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Scutellinia kerguelensis, A New Ascomycete Record for Turkey

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Abstract: *Scutellinia kerguelensis* (Berk.) Kuntze, is reported as a new record from Turkey, based on the samples collected from Trabzon province. A brief description and photographs, related to the macroscopy and microscopy of the species, are provided.

Key words: Biodiversity, new record, *Pyronemataceae*, Turkey

Scutellinia kerguelensis, Türkiye İçin Yeni Bir Askomiset Kaydı

Öz: *Scutellinia kerguelensis* (Berk.) Kuntze, Trabzon'dan toplanan örneklerin teşhis edilmesiyle, Türkiye'den yeni kayıt olarak rapor edilmiştir. Türün kısa bir betimlemesi ile makroskobi ve mikroskobisine ilişkin fotoğrafları verilmiştir.

Anahtar kelimeler: Biyoçeşitlilik, yeni kayıt, *Pyronemataceae,* Türkiye

Introduction

Scutellinia (Cooke) Lambotte is an operculate discomycete genus within the family *Pyronemataceae (Pezizales).* It is a cosmopolitan genus and contains the group of fungi characterized by a shield-like or dish-like bright red, orange-red, reddish-brown or brownish apothecial ascomata, globose to subglobose or ellipsoid to fusiform ascospores generally with evident wall ornamentation, and stiff, brown or blakish-brown hairs that arises from ectal excipulum (Breitenbach and Kränzlin, 1981; Yao and Spooner, 1996; Hansen and Knudsen, 2000; Cantrell and Hanlin, 2010; Han et al., 2010; Choi et al., 2013). Members of the genus are generally known as saprobic on wood and humus (Han et al., 2010).

Kirk et al. (2008) gives the known *Scutellinia* members as 66, but Index Fungorum (2021) list 123 conformed species name. Seven of them, *S. armatospora* Denison, *S. barlae* (Boud.) Maire, *S. crinita* (Bull.) Lambotte, *S. legaliae* Lohmeyer & Häffner, *S. scutellata* (L.) Lambotte, *S. trechispora* (Berk. & Broome) Lambotte and *S. umbrorum* (Fr.) Lambotte, known from Turkey (Pekşen and Karaca, 2003; Allı et al., 2011; Çolak and Kaygusuz, 2018; Keleş, 2019).

But the latest check-list on Turkish Fungi (Sesli et al., 2020; Uzun and Kaya, 2020) indicate that *Scutellinia kerguelensis* (Berk.) Kuntze. has not been reported from Turkey.

The study aims to make a contribution to the macrofungal biodiversity of the Trabzon and Turkey.

Material and method

Scutellinia samples were collected from Tonya district of Trabzon province, in 2014, during a routine field study. Fruit bodies were photographed at their natural habitat, and ecological characteristics and geographic position were noted. Then they were transferred to the fungarium in a paper box. The samples were dried in an air conditioned room and prepared as fungarium material. Microscopic investigations were carried out under a Nikon Eclipse Ci-S trinocular light microscope. Photographs related micromorphology were obtained with the aid of a DS-Fi2 digital camera. The sample was identified with the help of Breitenbach and Kränzlin (1984), Huhtinen (1984), Palacios et al. (1991), Yao and Spooner (1996), Hansen and Knudsen (2000), Medardi (2006), Zhuang (2005), Cantrell and Hanlin (2010), Thompson (2013), Jeannerot (2019).

The specimen is kept at Gazi University, Science Faculty, Department of Biology.

Results

Ascomycota Caval.-Sm.

Pezizomycetes O.E. Erikss. & Winka

Pezizales J. Schröt.

Pyronemataceae Corda

Scutellinia kerguelensis (Berk.) Kuntze

Syn: [*Lachnea kerguelensis* (Berk.) Sacc., *Peziza kerguelensis* Berk., *Scutellinia kerguelensis* var. *microspora* W.Y. Zhuang]

Macroscopic and microscopic features: Apothecia 4-8 mm in diameter, cupuliform when young, discoid to flattened or somewhat wavy, sessile, hymenial surface orange to orange-red, outer surface covered with dark brown bristle-like hairs which are also concentrated at the margin (Figure 1). Hairs 200-320 × 15-30 µm, brown, thick walled, slightly ventricose, generally pointed at the apex, septate (Figure 2a,b), rarely forked at the base. Asci 220-280 × 18-23 µm, cylindrical, 8-spored (Figure 2c,d). Paraphyses cylindrical to filiform, clavately thickened at the apex up to 7.5-9.5 µm (Figure 2c,d). Ascospores 19.5-25.5 × 13-17.2 µm, elliptical to broadly ellipsoid, hyaline, finely verrucose, multiguttulate or with 2 (rarely 1) obvious guttules (Figure 2e-g).

Scutellinia kerguelensis was reported to grow on damp soil and wet wood singly or gregariously (Breitenbach and Kränzlin, 1984; Medardi, 2006; Thompson, 2013).

Figure 1. Ascocarps of *Scutellinia kerguelensis*

Specimen examined: Trabzon, Tonya, Çayıriçi village, on damp soil and wet wood, under mixed forest, 40°51′N, 39°17′E, 890 m, 07.09.2014, Yuzun 1613.

Discussion

Scutellinia kerguelensis is reported for the first time for Turkish mycobiota as the 8th member of the genus *Scutellinia* in Turkey (Pekşen and Karaca, 2003; Allı et al., 2011; Çolak and Kaygusuz, 2018; Keleş, 2019; Sesli et al., 2020). Macroscopic and microscopic characteristics of the investigated samples are generally in agreement with those presented in literature (Breitenbach and Kränzlin, 1984; Huhtinen, 1984; Palacios et al., 1991; Yao and Spooner, 1996; Hansen and Knudsen, 2000; Medardi, 2006; Zhuang, 2005). Among the previously reported *Scutellinia* taxa, *S. armatospora, S. barlae, S. legaliae* and *S. trechispora* have globose ascospores while *S. crinita, S. scutellata* and *S. umbrorum* have ellipsoidal ascospores, like *S. kerguelensis*. *Scutellinia crinita* (880-1550 µm) and *S. scutellata* (1500-2000 µm)

have very long marginal hairs. *Scutellinia umbrorum* also have longer marginal hairs of up to 400 µm, but also have coarser warts as ascospore ornamentation. Comparatively shorter marginal hairs and rather fine (up to 0.5 µm) spore ornamentation of *S. kerguelensis* differ this species from the other Turkish *Scutellinia* with ellipsoidal spores.

Regarding the micro verrucose spore wall ornamentation, *S. kerguelensis* is somewhat similar to *S. ahmadiopsis* W.Y. Zhuang. But the longer marginal hairs and the larger ascospores of *S. kerguelensis* easily differentiates it from *S. ahmadiopsis* (Choi et al., 2013; Zhuang, 2005). *Scutellinia jejuensis* J.G. Han, Y.J. Choi & H.D. Shin also possess broadly ellipsoidal to subglobose ascospores. But the aculeolate-reticulate to truncate-conical warts with ridged appearance, and comparably smaller spores differs it from *S. kerguelensis* (Han et al., 2010).

Though Huhtinen (1984) reports one third of the hairs of *S. kerguelensis* as forked at the base, we observed the forked hairs were very rarely.

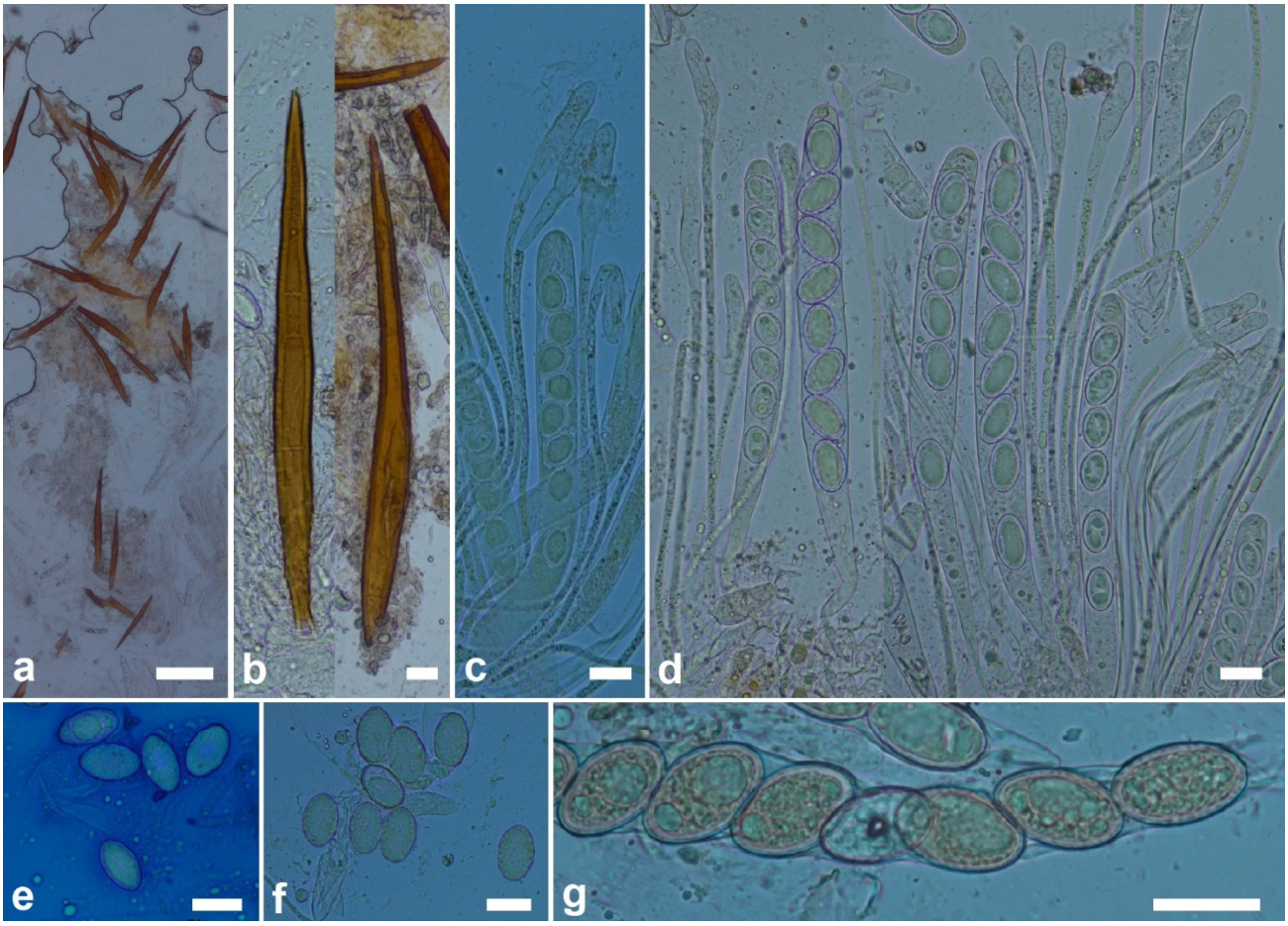

Figure 2. Marginal hairs (a,b), asci and paraphyses (c,d) and ascospores (e-g) of *Scutellinia kerguelensis*. (bars- a: 200 µm, b-g: 20 µm) (a,b,c,d,f,g in water, e in Lactophenol Blue Solution)

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