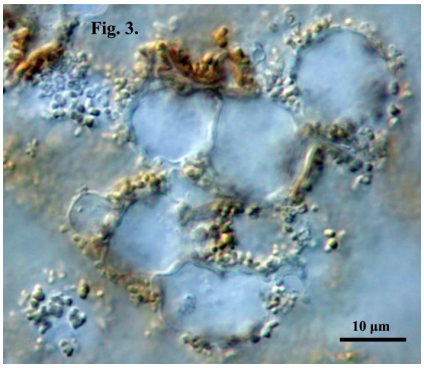
***Marasmius limosus* Quél.**

Pileus was 0.8–3.5 mm in diameter, convex, beige in colour with central umbonate cinnamon brown disc (**Fig. 1**). Lamellae were 6 to 9, broadly adnate, white in colour. Stipe was 0.1–0.2 mm wide and 15–25 mm long, dark brown to whitish at the apex, smooth and shining (**Fig. 1**). Spore print was white. Basidiospores were 6–8 x 3–4.5 µm, ellipsoid (**Fig. 2**). The pileipellis elements were broadly clavate, 12–19 µm in diameter and covered by numerous warts, yellow ochre in colour (**Fig. 3**). Cheilocystidia were 8.5–10 x 14–16 µm covered by warts similar to elements of pileipellis.

Fig. 1. Basidiomata of *Marasmius limosus* scattered on a dead leave of *Typha angusitifolia*, collected from the karstic swamp Dragomansko blato.

The basidiomata of M*arasmius limosus* were found only on a single dead leave of a cattail (*Typha angusitifolia* L.; **Fig. 1**).



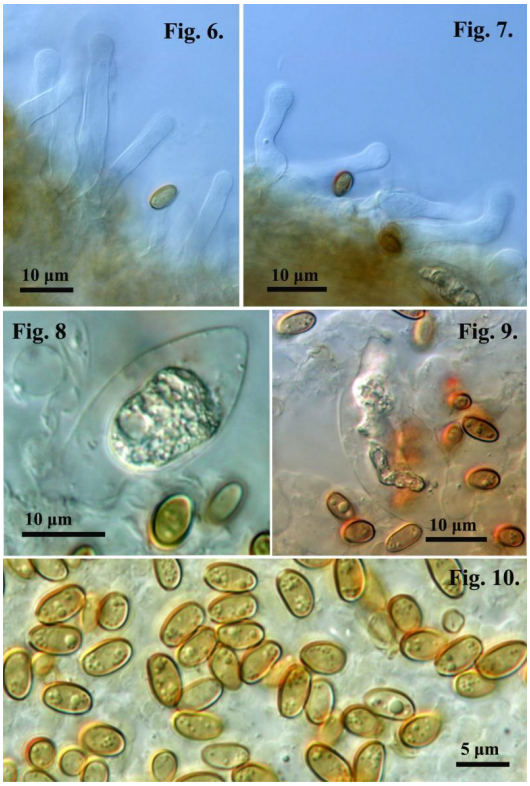


Figs. 2–3. *M. limosus*: 2 – Basidiospores, 3 – Elements of pileipellis covered by yellow ochre warts

***Pholiota conissans* (Fr.) M. M. Moser** (Syn. *Pholiota graminis* (Quél.) Singer)

Pileus was 15–50 mm in diameter, convex to plano-convex with age, at the beginning pale yellow ochre in colour then with reddish brown center, slightly viscid, with appressed-fibrillose scales, and slightly appendiculated margin (**Fig. 4**). Lamellae were adnate to emarginate, young pale yellow-brown then red-brown in colour (**Fig. 5**). Stipe was 20–60 x 2–4 mm, cylindrical, pale yellow at the beginning, later becoming red-brown from base upwards (**Figs. 4–5**). Cheilocystidia were 25–30 x 4–5 µm, cylindrical to lageniform, subcapitate to capitate, smooth, and colourless (**Figs. 6–7**). Chrysocystidia were 25–30 x 10–14 µm, broadly fusoid with pale yellowish content (**Figs. 8–9**). Spore print was red-brown in colour. Basidiospores were 5–6.5 x 3–4 µm, ovoid, with smooth brownish wall and distinct germ pore (**Fig. 10**).

Figs. 4–5. Basidiomata of *Pholiota conissans* on decaying stems of *Typha angusitifolia* L., collected from the karstic swamp Dragomansko Blato.



Figs. 6–10. *Pholiota conissans*: 6–7 – Cheilocystidia, 8–9 – Chrysocystidia, 10 – Basidiospores.

Basidiomata of *Pholiota conissans* were scattered on decaying stems of *Typha angusitifolia* in many places in the swamp (**Figs. 4–5**).

The both newly recorded fungal species were saprotrophic on dead leaves and stems of *Typha angusitifolia*. The decaying mass of these plants is a good developing source for many saprotrophic macromycetes species (Redhead 1981, 1984). Taking these considerations into account together with the fact that both species discussed here were easily detected in the middle of October, it is possible to suggest conducting of future investigations of macromycetes in Bulgarian wetlands during the autumn season when the overground part of wetland monocots is decomposed.

CONFLICT OF INTERESTS

The author declares that there is no conflict of interests regarding the publication of this article.

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