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Flammulina fennae Bas, A new record from Karz Mountain (Bitlis)

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Flammulina fennae Bas, Karz Dağı'ından (Bitlis) bir yeni kayıt

Abstract: *Flammulina fennae* Bas (*Physalacriaceae)* is recorded for the first time from Turkey. Ecology, distribution, locality, and photographs related to macro and micromorphologies and a short description of the new record were given.

Key words: *Flammulina fennae*, *Physalacriaceae*, new record, Karz Mountain, Turkey.

Özet: *Flammulina fennae* Bas (*Physalacriaceae)* Türkiye'de ilk kez kaydedilmiştir. Yeni kaydın ekolojisi, yayılışı, lokalitesi, makro ve mikro fotoğrafları ve kısa bir deskripsiyonu verilmiştir.

Anahtar Kelimeler: *Flammulina fennae*, *Physalacriaceae*, yeni kayıt, Karz Dağı, Türkiye.

1. Introduction

Flammulina P.Karst. is a genus in the family *Physalacriaceae* Corner which has a cosmopolitan distribution, especially in temperate regions. Robert et al (2005; http://www. mycobank.org) and Index fungorum.org (accessed 1 November 2017) list 17 conformed species of *Flammulina*, most of which are edible (Ge et al., 2008).

Two *Flammulina* species, *F. ononidis* Arnolds and *F. velutipes* (Curtis) Singer, have been recorded from Turkey up to date. Although *F. velutipes* has been reported from many places of Turkey (Abatay, 1983; Demirel, 1998; Sesli, 1999; Solak et al., 1999; Öztürk et al., 2001; Uzun et al., 2004; Kaya et al., 2009), *F. ononidis* has been collected only from Samsun (Pekşen and Karaca, 2003).

During routine field studies in Karz Mountain (Bitlis-Turkey) some basidiomes were collected. *Flammulina fennae* Bas, was described as a new record according to the current checklists on Turkish macromycota (Sesli and Denchev, 2014; Solak et al., 2015) and the latest contributions to the basidiomycetous macrofungi of Turkey (Demirel and Koçak, 2016; Akata and Uzun, 2017; Aktaş et al., 2017; Demirel et al., 2017; Işık and Türkekul, 2017; Sesli and Vizzini, 2017; Uzun and Kaya, 2017; Uzun et al., 2017a,b).

The present study aims to make a contribution to the macrofungi of Turkey.

2. Materials and Method

Fungal specimens were collected from Obuz village, Karz Mountain (Tatvan-Bitlis-Turkey) in 2010. Morphological and ecological chracteristics of the samples were recorded during the field study and they were photographed in their natural habitats. Then, they were taken to the laboratory and microscopic investigations were carried out on them.

Microscopic investigation of the samples were done by using a Nikon light microscope. Reagents such as 5 % KOH and Congo red were used. Identification was performed with the aid of the relevant literature (Bas, 1983; Ripkovà et all., 2010; Schafer and Kibby, 2015).

3. Results

Fungi Bartling
Basidiomycota R.T. Moore
Agaricales Underw.
Physalacriaceae Corner
Flammulina P. Karst.
Flammulina fennae Bas, Persoonia 12(1): 52 (1983)

Macroscopic features: Pileus 20-45 mm in diameter, convex-parabolic, smooth, slightly viscid, pale ochre yellow, when moist short translucently striate at margin of mature basidiocarps, thick-fleshed, rather elastic. Lamellae adnexed to adnate, sinuate, moderately distant, with numerous intermediate gills, white to pale cream. Stipe 25-90 × 2-8 mm, cylindric-tapered, mostly solid, tough, densely subtomentose, concolorous with the pileus at apex, becoming darker reddish brown to dark brown below. In large basidiocarps there are a few remarkable longitudinal grooves (Fig. 1a).

Microscopic features: Spores 5.8-7 × 4-4.5 µm, ellipsoid to elongate-ellipsoid, thin-walled, smooth, hyaline, with small apiculus. Basidia 28-33 × 4.5-6.µm, 4-spored, clamped. Cheilocystidia 35-70 × 6-15 µm, scarce, utriform to lageniform, slightly thick-walled relatively to spore and basidium walls, hyaline. **P**leurocystidia similar to cheilocystidia (Fig. 1b,c,d).

Specimen examined: Bitlis–Tatvan, Karz Mountain, Obuz village, mixed woodland, on buried roots, 38° 26'625"K, 42° 22'467"D, 1788 m, 02.10.2010. S. 036.

4. Discussions

Flammulina fennae was added to Turkish mycobiota as the third member of the genus *Flammulina*. Macro and micromorphological properties of the newly recorded taxon agree with those described by Bas (1983) and Schafer and Kibby (2015).

Figure 1. *Flammulina fennae*: a- basidiomata; b- basidiospores; c- basidia and basidioles, d- cheilocystidia.

Among the *Flammulina* species, *F. velutipes* and *F. ononidis* are morphologically similar to *F. fennae*. But both of them have larger spores. Though *F. fennae* has a spore size of 6-8 × 4-4.5(-5) µm, spore sizes of *F. velutipes* and *F. ononidis* were reported as 7-11 × (2.5-)3-4 µm, and as 8.5-12.5 × 4.5-5.5 µm, respectively (Ripkova et al., 2010).

Field characteristics may also be used to distinguish these three species. Flammulina ononidis is known to associate with the roots of Ononis spinosa. Flammulina velutipes grows usually in winter season. But F. fennae has no association with Ononis and normally fruits outside winter season (Schafer and Kibby, 2015).

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