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A New Genus Record For Turkish Clathroid Fungi

Ilgaz AKATA*[1], Cem Tolga GÜRKANLI[2]

**Corresponding author: akata@science.ankara.edu.tr*

[1]Ankara University, Faculty of Science, Department of Biology, Ankara, Turkey
[2] Ordu University, Fatsa Faculty of Marine Sciences, Department of Fisheries Technology Engineering, Ordu, Turkey

Abstract: This study is based on the clathroid fungi samples collected from Edirne province in November 2017. As a result of field and laboratory studies, *Colus hirudinosus* Cavalier & Séchier belonging to the family *Phallaceae* Corda was reported as a new record at genus level for Turkish clathroid fungi. Short description of the newly reported species was given together with its photographs related to macro and micromorphologies and discussed briefly.

Key words: *Colus hirudinosus,* clathroid fungi, new record, Turkey

Türkiye Clathroid Mantarları İçin Yeni Bir Cins Kaydı

Öz: Bu çalışma Edirne yöresinden Kasım 2017'de toplanan clathroid mantar örneklerine dayanmaktadır. Arazi ve laboratuvar çalışmaları sonucunda, *Phallaceae* Corda familyasına mensup *Colus hirudinosus* Cavalier & Séchier Türkiye clathroid mantarları için cins düzeyinde yeni kayıt olarak rapor edilmiştir. Yeni kayıt türün kısa betimlemesi, makro ve mikro morfolojilerine ilişkin fotoğrafları ile birlikte verilmiş ve kısaca tartışılmıştır.

Anahtar kelimeler: *Colus hirudinosus,* clathroid mantarlar, yeni kayıt, Türkiye

Introduction

Clathroid fungi, commonly known as cage fungi, is a group of the family *Phallaceae,* members of which possess an interesting strategy to disperse their spores by several kinds of instects as dispersal agents, especially via *Diptera* species. They have wide geographical distribution, however, they can be recognized in temperate as well as tropical regions (Gaona et al., 2017; Baseia et al., 2006). The Family *Phallaceae* is consisted of clathroid and phalloid members due to their branched and unbranched basidiomata (Cabral et al., 2012). While phalloid fungi have unbranched basidiomata with a cylindrical, hollow pseudostipe and mucilaginous gleba covering external surface of the receptacle, clathroid fungi have branched basidiomata with globose to star like receptacle whose internal surface is covered by mucilaginous gleba (Calonge, 1998; Gaona et a.l, 2017).

Colus is a genus of clathroid fungi and it includes 7 (*Colus giganteus* Dörfelt & Bumžaa, *C. hirudinosus* Cavalier & Séchier, *C. muelleri* E. Fisch., *C. pusillus* (Berk.) Reichert, *C. stahelii* (E. Fisch.) Reichert, *C. subpusillus* Dring, *C. treubii* (C. Bernard) Reichert) currently existing species (Url1). The genus is primarily characterized by branched basidiomata with ovoid to pyriform receptacle, rudimentary pseudostipe with whitish to greyish volva, olive to olive brown, mucilaginous gleba covering internal surface of the arched reticulum, hyaline, smooth and ellipsoid spores (Calonge, 1998).

According to the literature (Akata, 2017; Akata and Doğan, 2011; Akata and Uzun, 2017; Allı et al., 2007; 2017; Baydar and Sesli, 1994; Selik and Sümer 1982; Sesli and Denchev 2008) 3 clathroid fungi members (*Anthurus muellerianus* Kalchbr, *Clathrus ruber* P. Micheli ex Pers. and *Pseudocolus fusiformis* (E. Fisch.) Lloyd) have thus far been reported from Turkey, but there is not any record related to the genus *Colus* Cavalier & Séchier in Turkey.

The purpose of the present study is to make a contribution to the Turkish mycobiota.

Materials and Methods

Fungal samples were collected from Edirne province (Turkey) on 24 November 2017. Relevant macroscopic and ecological properties of the samples were noted and they were photographed in the field. Afterwards, the samples were taken to the herbarium for further investigation. Microstructural data was obtained and micrographs of basidiospores were taken with “Leica DM 1000” bright field light microscope. The identification of the species was performed according to Calonge (1998). The identified samples were prepared as herbarium materials and kept at Ankara University Herbarium (ANK).

Results

Phallaceae Corda

Colus Cavalier & Séchie

Colus hirudinosus Cavalier & Séchier (Fig. 1).

Immature basidiomata 15-25mm broad, globose to ovoid, resembling egg shaped, exoperidium membranous, whitish to pinkish, smooth, endoperidium mucilaginous. Mature basidiomata 40-60 × 20-30mm, receptacle pyriform, with an apical arched bright red reticulum, the meshes are polygonal, 6-7 pinkish to pale orange columnar elements fusing at the base to form the pseudostipe within the volva. Gleba olive to brownish olive, mucilaginous covering internal surface of the reticulum with repellent odour. Flesh spongy. Basidia not observed. Basidiospores 4.5-6 × 1-2µm, cylindrical to ellipsoid, smooth, hyaline.

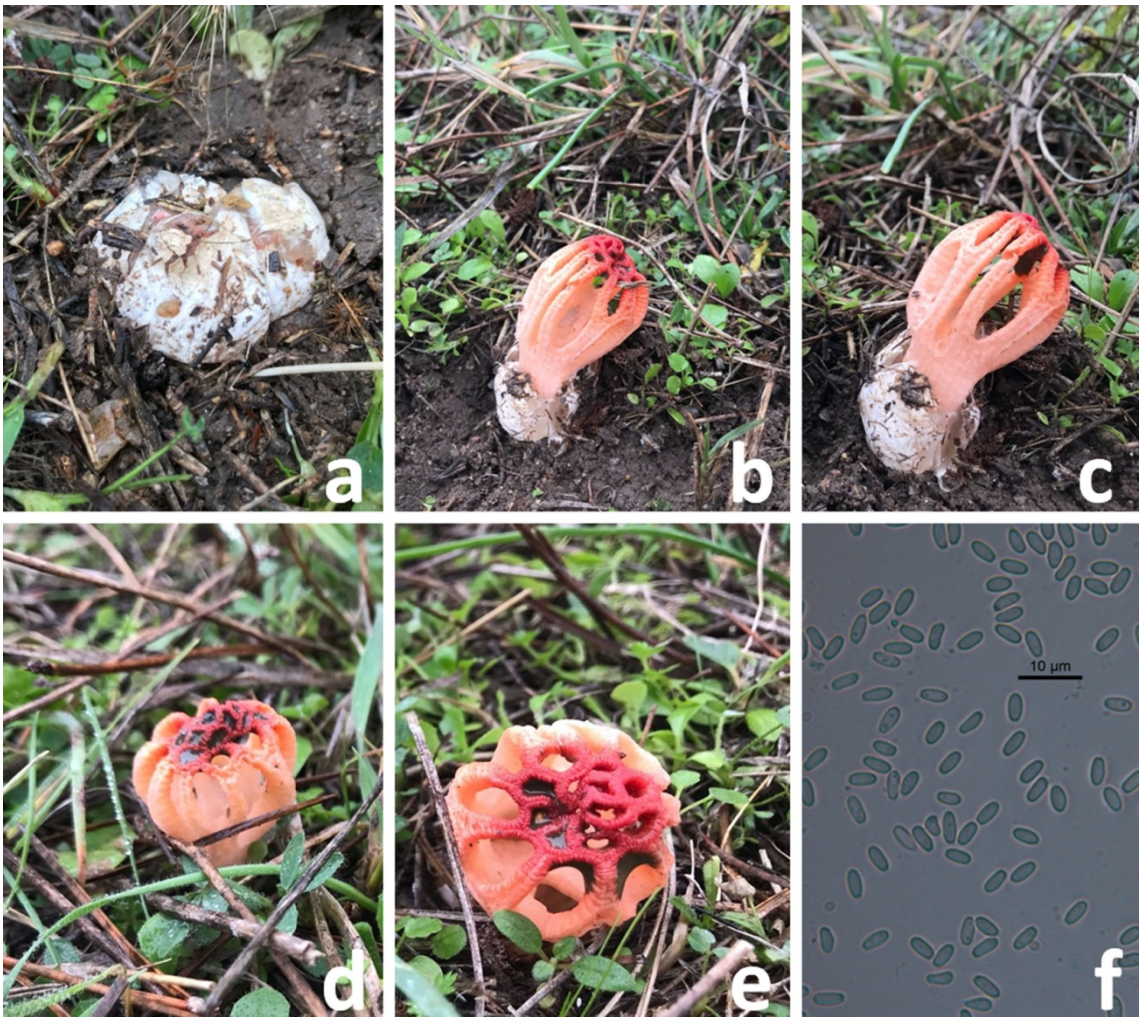

Figure 1. *Colus hirudinosus*: a. immature basidiomata, b-e. mature basidiomata, f. basidiospores.

Ecology: Autumn, solitary or scattered, on soil, gardens, pathways, open forest and woodland (Calonge 1998).

Specimen examined: TURKEY- Edirne, Musabeyli village, in pastureland, near pine, on soil, among grasses, 41°42'3.85" N - 26º40'48.30" E, 123m, 24 November 2017, leg. Akata & Gürkanlı, Akata 7017.

Discussion

Colus hirudinosus is characterized by branched, pyriform basidiomata with an apical arched reticulum, carrying the gleba on the internal surface, sustained by 4-8 column-like elements. *Colus pusillus* (Berk.) Reichert macroscopically resembles *C. hirudinosus* due to their similar size, structure and coloration but the mesh-like structure at the apex of the former species is much larger and more open (Calonge 1998). *Clathrus ruber* P. Micheli ex Pers. can also be confused with C.hirudinosus in terms of their morphology and ecology but C.ruber has larger basidiomata with a different receptacle (Pegler et al.,1995).

With this study, *Colus hirudinosus* Cavalier & Séchier was recorded for the first time from Turkey at the genus level and it will be the 4th member of Turkish clathroid fungi.

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