ISSN (print) 0093-4666  ISSN (online) 2154-8889

MYCOTAXON

http://dx.doi.org/10.5248/125.87

*Volume 125, pp. 87–90* *July–September 2013*

# Two earth-tongue genera new for Turkey

Ilgaz Akata[1] & Abdullah Kaya[2*]

[1]*Ankara University, Science Faculty, Department of Biology, TR 06100, Ankara, Turkey*
[2]*Karamanoglu Mehmetbey University, Science Faculty, Department of Biology, TR 70100 Karaman, Turkey*
[*]Correspondence to: *kayaabd@hotmail.com*

Abstract — The genera *Spathulariopsis* (*Cudoniaceae*) and *Trichoglossum* (*Geoglossaceae*) are recorded from Turkey for the first time, based on the collections of *Spathulariopsis velutipes* and *Trichoglossum hirsutum*. Short descriptions and photographs of the taxa are provided.

Key words — *Ascomycota*, biodiversity, macrofungi

## Introduction

Earth-tongues, including the genera *Geoglossum* Pers., *Leotia* Pers., *Microglossum* Gillet, *Spathularia* Pers., *Spathulariopsis* Maas Geest., and *Trichoglossum* Boud., are among the most widely distributed groups of fungi in the division *Ascomycota*. They produce large pileate tongue-shaped fruiting bodies on various substrates and are common in temperate regions. Despite their wide distribution, most have been described from North America and Southwest China (Zhuang 1998, Hustad et al. 2011, Wang et al. 2011).

*Spathulariopsis (Cudoniaceae)* is a monotypic genus. Also known as velvet-foot fairy fan, *S. velutipes* forms a yellowish to brownish yellow laterally compressed fan- or spatula-like head on a narrow brownish stem, needle-shaped hyaline occasional septate ascospores, and 8-spored asci.

*Trichoglossum (Geoglossaceae)* contains 19 species (Kirk et al. 2008), commonly known as black earth-tongues. *Trichoglossum* taxa are usually characterized by club-shaped brownish black fruiting bodies, smooth or velvety stipes, 7–15-septate smooth dark ascospores, large 4–8-spored asci, and a positive reaction of the apical ascus pore in Meltzer's reagent (Arora 1986, Hansen & Knudsen 2000).

According to the literature on Turkish macrofungi (Solak et al. 2007; Sesli & Denchev 2008; Akata et al. 2011, 2012; Allı et al. 2011), only two earth-tongues,

*Leotia lubrica* (Scop.) Pers. and *Spathularia flavida* Pers., have thus far been registered from Turkey.

Here we report the first Turkish collections of two additional earth-tongue genera, *Spathulariopsis* and *Trichoglossum*.

## Materials & methods

Specimens were collected from Uzungöl Nature Park in 2011. The samples were photographed in the field and relevant morphological and ecological characteristics of the samples were recorded. Macroscopic and microscopic data were obtained using standard mycological techniques, and the specimens were identified by consulting Arora (1986), Hansen & Knudsen (2000), Breitenbach & Kränzlin (1984), and Jordan (2004). The specimens are kept in the herbarium of Ankara University, Ankara, Turkey (ANK).

## Taxonomy

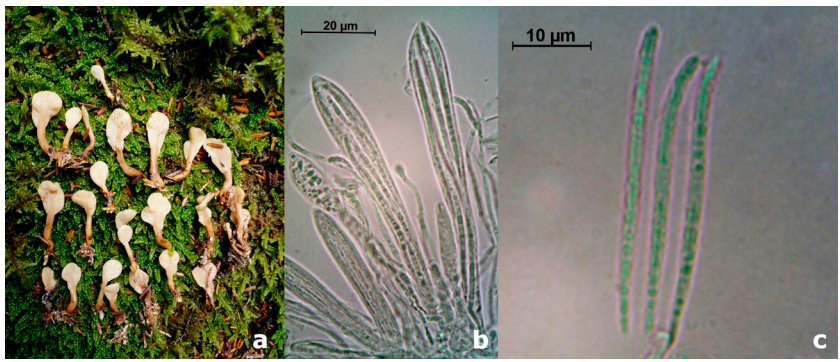


Figure 1. *Spathulariopsis velutipes* (Akata 4189): a. ascocarps; b. asci; c. ascospores.

***Spathulariopsis velutipes*** (Cooke & Farl. ex Cooke) Maas Geest., Proc. K. Ned. Akad. Wet., Ser. C, 75: 254. 1972 Fig. 1

Ascocarp 20–60 mm tall, spathulate, with a distinct head and stipe; head flattened or laterally compressed, pale yellow to brownish yellow or cream colored and usually wrinkled or fairly smooth; flesh whitish and insubstantial; stipe 10–30 × 5–8 mm, compressed and flattened at apex, cylindrical below, ochre to reddish-brown and minutely velvety, with a typical orangish basal mycelium.

Asci 70–90 × 8–12 µm, clavate, multiseriate eight spored, inamyloid; paraphyses up to 2 µm broad, slender, tips spirally curved; ascospores 35–40 × 2–2.5 µm, needle-shaped, hyaline, smooth, sometimes septate, usually with several droplets.

Specimen examined — **TURKEY**. **Trabzon**, Çaykara, Uzungöl Nature Park, in spruce (*Picea orientalis* (L.) Pererm.) forest, 40°37′N 40°18′E, 1420 m, 23.10.2011, Akata 4189 (ANK).

Comments — *Spathulariopsis velutipes* could be confused with *Spathularia flavida* due to its similar morphology. *Spathularia flavida* has a paler (whitish) smooth stipe, while *S. velutipes* has a minutely fuzzy, brownish stipe, orange basal mycelium, and shorter spores (Phillips 2005; Kuo 2005).

***Trichoglossum hirsutum*** (Pers.) Boud., Hist. Classific. Discomyc. Europe: 86. 1907,
**var. *hirsutum*** Fig. 2

Ascocarp 40–70 mm tall, clavate, fertile head 10–15 × 5–8 mm, spathulate to clavate, tapering into the slender compressed and grooved stipe; stipe 2–3 mm thick, cylindrical. Surface dry, black to brownish black with velvety hairs; Flesh black and brittle.

Asci 170–210 × 20–25 µm, cylindrical to clavate, eight spored, spores parallel in ascus, amyloid; paraphyses filiform, curved, slightly swollen at the tips. ascospores 120–140 × 6–7 µm, bacilliform, smooth, brown, with 15 septa. setae up to 170 µm, thick walled, dark brown to black.

Specimen examined — **TURKEY**. **Trabzon**, Çaykara, Uzungöl Nature Park, on soil, near mixed spruce (*Picea orientalis*) and beech (*Fagus orientalis* Lipsky) forest, 40°36′N 40°16′E, 1470 m, 27.08.2011, Akata 4077 (ANK).

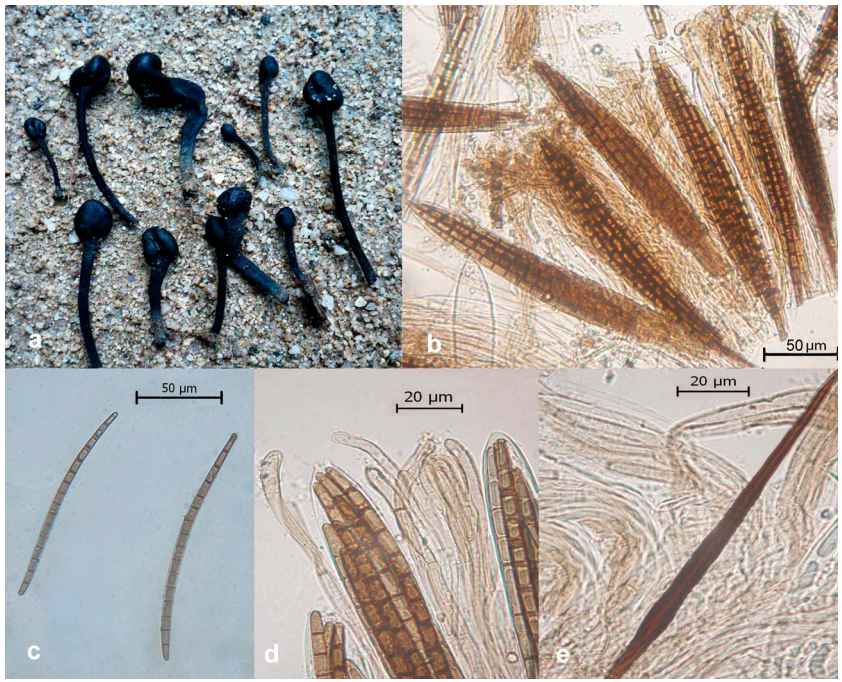


Figure 2. *Trichoglossum hirsutum* (Akata 4077):
a. ascocarps; b. asci; c. ascospores; d. paraphyses; e. seta.

Comments —*Trichoglossum* representatives differ from other black earth-tongues primarily by the velvety hair covering their ascocarps. Morphologically it is difficult to distinguish *Trichoglossum* taxa from each other. *Trichoglossum hirsutum* and *T. tetrasporum* Sinden & Fitzp. can be distinguished from other *Trichoglossum* species only at maturity by their 15-septate bacilliform spores. Asci of *T. hirsutum* contain eight spores while those of *T. tetrasporum* contain four (Hansen & Knudsen 2000, Breitenbach & Kränzlin 1984).

**Acknowledgments**

The authors would like to thank Prof. Dr. M. Halil Solak, Assoc. Prof. Dr. Aziz Türkoğlu, Assoc. Prof. Dr. Dursun Yağız, and Dr. Shaun Pennycook for their helpful comments and careful review of this article.

**Literature cited**

Akata I, Halıcı MG, Uzun Y. 2011. Additional macrofungi records from Trabzon province for the mycobiota of Turkey. Turkish Journal of Botany 35: 309–314.

Akata I, Kaya A, Uzun Y. 2012. New ascomycete records for Turkish macromycota. Turkish Journal of Botany 36: 420–424.

Allı H, Işıloğlu M, Solak MH. 2011. New ascomycete records for the macrofungi of Turkey. Turkish Journal of Botany 35: 315–318.

Arora D. 1986. Mushrooms demystified. Berkeley, Ten Speed Press.

Breitenbach J, Kränzlin F. 1984. Fungi of Switzerland, vol. 1. Lucerne, Verlag Mykologia.

Hansen L, Knudsen H. 2000. Nordic macromycetes (ascomycetes), vol. 1. Copenhagen, Nordsvamp.

Hustad VP, Miller AN, Moingeon JM, Priou JP. 2011. Inclusion of *Nothomitra* in *Geoglossomycetes*. Mycosphere 2: 646–654. http://dx.doi.org/10.5943/mycosphere/2/6/5

Jordan M. 2004. The encyclopedia of fungi of Britain and Europe. Edinburgh, David & Charles Book Co.

Kirk PF, Cannon PF, Minter DW, Stalpers JA. 2008. Dictionary of the fungi, 10th Ed. Wallingford, CAB International.

Kuo M. 2005. *Spathulariopsis velutipes*. MushroomExpert.Com [http://www.mushroomexpert.com/spathulariopsis_velutipes.html].

Phillips R. 2005. Mushrooms and other fungi of North America. Canada, Firefly Books Ltd.

Sesli E, Denchev CM. 2008. Checklists of the myxomycetes, larger ascomycetes, and larger basidiomycetes in Turkey. Mycotaxon 106: 65–67; up-dated online version (January 2013): 1–145. http://www.mycotaxon.com/resources/checklists/sesli-v106-checklist.pdf

Solak MH, Işıloğlu M, Kalmış E, Allı H. 2007. Macrofungi of Turkey. Checklist. İzmir, Üniversiteliler Ofset.

Wang Z, Nilsson RH, Lopez-Giraldez F, Zhuang WY, Dai YC, Johnston PR, Townsend JP. 2011. Tasting soil fungal diversity with earth tongues: phylogenetic test of SATÉ alignments for environmental ITS data. PLoS ONE 6(4): e19039. http://dx.doi.org/10.1371/journal.pone.0019039

Zhuang WY. 1998. Flora Fungorum Sinicorum, vol. 8, *Sclerotiniaceae* et *Geoglossaceae*. Beijing, Science Press.