



Leucocoprinus brebissonii (Godey) Locq, A New Record for Turkish Mycobiota

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Leucocoprinus brebissonii (Godey) Locq, Türkiye Mikobiyotası için Yeni Bir Kayıt

Abstract: The genus *Leucocoprinus* Pat. is situated in the order *Agaricales* within the phylum *Basidiomycota*. Though the genus comprises about 40 species worldwide, it is among the genera which are represented with the least taxa in Turkey. About 2400 macrofungi taxa have been determined as a result of the studies carried out in Turkey till now. This number is very low compared to European continent. That's why it is important to determine the macrofungal diversity of Turkey by continuing such studies. In Turkey, *Leucocoprinus brebissonii* (Godey) Locq was determined for the first time from Sürmene (Trabzon). Macroscopic and microscopic properties of the taxon was provided and discussed briefly.

Key words: Biodiversity, *Leucocoprinus*, new record, Trabzon, Turkey

Özet: *Leucocoprinus* Pat. cinsi, *Basidiomycota* bölümünün *Agaricales* ordosu içerisinde yer alır. Cins dünya genelinde yaklaşık 40 tür ile temsil edilmesine rağmen, Türkiye'de en az türle temsil edilen cinsler arasında yer almaktadır. Türkiye'de şu ana kadar gerçekleştirilen çalışmalar sonucunda yaklaşık 2400 makromantar taksonu belirlenmiştir. Bu sayı Avrupa kıtası ile kıyaslandığında oldukça azdır. Bu nedenle bu gibi çalışmalar sürdürülerek Türkiye'nin makromantar çeşitliliğinin ortaya konması önem arz etmektedir. *Leucocoprinus brebissonii* (Godey) Locq türü Türkiye'de ilk kez bu çalışma ile Sürmene (Trabzon)'den tespit edilmiştir. Türün makroskopik ve mikroskopik özellikleri verilerek kısaca tartışılmıştır.

Anahtar Kelimeler: Biyoçeşitlilik, *Leucocoprinus*, yeni kayıt, Trabzon, Türkiye

1. Introduction

Turkey has a diverse plant cover due to its geographical position. Depending on this diversity, it is thought that the country might also have a similar macrofungal diversity. It is also the estimate of Mueller et al. (2007) regarding the plant/macrofungus ratios of temperate regions. Due to its climate and plant cover, Black Sea region is among the richest region of Turkey in terms of macrofungal diversity.

Though there is an important increase in the number of studies carried on the macrofungal diversity, the mycobiota of Turkey has not been completed yet. With such studies, the determined macrofungi species number of our country is being increased.

The last checklists about the determined macrofungi lists of Turkey were presented by Sesli and Denchev (2014), and Solak et al. (2015) in 2014 and 2015 respectively. Since mycodiversity studies are going on in an increasing manner, many contributions (Uzun et al., 2015; Acar and Uzun, 2016; Öztürk et al., 2016; Taşkın et al., 2016; Öztürk et al., 2017) were also made to these checklist.

During a field study in Sürmene district of Trabzon province, some white coprinoid fungi samples were collected. As a result of necessary investigation, they were identified as *Leucocoprinus brebissonii* (Godey) Locq. The current checklists (Sesli and Denchev, 2014; Solak et al., 2015) and the contributions which were made after the checklist (Acar et al., 2015; Akata et al., 2016; Demirel et al., 2016; Dengiz and Demirel, 2016; Kaya, 2016; Aktaş et al., 2017; Demirel et al., 2017; Işık and Türkekul, 2017; Sesli and Sesli, 2017; Sesli and Vizzini 2017; Uzun and Demirel, 2017; Uzun and Kaya, 2017; Uzun et al., 2017a;

2017b) were checked and it is found that the taxon has not been reported from Turkey.

The aim of this study is to make a contribution to the mycobiota of Turkey.

2. Materials and Method

Macrofungi samples were collected from Sürmene district of Trabzon Province in 2014 during a routine field study. Colour photographs of the samples were taken and some ecologic and morphologic properties of the samples were recorded. After that the macrofungi samples were brought to the fungarium and prepared as fungarium materials according to mycological rules. Dried samples were used to obtain the microscopic data. Microscopic investigations were carried out under a light microscope by mounting in 5% KOH. Basidiospore dimensions were determined by at least 10 measurement from each sample.

The macrofungi samples were identified with the help of Moser (1983), Buczacki (1989), Breitenbach and Kränzlin (1995), Rother and Silveira (2009) and Pushpa and Purushothama (2011). They are protected at Yüzüncü Yıl University Fungarium (VANF).

3. Results

The systematic of the taxon is given in accordance with Kirk et al. (2008), and the Index Fungorum (www.indexfungorum.org; accessed 25 October 2017).

Fungi Bartling
Basidiomycota R.T. Moore
Agaricales Underw.
Agaricaceae Chevall.

Leucocoprinus brebissonii (Godey) Locq., Bull. mens. Soc. linn. Soc. Bot. Lyon 12: 95 (1943)

Syn: *Lepiota brebissonii* Godey, *Lepiota cepistipes* var. *cretacea* Grev.

Macroscopic and microscopic features: Pileus 2-4 cm in diameter, ovoid to conic-campanulate when young, convex to plane when mature, slightly umbonate, surface white, covered by greenish brown to blackish-brown squamulose fibrils at the center, paler to white toward the margin, plicate sulcate to striate at the margin or half-way toward the disk in some members. Flesh thin up to 1 mm and white. Lamellae free, white. Stipe 30-60 x 2-3 mm, cylindric, slightly bulbous at the base, solid when young, becoming hollow at maturity, surface white, pruinose, annulus membranous, persistent, white, attached half-way zone of the stipe.

Basidia 25-30 x 6-11 µm, clavate with four sterigmata, Cheilocystidia 27-40 x 12-14 µm, cylindric to clavate, hyaline, Spores 9-13 x 6-8 µm, ellipsoid, truncated by an apical germ-pore, hyaline, thick walled.

Ecology: *Leucocoprinus brebissonii* grows on soil among leaf litter or on leaf litter, in hardwood forests, parks and greenhouses (Breitenbach and Kränzlin, 1995; Rother and Silveira, 2009; Pushpa and Purushothama, 2011).

Specimen examined: Trabzon, Sürmene, Çamburnu village, mixed forest clearing, meadow, 40°55'362"N, 40°12'740"E, 70 m, 14.09.2014, O.003.

4. Discussions

Leucocoprinus brebissonii is characterized by having white pileus, covered with dark-brown fibrils at the disk, plicate-striate margin, white spore-print, thick walled and metachromatic basidiospores with a distinct germ pore (Candusso and Lanzoni 1990; Breitenbach and Kränzlin, 1995; Rother and Silveira, 2009; Pushpa and Purushothama, 2011). Our sample fits with all the characters listed above. This taxon is differentiated from the other similar species with above listed characteristics (Candusso and Lanzoni, 1990). The metachromatic spores, absence of clamps, and the striate pileus also distinguishes it from some other similar species such as *Lepiota cristata* and *L. felina*.

Like other *Leucocoprinus* species, *L. brebissonii* have also been recorded from greenhouses, but this one can also fruits in nature freely, especially in warm locations.

Leucocoprinus brebissonii have morphological similarities with *L. venezuelanus* Dennis. But the latter species differs with smaller basidiospores.

In conclusion *Leucocoprinus brebissonii* was added as new record to the mycobiota of Turkey, increasing the number of current members of the genus *Leucocoprinus* from 5 to 6.

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Figure 1. Basidiocarps (a) and basidiospores (b) of *Leucocoprinus brebissonii*

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