

Two New *Helvella* Records For Turkish Mycobiota

Ilgaz AKATA¹

Abdullah KAYA^{2*}

¹Ankara University, Science Faculty, Department of Biology, Ankara, TURKEY

²Karamanoglu Mehmetbey University, Kamil Özdag Science Faculty, Department of Biology, Karaman, TURKEY

*Corresponding Author

e-mail:kayaabd@hotmail.com

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Abstract

Two *Helvella* species, *Helvella macropus* (Pers.) P. Karst and *H. pezizoides* Afzel. are given as new records for Turkey. Short descriptions and photographs related to macro and micromorphologies of the species are provided and discussed briefly.

Keywords: *Helvella*, biodiversity, macrofungi, new records, Turkey

INTRODUCTION

Helvella, commonly known as elfin saddles or false morels, is a genus of the family *Helvellaceae* (*Ascomycota*) [1]. The members of the genus, are characterized by sub sessile or stipitate fruiting body, cup to saddle shaped apothecia, smooth, wavy or wrinkled hymenium, 1-2 mm thick flesh, operculate to nonamyloid asci, and cylindrical and tapering or grooved and ribbed stem, ellipsoid to fusoid, hyaline, smooth to verrucose spores with one large central oil droplet [2].

The genus, which was erected by Linnaeus in 1753 to accommodate *Elvela mitra* (= *Helvella crispa* of Fries, 1823) [2], currently includes 52 conformed taxa [1]. *Helvella* species often grow singly or in groups on mull and calcareous soil, in forests, along streams and brooklets, rarely on rotting woods, and they are most numerous in the spring but a few species fruit during summer and autumn [3]. Most species within genus were reported from temperate areas [4].

According to the current checklists [5,6] and recent contributions [7-13], nineteen *Helvella* species (*H. acetabulum* (L.: Fr.) Quel., *H. atra* J. König, *H. costifera* Nannf., *H. crispa* (Scop.: Fr.) Fr., *H. dissingii* Korf, *H. elastica* Bull.: Fr., *H. ephippium* Lev., *H. fibrosa* (Wallr.) Korf, *H. fusca* Gillet, *H. lactea* Boud., *H. lacunosa* Afzel.: Fr., *H. latispora* Boud., *H. leucomelaena* (Pers.) Nannf., *H. leucopus* Pers., *H. monachella* (Scop.: Fr.) Fr., *H. philonotis* Dissing, *H. queletii* Bres., *H. solitaria* (P. Karst.) P. Karst., *H. spadicea* Schaef.) have so far been reported from Turkey.

With the present study, *Helvella macropus* (Pers.) P. Karst and *Helvella pezizoides* Afzel. are given as new records for Turkish mycobiota. The aim of the study was to make a contribution to Turkish mycobiota.

MATERIALS AND METHODS

Macrofungi samples were collected from Yomra district of Trabzon province (Turkey) in 2011. During field study, necessary morphological and ecological features of the specimens were recorded and they were photographed in their natural habitats. Then the samples were taken to the laboratory for further investigation. Some reagents (distilled water, Melzer's reagent, 5% KOH) were used for microscopic investigation. Microphotographs were taken under a Leica DM 1000 light microscope. Identification of the taxa was performed with the help of the relevant literature [14-16]. The specimens were deposited at the Ankara University Herbarium (ANK).

RESULTS

Fungi

Ascomycota R.H. Whittaker

Pezizomycetes O.E. Erikss. & Winka

Helvellaceae Fr.

Helvella macropus (Pers.) P. Karst, *Bidr. Känn. Finl. Nat. Folk* **19**: 37 (1871)

Synonymy: *Cowlesia bulbosa* (Hedw.) Nieuwl, *Cyathipodia bulbosa* (Hedw.) Boud., *Cyathipodia macropus* (Pers.) Dennis, *Helvella bulbosa* (Hedw.) Kreisel, *Lachnea bulbosa* (Hedw.) W. Phillips, *Lachnea macropus* (Pers.) W. Phillips (1887), *Macropodia bulbosa* (Hedw.) Fr., *Macropodia macropus* (Pers.) Fuckel, *Macroscyphus macropus* (Pers.) Gray, *Octospora bulbosa* Hedw., *Peziza bulbosa* (Hedw.) Nees, *Peziza macropus* Pers., *Peziza stipitata* Huds.

Macroscopic and microscopic features

Head 15-25 mm broad, cup to disc-shaped, hymenium smooth, gray to pale grayish brown, outer surface the same color or lighter than hymenium, hairy, especially near the margin. Stipe 15-40 × 2-5 mm, cylindrical at first, in age compressed, thickened toward to base, felty to hairy, the same color as outside of cup (Figure 1a). Asci 240-280 × 15-18 μm, cylindrical, eight spored, uniseriate paraphyses cylindrical and thickened on the tips (Figure 1b). Ascospores 21-22 × 11-12 μm, elliptical to fusiform, usually punctate, more rarely smooth, with one large central oil droplet (Figure 1c) and sometimes 1-2 smaller oil droplets at each end.

Ecology

Summer to fall, solitary to scattered, occasionally gregarious, in hardwood and coniferous forests, on soil, widespread [14-16].

Specimen examined

Trabzon, Yomra, İkisü village, in common hazel (*Corylus avellana* L.) garden, on soil, 40°56' N - 39°47' E, 250 m, 21.10.2011, Akata 4146.

Helvella pezizoides Afzel., *K. svenska Vetensk-Akad. Handl.* 4: 308 (1783)

Synonymy: *Helvella cookeana* (Boud.) Sacc. & Traverso, *Lachnea helvelloides* (Fr.) W. Phillips, *Leptopodia cookeana* Boud., *Leptopodia pezizoides* (Afzel.) Boud., *Peziza helvelloides* Fr.

Macroscopic and microscopic features

Head 15-35 mm broad, saddle-shaped with the upper corners nearly or completely touching, the margin rolled upwards when young, expanding in age, the lobes of head then pressed against stipe, upper surface dark brownish gray to black, lower surface slightly paler than top, undersurface densely fuzzy or hairy, grayish, in age ingrown with the stipe. Stipe 30-40 × 5-10 mm, same color as or lighter than the lower side of head, smooth or finely fuzzy (Figure 2a). Asci 235-250 × 13-14 μm, cylindrical, eight spored, uniseriate, paraphyses cylindrical tips with slight clavate (Figure 2b). Ascospores 18-20 × 11-12 μm, elliptical to fusiform, with one large oil droplet, usually smooth (Figure 2c).

Ecology

Summer to fall, solitary to gregarious, in hardwood and coniferous forests, on soil, rare [14].

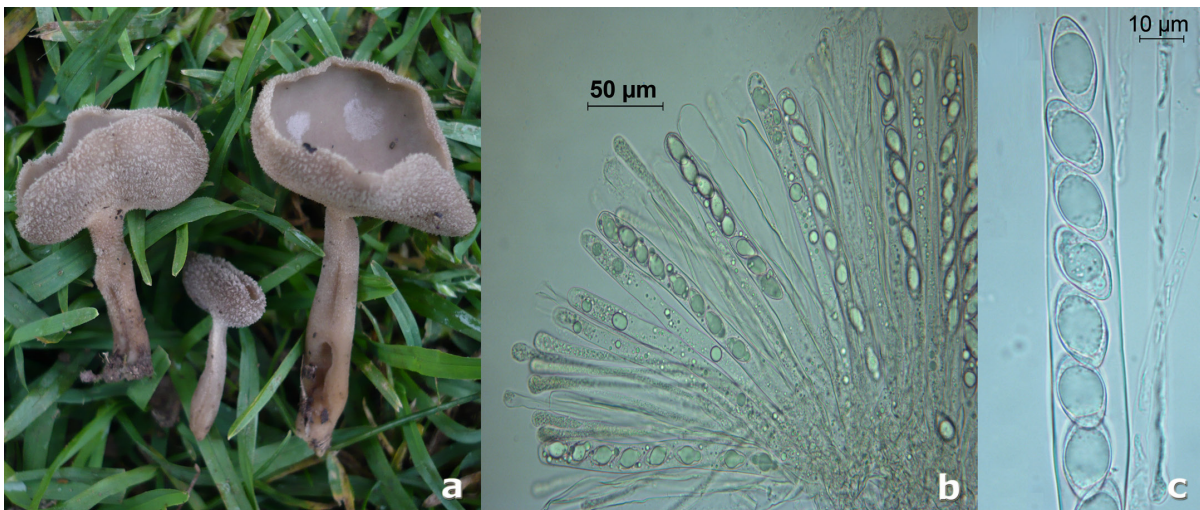


Figure 1. *Helvella macropus*: a. ascomycetes, b. asci and paraphyses, c. spores.

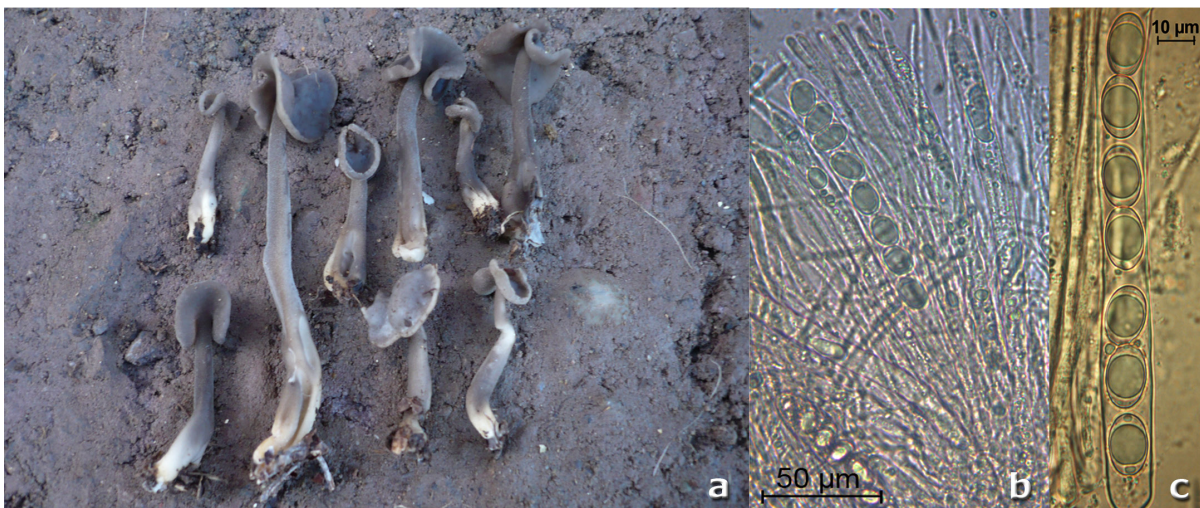


Figure 2. *Helvella pezizoides*: a. ascomycetes, b. asci and paraphyses, c. spores.

Specimen examined

Trabzon, Yomra, Pınarlı village, in common hazel (*Corylus avellana* L.) garden, on soil, 40°53' N - 39°49' E, 640 m, 25.10.2011, Akata 4284.

DISCUSSION

The species of *Helvella* are distinguishable each other largely on the bases of the size, color, shape and configuration of the stipe and pileus [17]. But the similarity in macrofeatures, sometimes, make it difficult to distinguish the members of the genera from each other. *H. macropus* resembles *Helvella villosa* Schaeff., *Helvella corium* (O. Weberb.) Masee, *Helvella cupuliformis* Dissing & Nannf. and *Helvella pallidula* N.S. Weber in terms of morphology and ecology. But the spindle-shaped spores of *H. macropus* easily distinguishes it from the others that have elliptical spores.

Among the *Helvella* species with smooth stems, especially *H. ephippium* Lev. and *H. atra* J. König are closely similar to *H. pezizoides*. But it is distinguished from these taxa with black, saddle-shaped or loosely lobed cap with densely fuzzy undersurface and strongly uprolled margin [18].

With this study new distributions of *Helvella macropus* (Pers.) P. Karst and *H. pezizoides* Afzel. were given and a contribution was made to Turkish mycobiota by increasing the current *Helvella* number to 21 in Turkey.

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