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Psathyrella typhae, a new macrofungus record for Turkey

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Abstract: The basidiomycete species *Psathyrella typhae* (Kalchbr.) A.Pearson & Dennis, was given as new record for Turkey. A brief description of the species is provided together with its photographs related to its macro and micromorphology.

Key words: Biodiversity, new record, *Psathyrellaceae,* taxonomy, Turkey

Psathyrella typhae, Türkiye için yeni bir makromantar kaydı

Öz: Bir bazidiyomiset türü olan *Psathyrella typhae* (Kalchbr.) A.Pearson & Dennis, Türkiye için yeni kayıt olarak verilmiştir. Türün kısa deskripsiyonu, makro ve mikromorfolojisine ilişkin fotoğrafları ile birlikte verilmiştir.

Anahtar kelimeler: Biyoçeşitlilik, yeni kayıt, *Psathyrellaceae,* taksonomi, Türkiye

Introduction

Psathyrella (Fr.) Quél. is a genus of *Psathyrellaceae* (Kirk et al., 2008). The members of the genus have a saprotrophic habit and mainly characterized by a membraneous, hygrophanus, straight margined pileus with a cellular pileipellis composed of ellipsoid more or less rounded cells, reddish-brown to brownish-black spore deposit, smooth or rarely granulose basidiospores. Most species of the genus are thought to be cosmopolitan and grow on soil or wood, while some grow on dung or other substrates (Kits van Waveren, 1985; Vašutová, 2008; Seok et al., 2010; Yan and Bau., 2018).

Yan and Bau (2018) mention about the existance of approximately 500 species of the genus while Index Fungorum presents 1037 records, 637 of which are confirmed species (Index Fungorum, 2019).

Though 50 members of the genus have so far been reported from Turkey (Sesli and Denchev, 2014; Güngör et al., 2014, 2015; Demirel and Koçak, 2016), the current checklists (Sesli and Denchev, 2014; Solak et al., 2015) and the latest contributions (Işık and Türkekul, 2017; Kaşık et al., 2017; Öztürk et al., 2017; Uzun and Acar, 2018; Sadullahoğlu and Demirel, 2018; Sesli, 2018; Keleş, 2019; Acar et al., 2019; Özkazanç and Yeşilbaş Keleş, 2019; Türkekul and Işık, 2019) indicate that *Psathyrella typhae* has not been reported before.

The study aims to make a contribution to Turkish mycobiota.

Materials and methods

The macromycete samples were collected from central district of Karaman province in 2016. The fruit bodies were photographed in the field and necessary morphological and ecological characteristics were recorded. Then the specimens were transferred to the fungarium within paper bags. Investigation related to its microscopy were carried out under a Nikon Eclipse Ci trinocular light microscope by mounting the specimen in water, Congo red and Melzer's reagent. The samples were identified by comparing the obtained data with Boudier (1897), Kotlaba (1952), Redhead (1979), Moser (1983) and Breitenbach and Kränzlin (1995). The specimens are kept at Karamanoğlu Mehmetbey

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Results

Basidiomycota R.T. Moore

Psathyrellaceae Vilgalys, Moncalvo & Redhead

Psathyrella typhae (Kalchbr.) A. Pearson & Dennis

Syn: [*Agaricus typhae* Kalchbr., *Drosophila typhae* (Kalchbr.) Romagn., *Pilosace typhae* (Kalchbr.) Kuntze, *Psathyra typhae* (Kalchbr.) Sacc., *Psathyra typhae* var. *iridis* Boud., *Psathyrella typhae* f. *acori* J. Veselský, *Psathyrella typhae* var. *bispora* Kits van Wav.]

Macroscopic and microscopic features: Pileus 8-16 mm in diameter, hemispherical when young, convex to almost plane when mature, some slightly umbonate, dull, hygrophanous, pale brown to greyish brown with a darker center, margin acute and slightly crenate. Flesh thin, taste mild, odour insignificant. Lamellae ochraceous to light brownish or brown, adnexed. Stipe 8-18 × 0.7-1.7 mm, cylindrical, slightly enlarged towards the base, hollow, fragile, generally whitish above, light to greyish brownish below, finely tomentose especially towards the base (Figure 1). Basidia 15-29 × 9-13 µm, 4-spored. Cheilocystidia 20-60 × 8-18 µm. Basidiospores 9-12.5 × 5-7.5 µm, ellipsoid, oil drops visible especially in Congo red, germ pore indistinct, some with tiny apiculus, brownish (Figure 2).

Ecology: *Psathyrella typhae* was reported to grow on dead parts of various aquatic plants, especially *Typha* L. species (Redhead, 1979; Breitenbach and Kränzlin, 1995).

Figure 1. Basidiocarps of *Psathyrella typhae*.

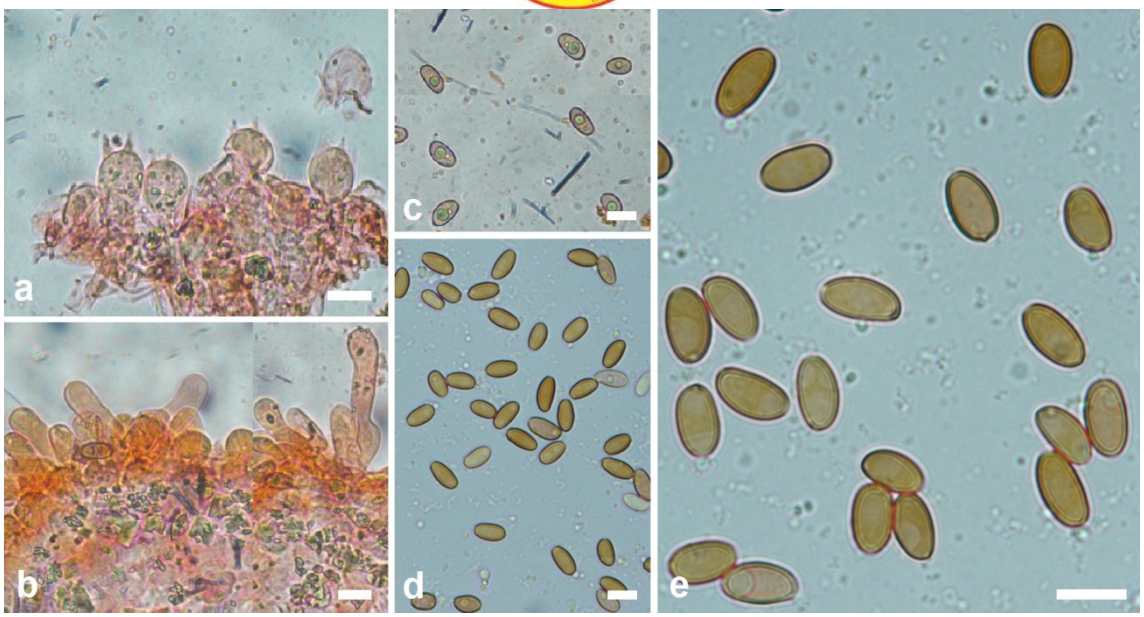

Figure 2. Basidia (a), cheilocystidia (b) and basidiospores (c-e) of *Psathyrella typhae* (bars 10 µm) (a-c in Congo red; d,e in Melzer)

Specimen examined: Karaman, Dereköy village, on decaying remains of *Typha latifolia* L. in muddy soil, 37°12′N-33°26′E, 1100 m, 09.05.2018, K.12952.

Discussions

Psathyrella typhae was given as new record for the mycobiota of Turkey. General characteristics of the specimen, studied here, are in aggreement with those given in literature (Redhead, 1979; Breitenbach and Kränzlin, (1995).

Morphologically *P. typhae* is closely related to *P. lacuum* Huijsman and *P. rubiginosa* A.H. Sm. and *P. sulcatotuberculosa* (J.Favre) Einhell. *Psathyrella lacuum* is distinguished from *P. typhae* by its white pileal color with a grey to brownish grey centre. *P. rubiginosa* differs by the presence of pleurocystidia and darker spores. *P. sulcatotuberculosa* differs by sulcate pileal margin and smaller spores (Smith, 1972; Redhead, 1979; Kits van Waveren, 1985; Battistin et al., 2014).

Sesli and Denchev (2014) and Solak et al. (2015) list 47 *Psathyrella* species occurring in Turkey. Later on three species, *P. sacchariolens* Enderle, *P. canoceps* (Kauffman) A.H. Sm. and *P. pseudovernalis* A.H. Sm., were also added to this list by Güngör et al. (2014, 2015) and Demirel and Koçak (2016) respectively. With the addition of *P. typhae,* the current taxa number of the genus *Psathyrella* in Turkey increased to 51.

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