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A new record of vibrisseaceous fungus from Hakkari (Türkiye)

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Hakkâri (Türkiye)'den yeni bir vibrisseaceous mantar kaydı

Abstract: This study involved specimens of the genus *Vibrissea* Fr. growing on submerged wood, rubbish or other submerged organic matter in freshwater habitats collected in Şemdinli (Hakkâri) on 01.05.2015. The *Vibrissea* specimens, characterised by small and delicate fructification organs in the form of cups or bowls, were identified based on morphological data. In this text, *Vibrissea decolorans* (Saut.) A. Sánchez & Korf is described and illustrated to be a new record for the *Ascomycota* of Türkiye. The text provides a brief description of the newly recorded genus including collection date, geographical coordinates, macro- and micromorphological characteristics.

Key words: *Ascomycota*, new record, *Vibrisseaceae*, Türkiye

Özet: Bu çalışma 01.05.2015 yılında Şemdinli'de (Hakkâri) toplanan tatlı su habitatlarında batık odun, çöp veya diğer batık organik maddeler üzerinde yetişen *Vibrissea* Fr. cinsinin örneklerini kapsamaktadır. Fincan veya çanak şeklinde küçük ve narin fruktifikasyon organları ile karakterize edilen *Vibrissea* örneği morfolojik verilere dayanılarak teşhis edilmiştir. Bu metinde, *Vibrissea decolorans* (Saut.) A. Sánchez & Korf'un Türkiye'deki *Ascomycota* üyeleri için yeni bir kayıt olduğu belirtilmiş ve gösterilmiştir. Metin yeni kaydedilen taksonun toplanma tarihi, coğrafi koordinatları, makro ve mikromorfolojik özelliklerini içeren kısa bir betimini sunmaktadır.

Anahtar Kelimeler: *Ascomycota*, yeni kayıt, *Vibrisseaceae*, Türkiye

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1. Introduction

Leotiomycetes (*Pezizomycotina*), formed by the division of the superclass *Leotiomyceta* into seven classes, is a very diverse class (Eriksson and Winka, 1997). Although *Leotiomycetes* consists of 13 orders, eight of which are monotypic, more than 200 genera are represented by a single species (Baral, 2016; Wijayawardene et al., 2018; Ekanayaka et al., 2019; Johnston et al., 2019; Karunarathna et al., 2020). *Helotiales*, which is among the orders of *Leotiomycetes*, contains the highest number of genera many of which are not assigned in a family (approximately 90-151) (Quijada et al., 2018; Wijayawardene et al., 2018; Karunarathna et al., 2020). *Helotiales*, a polyphyletic order, is estimated to have more than 70,000 species and is currently represented by only 2.334 species belonging to 423 genera in 25 families, accounting for half of all known species in *Leotiomycetes* (Ekanayaka et al., 2019; Karunarathna et al., 2020). The family *Vibrisseaceae* within the *Helotiales* was organised by Korf in 1990 to include the genera *Vibrissea* Fr., *Chlorovibrissea* L.M. Kohn and *Leucovibrissea* (A. Sánchez) Korf.

Species belonging to the family *Vibrisseaceae* are usually aquatic or wet soil dwellers, with sessile or long-stalked apothecia which are disc-shaped, and whitish, yellowish, brownish, olive or blackish-green in colour. Also they have an ectal excipulum of textura globosa, textura angularis to textura prismatica and characteristic filiform ascospores. The three genera *Vibrissea*, *Chlorovibrissea* and *Leucovibrissea*, can be distinguished by the colour of the apothecia, the structure of the ectal excipulum and the apparatus of the ascal apex. Besides these three genera, *Acephala* Grünig & T.N. Sieber and *Phialocephala* W.B. Kendr. have also been included in this family in recent studies. Currently, the family contains 78 species, of which 2 are classified in *Acephala*, 6 in *Chlorovibrissea* 1 in *Leucovibrissea*, 33 in *Phialocephala* and 36 in *Vibrissea* (Korf, 1990; Sandoval-Leiva et al., 2014; Zheng and Zhuang 2017).

Previously published studies related to macrofungi of Türkiye (Akata et al., 2016; Uzun et al., 2017; Sesli et al., 2020; Acar 2023; Acar and Dizkırıcı, 2023; Akçay et al., 2023; Şahin et al., 2023; Uzun and Kaya, 2023a,b) indicates that only two members of vibrisseaceous fungi have been reported. In this study, *Vibrissea decolorans* (Saut.) A. Sánchez & Korf, is reported as a new record for Türkiye based on morphological data, as the third member of the vibrisseaceous species,.

2. Materials and Method

In 2015, fresh samples of *Vibrissea* were collected from the Şemdinli district of Hakkâri province. The specimens underwent meticulous examination. First they were photographed at their natural habitats, then transported to the laboratory, where they were subjected to macroscopic analysis following the methodologies outlined by Sánchez

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and Korf (1966), Sanchez (1967), and Korf (1990). Morphological characteristics were meticulously documented, with specimens deposited in both the Fungarium of Van Yüzüncü Yıl University (VANF) and the author's collection for future reference. Micromorphological investigations were conducted on dried specimens, by rehydrating with distilled water, and carried out under a Leica DM500 (Germany) research microscope, equipped with an oil immersion lense. Thin sections from various parts of the basidiomata were manually prepared for further examination. A minimum of 20 measurements were performed for both basidiospores and basidia using the Leica Application Suite (version 3.4.0). Illustrations accompanying the manuscript were crafted using CorelDRAW (64-bit) (Canada), ensuring accuracy and clarity in depicting the observed characteristics of *Vibrissea*.

3. Results

Ascomycota Caval.-Sm.

Leotiomycetes O.E. Erikss. & Winka

Helotiales Nannf.

Vibrisseaceae Korf

Vibrissea Fr.

Vibrissea decolorans (Saut.) A. Sánchez & Korf . (Figure 1-3).

Syn: [*Apostemidium decolorans* Boud., *Belonopsis decolorans* (Saut.) Rehm, *Gorgoniceps decolorans* (Saut.) Sacc., *Helotium decolorans* Saut., *Peziza decolorans* Saut.].

Ascocarp 1-3.5 mm in diameter and sessile. **Disc** bluish grey or yellow, rarely dark or orange, the lower part brown or dark brown. **Asci** 270-370 × 7-9 µm and ascus stalk 10-25 µm long. **Ascospores** (180)250-350 × 1-2.3 µm, seems to be combined in the ascus if not looked at on closer inspection. **Paraphyses** identical, rarely one or two branched, clavate or slightly enlarged at apex.

Vibrissea decolorans is reported to grows on decaying branches of *Carpinus* L., *Rubus* L., *Prunus* L. spp., and similar trees (Sanchez, 1967).

Figure 1. Ascomata of *Vibrissea decolorans*

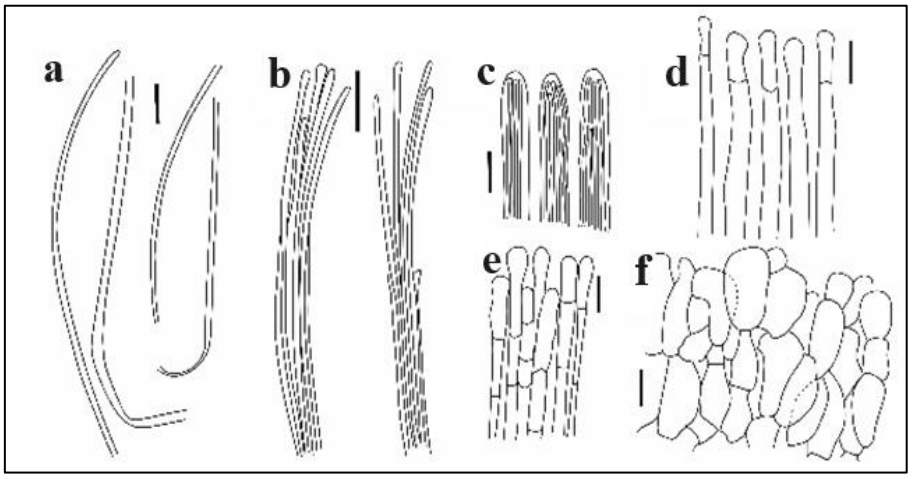

Figure 2. Ascospores particles (a), shattered asci (b), asci apex (c), asci base (d), paraphyses (e) and ectal excipulum of *Vibressea decolorans* (Scale bars: 10 µm)

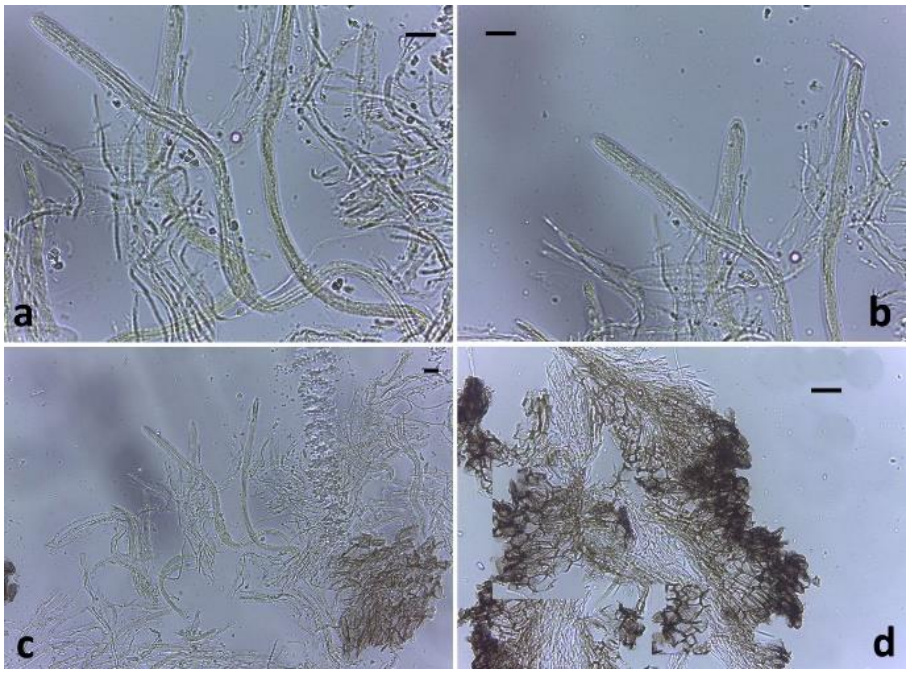

Figure 3. Asci, parphyses and ascospores (a-c) and ectal excipulum of *Vibressea decolorans* (Scale bars: 10 µm)

Specimen examined: Şemdinli, near Şabatan Passage, on decayingbrances of *Salix* L. sp., 37°21'687"N-44°32'461"E, 1723 m, 01.05.2015, Acar 927.

Suggested Turkish name for the presented species is "Renk değiştiren titreşimli mantar".

4. Discussions

The main distinguishing fueatures between the three genera of the family *Vibrisseaceae* are the colour of the apothecia and the structure of the ectal excipulum (Sandoval-Leiva et al., 2014; Zheng and Zhuang, 2017). The excipular cells of *Vibrissea*, the subject of our study, are more or less spherical and angular. They ayer mostly rectangular in the genera *Chlorovibrissea* and *Leucovibrissea* (Zheng and Zhuang, 2017).

Vibrissea decolorans is morphologically similar to *V. pezizoides*. However, *V. pezizoides* differs from *V. decolorans* in that the apothecia having a stalk-like base, the asci having long sterile stalks 50 to 70 µm, not bluished ascal acpical pore in iodine and the ascospores that are flat and dispersed in the ascus (Sanchez, 1967).

The most important noticeable difference between our sample and *Vibrissea flavovirens*, which has been previously published in Türkiye, is that *V. flavovirens* has a stalk (0.2-0.3 mm) and the length of ascospores is smaller (160-180 × 1.5-2 µm) (Akata et al., 2016). Another published species, *Vibrissea filisporia*, differs from our species in having shorter apothecium (0.4–1.5 mm), ascus (185–200 × 6–7 µm) and ascospores (150–185 × 1–1.5 µm) (Uzun et al., 2017).

In conclusion, *Vibressea decolorans* has been added as new record for to the mycobiota of Türkiye, as the third member vibrisseous fungi.

Conflict of interest

Authors have declared no conflict of interest.

Authors' contributions

The authors contributed equally.

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