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Research Article

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## ***Mucronella*, A New Genus Record from Türkiye**

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**Abstract:** The genus *Mucronella* was reported from Türkiye for the first time, based on the collection and identification of *Mucronella calva*, a distinct fungus with tiny spine-shaped and pendent basidiocarps without a subiculum, from İstanbul province. A brief description of the identified collection is provided together with the photographs, related to its macro and micromorphologies.

**Keywords:** Biodiversity, New record, Spine-shaped fungus, Türkiye

### ***Mucronella*, Türkiye'den Yeni Bir Cins Kaydı**

**Öz:** *Mucronella* cinsi, sapsız, küçük diken şekilli ve sarkık baziyokarplı belirgin bir mantar olan *Mucronella calva*'nın İstanbul'dan toplanıp teşhis edilmesine bağlı olarak Türkiye'den ilk kez kaydedilmiştir. Teşhis edilen örneğin kısa bir betimlemesi, makro ve mikromorfolojilerine ilişkin fotoğraflarıyla birlikte verilmiştir.

**Anahtar kelimeler:** Biyoçeşitlilik, Yeni kayıt, Diken şekilli mantar, Türkiye

#### **Introduction**

*Mucronella* Fr. is a widespread basidiomycetous macrofungi genus within the order Agaricales (Kirk et al., 2008), The members of the genus are characterized by small downwards-turned subulate basidiocarps without a distinct subiculum, four-spored small basidia, ellipsoid to globose, smooth, hyaline and thin-walled basidiospores, monomitic hypha with clamps, and the occurrence on wood and bark. In general appearance, the species of the genus resemble a small *Clavaria* Vaill. ex L. or *Pterula* Fr. but the pendent spines fundamentally differ them from the members of such genera (Miller, 1933a,b; Frukawa, 1974; Bernicchia and Padovan, 1997; Mackinnon and Luther, 2021)

*Mucronella* was established in 1874 as a genus of *Hydnaceae*. Later on, in 1950, it was transferred to *Clavariaceae* by Corner, based on its hyphal system (Frukawa, 1974). Currently, Indexfungorum (2024) does not include it in a current family while Mycobank (2024) still includes in *Clavariaceae*.

According to the checklist of macrofungi of Türkiye (Sesli et al., 2020) and the contributions made after 2020 (Polat and Keleş, 2022; Şengül Demirak et al., 2022; Sesli, 2023; Şahin et al., 2023; Yeşilyurt et al., 2023) indicate that, any member of the genus *Mucronella* have been reported from Türkiye.

The study aims to contribute to the mycobiota of Türkiye.



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Atıflamada APA stili kullanılmıştır, iThenticate ile taranmıştır./ APA style was used in citation, plagiarism was checked with iThenticate.

## Material and Metod

The specimens of *M. calva* were collected from Polonezköy Nature Park in Beykoz (İstanbul) district, during a field work in 2024. The fruiting organs were photographed at its naturally growing site using a digital camera. Required notes were taken related to ecology, morphology and geography of the collection. Preservation was made in accordance with standard methods. Investigations related to micromorphology were based on dry specimens, and carried out under a Leica DM 2500 trinocular compound microscope. 3% KOH was used for rehydration. Meltzer reagent and lactophenol cotton blue were used for coloring. Twenty five measurements were made for each microstructure. Colour microphotographs were obtained with the help of a digital camera attached to a the compound microscope.

Identification of the specimen was performed by comparing the obtained characteristics with Breitenbach and Kränzlin (1986), Buczacki (2012), Bernicchia and Padovan (1997), Laessøe and Petersen (2019).

The specimens are kept at Karamanoğlu Mehmetbey University, Kâmil Özdağ Science Faculty, Department of Biology.

## Results

**Fungi** R.T. Moore

**Basidiomycota** R.T. Moore

**Agaricomycetes** Doweld

**Agaricales** Underw.

**Incertae sedis**

***Mucronella calva*** (Alb. & Schwein.) Fr., Hymenomyc. eur. (Upsaliae): 629 (1874)

**Synonymy:** *Hydnum calvum* Alb. & Schwein., *Isaria calva* (Alb. & Schwein.) Fr., *Isaria hydnoides* Link, *Mucronella abnormis* Henn., *Mucronella aggregata* (Fr.) Fr., *Mucronella aggregata* f. *citrina* Bourdot, *Mucronella calva* f. *ramificata* Pilát, *Mucronella calva* var. *aggregata* (Fr.) Pilát, *Mucronia aggregata* Fr., *Mucronia calva* (Alb. & Schwein.) Fr.

**Macroscopic and microscopic features:** Fruiting bodies composed of single or densely grouped, pendent, subulate, spines of 0.6-1.2 mm long and 0.1-0.3 mm thick (Fig. 1). Fruiting organs are positively geotropic, and generally attached directly to the substrate without a subiculum. Spines needle to awl-shaped, some curved, round in cross-section, ending in a sharp conical point, solid, white or whitish to yellowish cream, solid, smooth to minutely hairy. Taste and odor indistinct.

Basidia 17-20 × 6-7,5 µm, slenderly clavate with 4 sterigmata. Basidiospores 3.6-4.4 × 2.3-2.7 µm, ellipsoid to oval, smooth, thin-walled (Fig. 2). Hyphal system monomitic with scattered tetrahedral crystals. Clamp connections present (Breitenbach and Kränzlin, 1986; Buczacki, 2012; Læssøe and Petersen, 2019).

*Mucronella* species are brown-rot fungi growing on well-decayed wood (Mackinnon and Luther, 2021), and *Mucronella calva* was reported to grow on decaying conifer and deciduous wood, typically on the undersides (Breitenbach and Kränzlin, 1986; Bernicchia and Padovan, 1997; Shiryayev and Irsenaite, 2009; Buczacki, 2012).

**Specimen examined:** İstanbul, Beykoz, Polonezköy Nature Park, on decaying *Pinus pinaster* Aiton trunk, 41.110687, 29.2000669, 200 m, 02.02.2024, YKaraduman 10.

Suggested Turkish name for the genus is “Sarkıt mantarı”, and for the species is “Çam sarkıtı”.

## Discussions

*Mucronella calva* was reported for the first time from Türkiye. It is the first reported member of the genus *Mucronella* in Türkiye. General characteristics of Turkish collection are generally in agreement with those previous reports (Breitenbach and Kränzlin, 1986; Buczacki, 2012; Laessøe and Petersen, 2019).

Though it looks like a miniature *Hericium erinaceus* (Bull.) Pers., inverted growth form and lignicolous habit makes this toot fungus easily recognizable. Presence of crystals in the hyphal tissue is also another interesting aspect of this fungus (Mycoweb, 2024).

The basidiomata of *Dentipratulum Domański* also have similar appearance with *Mucronella* species, but the presence of gloeocystidia differs it from *Mucronella* (Larson, 2007).

Sometimes two *Mucronella* species can be found growing in side-by-side clumps and may be confused (Mackinnon and Luther, 2021). General morphological appearance of *M. calva* is also very similar to *M. bresadolae* (Quél.) Corner but the larger (up to 5 mm long and up to .6 mm thick) spines, longer basidia (25-37 µm) and the bigger basidiospores (4.5-8.5 × 4-7 µm) of the latter species clearly separates it from *M. calva* (Breitenbach and Kränzlin, 1986; Desjardin et al., 2015; Laessøe and Petersen, 2019).

## Author contributions

The authors have equal contribution.

## Conflicts of interest

The authors declare no competing interests.

## Ethical Statement

It is declared that scientific and ethical principles have been followed while carrying out and writing this study and that all the sources used have been properly cited (Faruk YEŞİLYURT, Yakup KARADUMAN, Yasin UZUN, Abdullah KAYA).



Figure 1. Basidiocarps *Mucronella calva*

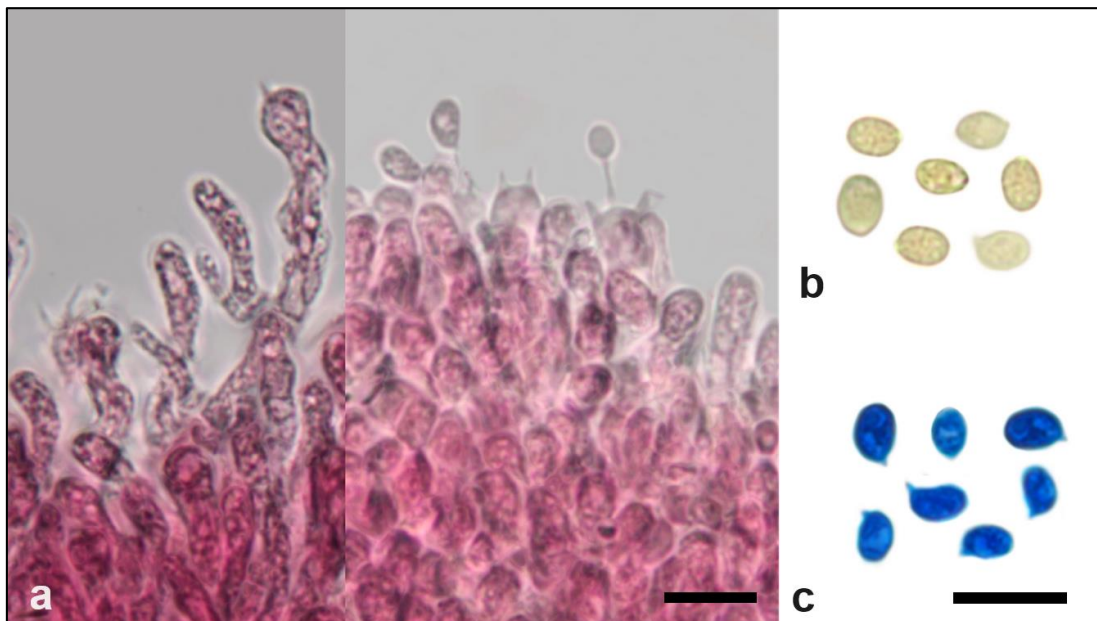


Figure 2. Basidia (a), and basidiospores (b-c) of *Mucronella calva* (bars: 10  $\mu$ m) (b- Melzer, c- LPCB).

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