



A new record of a Marasmioid species for Turkish mycobiota

Yasin UZUN, Semiha YAKAR, Abdullah KAYA *¹

¹Karamanoğlu Mehmetbey University, Kâmil Özdağ Science Faculty, Department of Biology, 70100, Karaman, Turkey

Abstract

A new marasmioid species, *Marasmius curreyi* Berk. & Broome belonging to the family *Marasmiaceae*, is given as new record for the mycobiota of Turkey from Tonya district of Trabzon province. A brief description of the taxon is given together with its photographs related to macro and micromorphologies.

Key words: new record, macrofungi, *Marasmius*, Trabzon, Turkey

----- * -----

Türkiye mikobiyotası için yeni bir Marasmioid tür kaydı

Özet

Marasmiaceae familyasına ait bir marasmioid tür olan *Marasmius curreyi* Berk. & Broome Trabzon'un Tonya ilçesinden Türkiye makromikotasi için yeni kayıt olarak verilmiştir. Taksonun kısa betimlemesi makro ve mikromorfolojisine ait fotoğraflarla birlikte verilmiştir.

Anahtar kelimeler: yeni kayıt, makromantar, *Marasmius*, Trabzon, Türkiye

1. Introduction

Marasmius Fr. is a marasmioid genus within the family *Marasmiaceae* Roze ex Kühner (*Agaricales*, Basidiomycota). Its members are characterised with marasmioid or collybioid, small to medium-sized basidiocarps; smooth, glabrous, grooved or radially sulcate pileus; well-developed, white to pale cream, pale ochraceous, collariate or non collariate lamellae; insititious or non-insititious stipe; white to pale cream spore print; hyaline, smooth, thin-walled, nondextrinoid spores (Antonín and Noordeloos 2010).

Marasmioid species play an essential saprobic role in forest ecosystems and widely distributed especially in tropical regions where they play an important role in litter decomposition. But they are often overlooked by collectors due to their tiny size (Kuo, 2013; Oliveria and Sanchez-Ramirez, 2014).

Though more than 500 species of *Marasmius* taxa are estimated to exist worldwide (Kirk et al., 2008) and 60 and 40 of them had been reported from North America and Europe respectively (Kuo, 2013), only 20 conformed members of the genus *Marasmius* have so far been recorded from Turkey (Öner, 1972; Demirel, 1998; Kaya and Öztürk, 1999; Kaşık et al., 2001; Öztürk et al., 2003; Pekşen and Karaca, 2003; Demirel et al., 2004; Uzun et al., 2006; Türkekul, 2005, 2008; Alı et al., 2007; Kaya, 2009; Hüseyinov et al., 2001; Işiloğlu et al., 2009; Sesli and Denchev, 2014; Solak et al., 2015).

During our routine field trips in Tonya (Trabzon) district, within the scope of a university research fund project, some marasmioid fungi samples were collected. After necessary investigations they were identified as *Marasmius curreyi* Berk. & Broome. A control of the current checklists (Sesli and Denchev, 2014; Solak et al., 2015) and the latest records related to *Agaricales* (Akata et al., 2016; Dengiz and Demirel, 2016; Öztürk et al., 2016; Sesli et al., 2016; Uzun and Demirel, 2017; Uzun et al., 2017; Sadullahoğlu and Demirel, 2018) on the macromycetes of

* Corresponding author / Haberleşmeden sorumlu yazar: Tel.: +903382262156; Fax.: +903382262150; E-mail: kayaabd@hotmail.com

Turkey, indicated that the taxon was not recorded from Turkey before. Therefore, the study aims to make a contribution to the mycobiota of Turkey.

2. Materials and methods

Marasmius Fr. samples were collected in Tonya district of Trabzon province in 2016. The samples were photographed at their natural habitats and necessary characteristics related to its ecology and morphology were noted. After transferring the samples to the laboratory, they were dried and prepared as fungarium specimens. Investigation related to its micromorphology were carried out under Nikon Eclipse Ci trinocular light microscope. Meltzer's reagent was used as a chemical media. Micromorphologic photographs were obtained with the help of a DS-Fi2 digital camera. Identification of the samples were carried out according to Antonín (1989), Breitenbach and Kränzlin (1991), Baird et al. (1992), Antonín and Buyck (2006), Antonín and Noordeloos (2010), Desjardin et al. (2015). The studied *Marasmius* samples are stored at Karamanoğlu Mehmetbey University, Kamil Özdağ Science Faculty, Department of Biology.

3. Results

Sytematics of the taxon is in accordance with Kirk et al. (2008) and speciesfungorum.org (accessed at July 2017). The description of macroscopic and microscopic characters, ecology, and distribution of the species are provided and discussed briefly.

Marasmius curreyi Berk. & Broome

Synonyms: *Androsaceus curreyi* (Berk. & Broome) Rea, *Chamaeceras curreyi* (Berk. & Broome) Kuntze, *Marasmius curreyi* var. *bicystidiatus* Antonín & Hauskn., *Marasmius curreyi* var. *distantifolius* Antonín.

Macroscopic features: Pileus 2-9 mm in diameter, conical-hemispherical when young, convex to plano-convex when mature, depressed at the center, sulcate, with a crenulate to wavy margin, surface finely tomentose, light to ochraceous-brown, darker at the center. Flesh thin, membranous, odor and taste mild to not distinctive. Gills distans, collariate, collarium broadly umbilicate when mature, whitish to cream colored, with concolorous, finely pubescent edge. Stipe 10-27 × 0.3-0.5 mm, filiform, more or less equal, surface smooth, brown, paler to whitish at apex, blackish-brown at basal part (Figure 1a).

Microscopic features: Basidia 22-25 × 8.5-9 μm, clavate, generally four spored. Cheilocystidia 14-19 × 8-12 μm, clavate to subcylindrical, thin walled, with projections. Pileipellis made up of broom cells of the Siccus-type with clavate or cylindrical-clavate basal part (Figure 1b). Pleurocystidia not observed. Clamp connections present. Spores 8-9.6 × 4.5-5.5 μm, ellipsoid, ellipsoid-fusoid or amygdaliform, thin-walled, hyaline (Figure 1c), not dextrinoid, spore print not observed.

Ecology: Gregarious in humid forest on dead stems of plants (Antonín and Buyck, 2006; Desjardin et al., 2015), occasionally on decaying remnants of *Cyperaceae*, *Juncaceae* and *Poaceae* (Antonín and Noordeloos, 2010) especially during summer.

Specimen examined: Trabzon, Tonya, Karağaçaılı village, hazelnut garden, on grass remains, 40°55'N-39°17'E, 640 m, 20.06.2016, Yuzun 5156.



Figure 1. *Marasmius curreyi*: a. basidiocarps, b. pileipellis cells, c. basidiospores

4. Conclusions and discussion

Marasmius curreyi is mainly characterized by a brownish pileus, rather distant collariate lamellae with concolorous edges, pileipellis with broom cells of the Siccus-type, and mainly monocotyledonous substrate (Antonín and Noordeloos, 2010; Antonin and Buyck, 2006). Like *M. curreyi*, *Marasmius nigrobrunneus* (Pat.) Sacc. is another grass-loving *Marasmius* species and may be confused with *M. curreyi*. But the generally longer stipe which arises directly from rhizomorphs or from substrate and more brownish pileus distinguishes it from *M. curreyi* (Wannathes et al., 2009). *Marasmius curreyi* is most likely to be confused with several other gramminicolous species, *M. epodius* Bres. and *M. armeniacus* Gilliam. Among them, *M. epodius* differs from *M. curreyi* with its longer basidiospores and *M. armeniacus* differs with collarless lamellae (Gilliam, 1975), the absence of depressed to umbilicate pileal disc and non-institious stipe (Desjardin et al., 2015).

Acknowledgements

The authors would like to thank Karamanoğlu Mehmetbey University Research Fund for supporting the project (02-M-15) financially.

References

- Diversity and Conservation, 9(2), 57-69.
- Allı, H., Işıloğlu, M., Solak, H. (2007). Macrofungi of Aydın Province, Turkey. Checklist to Mycotaxon, 99, 163-165.
- Antonín, V. (1989). Type studies in Marasmioid and Collybioid Fungi (Tricholomataceae) II. *Agaricus graminum*. Mycotaxon 36(1), 19-27.
- Antonín, V., Buyck, B. (2006). *Marasmius* (Basidiomycota, Marasmiaceae) in Madagascar and the Mascarenes. Fungal Diversity 23, 17-50.
- Antonín, V., Noordeloos, M.E. (2010). A monograph of marasmioid and collybioid fungi in Europe. IHW-Verlag: Eching, Germany.
- Baird, R.E., Wilson, J.P., Summer, D.R. (1992). Identity and Pathogenicity of Two *Marasmius* Species from the Sterile While Basidiomycete Complex. Plant Dis. 76, 244-247.
- Breitenbach, J., Kränzlin, F. (1991). Fungi of Switzerland. Volume 3, Verlag Mykologia: Luzern, Switzerland.
- Demirel, K. (1998). New records for the fungus flora of Turkey. Turkish Journal of Botany 22, 349-353.
- Demirel, K., Uzun, Y., Biber, G. (2004). Macrofungi of Şavşat (Artvin) District. The Herb Journal of Sytematic Botany, 11(2), 191-206.
- Dengiz, Y., Demirel, K. (2016). Şirvan (Siirt) Yöresinde Yetişen Makrofunguslar Üzerinde Taksonomik Bir Araştırma. Yüzüncü Yıl University Journal of the Institute of Natural & Applied Sciences 21(2), 112-123.
- Desjardin, D.E., Wood, M.G. & Stevens, F.A. (2015). California Mushrooms: The Comprehensive Identification Guide. Timber Press: Portland, OR.
- Gilliam, M.S. (1975). New North American Species of *Marasmius*. Mycologia 67 (4), 817-844.
- Huseyinov, E., Selçuk, F., Aslantaş, I. (2001). Some data on agaricoid fungi from Sivas Province (Turkey). Mikologia & Fitopatologia 35(4), 29-33.
- Işıloğlu, M., Allı, H., Solak, M.H., Watling, R. (2009). A new *Marasmius* on *Castanea sativa* from Turkey. Mycotaxon 107, 343-347.
- Kaşık, G., Öztürk, C. & Toprak, E. (2001). Macrofungi of Niğde Province (Turkey). The Herb Journal of Systematic Botany, 8(2), 137-142.
- Kaya, A. (2009). Macrofungi of Huzurlu high plateau (Gaziantep-Turkey). Turkish Journal of Botany, 33, 429-437.
- Kaya, A., Öztürk, A. (1999). Two new records for the mycoflora of Turkey. Yüzüncü Yıl Üniversitesi Fen Bilimleri Enstitüsü Dergisi, 6(1), 27-29.
- Kirk, P.M., Cannon, P.F., Minter, D.W., Stalpers, J.A. (2008). Dictionary of the Fungi, 10th ed. Wallingford, UK: CAB International.
- Kuo, M. (2013, January). Marasmioid mushrooms. Retrieved from the MushroomExpert.Com Web site: <http://www.mushroomexpert.com/marasmioid.html>
- Oliveira, J.J.S., Sanchez-Ramirez, S., Capelari, M. (2014). Some new species and new varieties of *Marasmius* (Marasmiaceae, Basidiomycota) from Atlantic Rainforest areas of São Paulo State, Brazil. Mycol Progress 13, 923-949.
- Öner, M. (1972). A contribution to the knowledge of common Turkish higher fungi. Mycopathologia et Mycologia Applicata 47(4), 369-373.
- Öztürk, C., Kaşık, G., Doğan, H.H., Aktaş, S. (2003). Macrofungi of Alanya District. Turkish Journal of Botany 27, 303-312.
- Öztürk, Ö., Doğan, H.H., Şanda, M.A. (2016). Some new additions to Turkish mycobiota from Sakarya region. Biological Diversity and Conservation, 9(1), 97-100.

- Pekşen, A., Karaca, G.H. (2003). Macrofungi of Samsun Province. *Turkish Journal of Botany*, 27, 173-184.
- Sadullahoğlu, C., Demirel, K. 2018. *Flammulina fennae* Bas, A New Record from Karz Mountain (Bitlis). *Anatolian Journal of Botany* 2(1), 19-21.
- Sesli, E., Türkekel, İ., Akata, I., Niskanen, T. (2016). New records of Basidiomycota from Trabzon, Tokat, and İstanbul provinces in Turkey. *Turkish Journal of Botany*, 40(5), 531-545.
- Sesli, E., Denchev, C.M. (2014). Checklists of the myxomycetes, larger ascomycetes, and larger basidiomycetes in Turkey. 6th edn. *Mycotaxon Checklists Online*. (<http://www.mycotaxon.com/resources/checklists/sesli-v106-checklist.pdf>), 1-136.
- Solak, M.H., Işıloğlu, M., Kalmış, E., Allı, H. (2015). Macrofungi of Turkey Checklist Vol II. Üniversiteler ofset, İzmir.
- Türkekel, İ. (2005). Two new records for macrofungi of Turkey. *The Herb Journal of Systematic Botany* 12(2), 187-190.
- Türkekel, İ. (2008). Macrofungus flora of Almus and Çamiçi plateau (Tokat). *Biyoloji Bilimleri Araştırma Dergisi* 1(1), 53-55.
- Uzun, Y., Demirel, K. 2017. A New *Mycena* Record for the Mycobiota of Turkey. *Anatolian Journal of Botany* 1(1), 9-11.
- Uzun, Y., Kaya, A., Karacan, İ.H., Yakar, S. (2017). New additions to Turkish Agaricales. *Biological Diversity and Conservation*, 10(2), (in print).
- Uzun, Y., Keleş, A., Demirel, K. (2006). Contributions to the macrofungi flora of Gümüşhane Province. *Turkish Journal of Botany*, 30, 39-46.
- Wannathes, N., Desjardin, D.E., Hyde, K.D., Perry, B.A., Lumyong, S. (2009). A monograph of *Marasmius* (Basidiomycota) from Northern Thailand based on morphological and molecular (ITS sequences) data. *Fungal Diversity* 37, 209-306.

(Received for publication 27 July 2017; The date of publication 15 August 2018)