Geliş(Recevied) :14.05.2020
Kabul(Accepted) :03.09.2020

Araştırma Makalesi/Research Article
Doi: 10.30708.mantar.737501

Phylloscypha boltonii, A New Record for the Mycobiota of Turkey

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Abstract: *Phylloscypha boltonii* is reported for the first time for the mycobiota of Turkey. This species is the second member of the genus *Phylloscypha* Van Vooren in Turkey. A brief description of the taxon is given together with the photographs related to its macro and micromorphologies.

Key words: *Ascomycota,* Biodiversity, Mersin, *Pezizales,* Taxonomy

Phylloscypha boltonii, Türkiye Mikobiyotası İçin Yeni Bir Kayıt

Öz: *Phylloscypha boltonii* Türkiye mikobiyotası için ilk kez rapor edilmiştir. Bu tür *Phylloscypha* Van Vooren cinsinin Türkiye'deki ikinci üyesidir. Taksonun kısa bir betimlemesi, makro ve mikromorfolojilerine ait fotoğrafları ile birlikte verilmiştir.

Anahtar kelimeler: *Ascomycota,* Biyoçeşitlilik, Mersin, *Pezizales,* Taksonomi

Introduction

Phylloscypha Van Vooren is an ascomycete genus within the family *Pezizaceae*. It is a newly erected genus and proposed by Van Vooren (2020). Based on both morphological characters and molecular data obtained from databases, he transferred five *Peziza* Dill. Ex Fr. species with new names *Phylloscypha boltonii* (Quél.) Van Vooren & Hairaud, *P. coquandii* (Donadini) Van Vooren, *P. labessiana* (Boud.) Van Vooren, *P. phyllogena* (Cooke) Van Vooren and *P. retrocurvatoides* (Van Vooren) Van Vooren) with the type species *P. phyllogena* (Van Vooren, 2020; Index fungorum, accessed 28 August 2020). Members of the genus are characterized by epigeous, sessile, cupulate ascomata witih a distinctly furfuraceous or pustulate external surface; a purplish-coloured flesh without latex; an operculate, 8-spored asci with wall diffusely bluing in iodine solution; hyaline paraphyses; eguttulate spores with small polar granules and warty ornamentation.

The checklists (Sesli and Denchev, 2014; Solak et al., 2015) don't contain any member of the genus *Phylloscypha.* But three papers (Acar et al., 2015; Türkekul and Işık, 2016; Sadullahoğlu and Uzun, 2020) reported the existance of *P. phyllogena* in Turkey. According to the current checklists (Sesli and Denchev, 2014; Solak et al., 2015) on Turkish macromycota and the later contributions (Kaşık et al., 2017; Akçay et al., 2018; Işık and Türkekul, 2018; Uzun et al., 2018, 2020; Acar et al., 2019; Çağli et al., 2019; Keleş, 2019; Sesli, 2019; Yakar et al., 2019; Yıldız et al., 2019), *P. boltonii* hasn't been reported from Turkey before.

The study aims to make a contribution to the mycobiota of Turkey.

Material and Method

Fruit bodies of *Phylloscypha boltonii* were collected in 2019 during a routine field trip in Silifke district of Mersin Province. First they were photographed at their natural habitats, and notes were taken related to their ecology, morphology and geographic position etc. The collected fruit bodies were put in paper boxes and transferred to the fungarium. The samples were dried in an air conditioned room. Microscopic investigations were carried out on dry samples. A Nikon Eclipse Ci-S trinocular microscope was

used for microscopic investigation and a DS-Fi2 digital camera was used to obtain microstructural photographs. The samples were identified according Seaver (1942); Hohmeyer (1986); Lantieri (2004, 2005); Medardi (2006) and Pancorbo and Ribes (2010). The specimens are kept at Karamanoğlu Mehmetbey University, Kâmil Özdağ Science Faculty, Department of Biology.

Results

Ascomycota Caval-Sm

Pezizomycetes O.E.Erikss. & Winka

Pezizales J.Schröt.

Pezizaceae Dumort.

Phylloscypha boltonii (Quél.) Van Vooren & Hairaud

Syn: [*Aleuria boltoni* (Quél.) Gillet; *Galactinia boltonii* (Quél.) Boud.; *Peziza boltonii* Quél.]

Macroscopic and microscopic features: Apothecia 20-40 mm in diameter, sessile, cup to saucer shaped, edges irregular, wavy and generally inrolled, hymenial surface smooth, dark purplish to dark violet when young, more brown when at maturity, outer surface concolorous with the hymenial surface or lighter brown, completely covered with small violet-black furfurations (Fig. 1). Flesh brittle, dark purple.

Asci 245-275 × 15-18 µm, cylindrical, operculate, amyloid, uniseriate, eight-spored (Fig. 2a-e). Paraphyses cylindrical, multi-septate (Fig. 2b,c), some slightly thickened at the apex. Ascospores 15-18 × 7.5-9 µm, ellipsoidal, hyaline, biguttulated to without guttules, ornamented with small warts (Fig. 2d-f).

Phylloscypha boltonii was reported to grow as solitary or gregariously on sandy soil, dune with *Pinus* spp., broadleaved shrubs (Lantieri, 2004; Medardi, 2006; Pancorbo and Ribes, 2010), rarely on mosses and burnt soil (Dougoud 2001; Lantieri et al., 2009).

Specimen examined: Mersin, Silifke, Kargıcak Village, Göksu river bank, on sand and sandy soil, 36°26′N-33°38′E, 110 m, 29.10.2019, D.Kap.252; 09.11.2019, D.Kap.296.

Figure 1. Ascocarps of *Phylloscypha boltonii* on sand and sandy soil

Discussions

Phylloscypha boltonii is reported for the first time for the mycobiota of Turkey. Macroscopic and microscopic characteristics of Turkish collection are in accordance with those given in literature (Seaver, 1942; Hohmeyer, 1986; Lantieri, 2004, 2005; Medardi, 2006; Pancorbo and Ribes, 2010).

Phylloscypha boltonii is generally linked with sandy soils but may also grow on burnt places. Though it has some very marked macroscopic characteristics, it is possible to confuse *P. boltonii* with numerous macroscopically similar *Peziza* species like *Pz. gerardii* Cooke, *Pz. lividula* W. Phillips, *Pz. lobulata* (Velen.), *Pz. moseri* Svrcek Aviz.-Hersh. & Nemlich, *Pz. pseudoampelina* Donadini, *Pz. tenacella* W. Phillips and *Pz. violacea* Pers. But the microscopic characters of all these taxa differentiate them from *P. boltonii.* Among them *Pz. gerardii* and *Pz. lividula* has fusiform ascospores while *Pz. lobulata* and *Pz. moseri* have smooth ascospores. Like *P. boltonii, Pz. pseudoampelina* and *Pz. tenacella* also have ornamented ascospores but the prior species has quite larger ascospores (20-25 x 9.5-12 µm), and the latter one has smaller ascospores (11-14 x 6-8 µm) compared to that of *P. boltonii.* On the other hand *Pz. violacea* has smaller and finely warty ascospores. Violet coloration of *Pz. violacea* is also another differentiating character between this species and *P. boltonii* (Lantieri, 2005; Medardi, 2006; Pancorbo and Ribes, 2010).

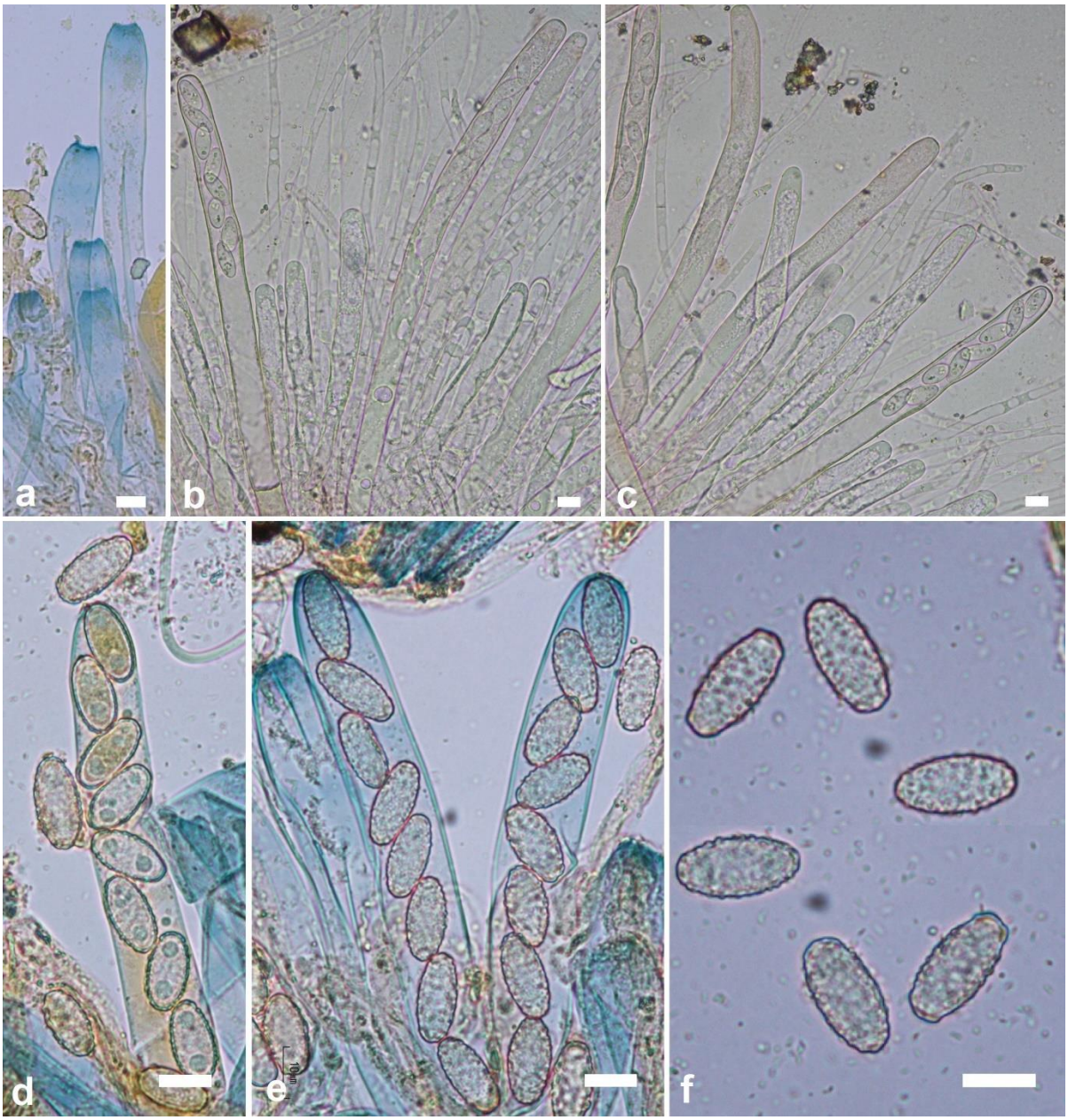

Figure 2. Asci (a-e), paraphyses (b,c) and ascospores (d-e) of *Phylloscypha boltonii* (bars: 10 µm; a,d,e,f in Melzer)

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