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A New Record for Turkish Mycota from Tokat Province: *Arachnopeziza aurelia* (Pers.) Fuckel

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Abstract: In this study, fungal samples collected in Tokat province were identified as *Arachnopeziza aurelia* (Pers.) Fuckel and recorded for the first time for the Turkish mycota. Short description, photographs, locality, collection date and ecological features of the newly reported species was provided.

Key words: *Arachnopeziza aurelia*, biodiversity, macrofungi, new record, Tokat, Turkey

Türkiye Mikotası İçin Tokat Yöresinden Yeni Bir Kayıt: *Arachnopeziza aurelia* (Pers.) Fuckel

Öz: Bu çalışmada, Tokat yöresinden toplanan mantar örnekleri *Arachnopeziza aurelia* (Pers.) Fuckel olarak teşhis edildi ve Türkiye mikotası için ilk kez kaydedildi. Yeni rapor edilen türün kısa tanımı, fotoğrafları, lokalitesi, koleksiyon numarası ve ekolojik özellikleri verildi.

Anahtar kelimeler: *Arachnopeziza aurelia*, biyoçeşitlilik, makrofunguslar, yeni kayıt, Tokat, Türkiye

Introduction

Arachnopeziza is a genus of family *Arachnopezizaceae* and it has approximately 39 species worldwide (Kirk, 2011). This genus is characterized by sessile apothecia seated on well-developed subicular mat. It is minute to medium large, cupulate to patellate, white to some shade of orange or buff. Moreover it has septate excipular hairs. The asci are 8-spored, small to fairly large, clavate to cylindrical. The ascospores are hyaline, ellipsoid to fusoid to filiform, usually tapering below, 1- to 7-septate. Paraphyses hyaline, simple or branched, filiform, usually septate, with an obtuse apex (Whitton et al., 2012; Korf 1951).

According to Sesli and Denchev (2014), 2158 macrofungi species were recorded for Turkish mycota. Of these, 215 are *Ascomycota*. With recent studies such as; Uzun et al., 2015a, 2015b; Kaya, 2015; Akata and Doğan,

2015; Kaya and Uzun, 2015; Kaya et al., 2016; Taşkın et al., 2015; Akçay and Uzun, 2016; Taşkın et al., 2016; Öztürk et al., 2016; Doğan and Kurt, 2016; Doğan et al., 2016; Acar and Uzun, 2016; Akata et al., 2016a, 2016b, 2016c; Uzun et al., 2017a, 2017b; Türkecul, 2017; this number has increased even more. The aim of this study is to contribute for Turkish mycota.

The area where samples were collected is about 8 km away from Tokat city center and surrounded by mixed forest. It has a transition climate between the Black Sea climate and the continental climate. Some of the common plants in the region are *Pinus sylvestris* L., *Rosa canina* L. and members of the genera *Juniperus*, *Salix*, *Quercus*, *Crataegus*.



Materials and Methods

Fungal samples were collected in Tokat province in spring 2017. Morphological and ecological characteristics of the samples were recorded and they were photographed in their natural habitats. Then, they were brought to the laboratory and dried. Microscopic descriptions were carried out predominantly on dried specimens by using a light microscope. Some chemical reagents (5% KOH solution, congo red; cotton blue etc.) were used for the examination of macroscopic and microscopic structures. Measurements of anatomical features (spores, asci, paraphyses, hairs) were presented based on at least 20 measurements. Amyloid reactions were tested by using Melzer's reagent. Identification of the samples was performed by measuring macroscopic and microscopic features of the specimens. The following literature were used for identification; Korf (1951), Breitenbach and Kränzlin (1984), Wang (2009), Whitton et al. (2012), Beug et al. (2014), Park et al. (1985), Gamundi and Gaiotti (1994). The identified samples were deposited in Fungarium of Biology Department of Gaziosmanpaşa University.

Results

Short description of newly reported species, photograph of apothecia, microphotographs of asci, paraphyses and spores are provided below. The systematic of newly reported species are accordance with Index Fungorum (www.speciesfungorum.org; accessed 16 December 2017).

Fungi

Ascomycota

Arachnopezizaceae

Arachnopeziza aurelia (Pers.) Fuckel (1870) [1869-70].

Synonymy: *Arachnopeziza fulgens* (Hazsl.) Boud.; *Belonidium aurelia* (Pers.) De Not.; *Belonidium fulgens* (Hazsl.) Sacc.; *Cryptomyces wauchii* Grev.; *Lachnella aurelia* (Pers.) Quél.; *Peziza aurelia* Pers.; *Peziza aurelia* Pers. f. *aurelia*; *Peziza wauchii* Grev.; *Stictis wauchii* (Grev.) Berk.; *Tapesia aurelia* (Pers.) W. Phillips; *Tapesia fulgens* Hazsl.

Apothecia 0,3 - 2 mm, gregarious or scattered, sessile, rounded and cup-shaped when young, becoming

shallowly cup-shaped at maturity, stalkless, attached to the substrate by yellowish mycelium; hymenium smooth, pale yellow to golden yellow; outer surface and margin covered with yellow-orange to orange hairs (Figure 1a). **Hairs** with hyaline to orange walls and contents, often cohering to form short teeth, flexuous, 3.5–4.1 μm wide below, tapering to an apex 1.5–3 μm wide, usually pointed, fairly thick-walled below, tending to be thin-walled toward the apex, smooth, multiseptate, 100–500 \times 5 μm long (Figure 1c). **Asci** biseriate, 8 spored, clavate, (88)102-115 \times (7.2)7.7-9.2(11.5) μm (Figure 1b). **Ascospores** hyaline, smooth, fusoid-cylindric, attenuate below and often also above, obliquely uniseriate to irregularly biseriate, 1–3 septate when mature, 12–22 \times 3.5–5 μm (Figure 1b). **Paraphyses** hyaline, simple, filiform, not or only slightly enlarged at the apex, 1–2 μm wide; septa few (Figure 1b).

On the undersides of decaying fallen logs, acorn cups, branches, or leaves and especially on fruits and involucre of members of the genera *Quercus*, *Fagus*. Season spring, summer, and fall (Korf 1951).

Tokat center, Çamdere village, on dead branches of *Quercus* sp, 20. 05. 2017, 40° 23' 32" N, 36° 33' 145" E, 1335 m, ISIK 700.

Discussion

With this study, *Arachnopeziza aurelia* (Pers.) Fuckel was reported for the first time from Turkey. *Arachnopeziza aurata* was previously reported at genus level for first time from Turkey by Sümer (1989) has similar morphological characters with *A. aurelia*. Although their macroscopic properties are similar, these two species can easily be distinguished from each other by differences in the spore structure (Breitenbach and Kränzlin, 1984). Multiseptate spores of *A. aurata* are filiform to slightly clavate and its sizes are different from *A. aurelia* (60-75 \times 1.5-3 μm). Other similar species are *A. delicatula* Fuckel, *A. arctostaphyli* Cash, *A. candidofulva* (Schwein.) Korf. *A. delicatula* has larger clavate spores (24-48 \times 2–4 μm). Fruiting body of *A. arctostaphyli* is cream-colored and its 7-septate spores are filiform. *A. candidofulva* can be distinguished from *A. aurelia* by its 1-septate spores at maturity (Korf, 1951; Breitenbach and Kränzlin, 1984; Beug et al. 2014).

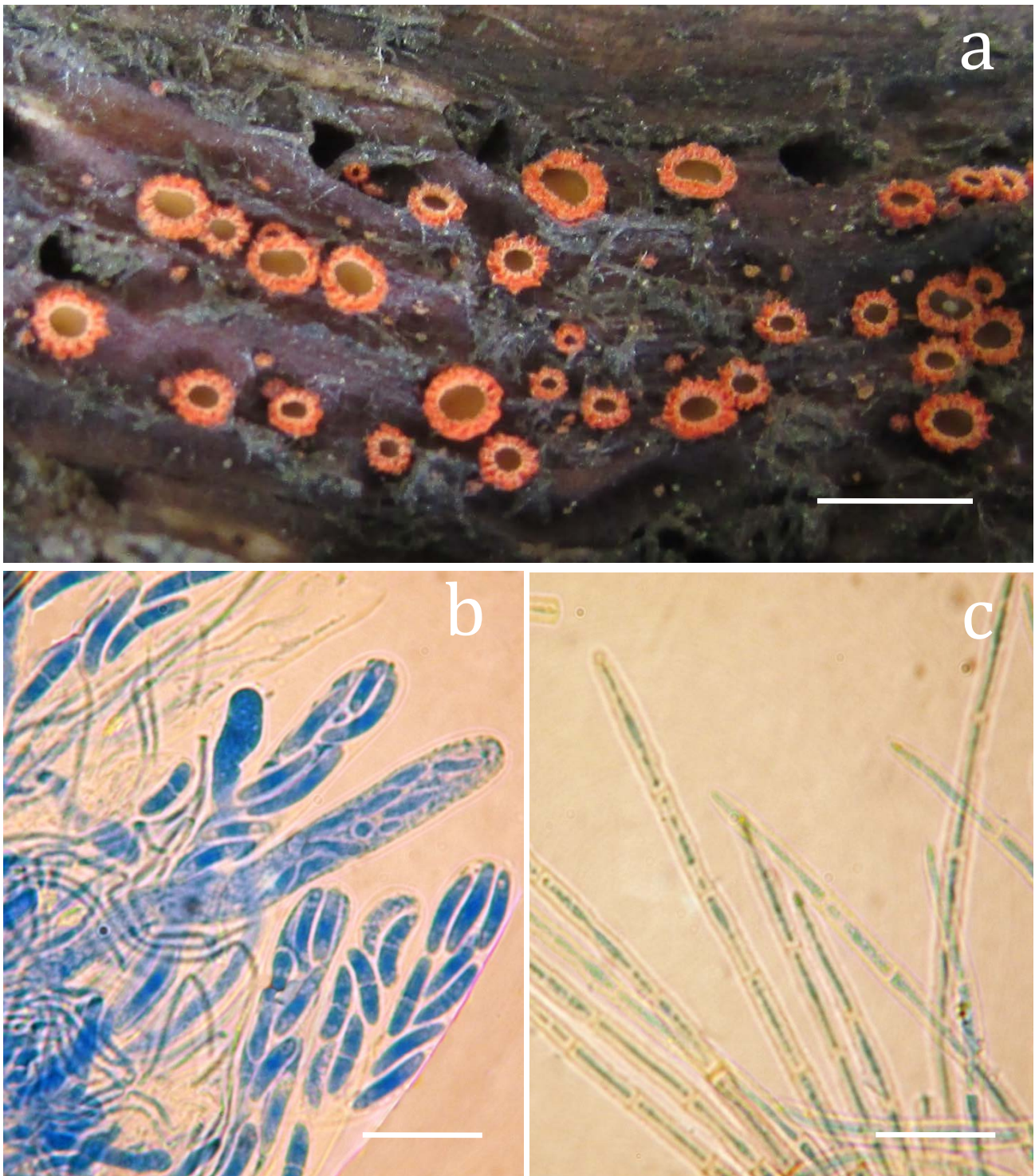


Figure 1. *Arachnopeziza aurelia*: a- ascocarps, b- asci with spores and paraphyses (in lactophenol cotton blue), c- hairs (in lactophenol cotton blue+KOH) (scale bars: a = 4 mm; b and c = 15 μ m)



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