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Rutstroemia coracina, a new ascomycete record for the mycobiota of Türkiye

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Abstract

Rutstroemia coracina (Durieu & Lév.) Dennis (Rutstroemiaceae – Helotiales) was reported for the first time from Türkiye, based on the identification of the samples collected from Islahiye and Nurdağı districts of Gaziantep province. This species is the fourth member of the genus *Rutstroemia* P. Karst. in Türkiye. A brief description of the specimen is provided together with the photographs, related to its macro and micro-morphologies.

Keywords: Biodiversity, new record, Türkiye

Rutstroemia coracina, Türkiye mikobiyotası için yeni bir askomiset kaydı

Özet

Rutstroemia coracina (Durieu & Lév.) Dennis (Rutstroemiaceae – Helotiales), Gaziantep'in Islahiye ve Nurdağı ilçelerinden toplanan örneklerin teşhisine bağlı olarak, Türkiye'den ilk kez rapor edilmiştir. Bu tür *Rutstroemia* P. Karst. cinsinin Türkiye'deki dördüncü üyesidir. Türün kısa bir betimlemesi, makro ve mikro-morfolojisine ilişkin fotoğraflarıyla birlikte verilmiştir.

Anahtar kelimeler: Biyoçeşitlilik, yeni kayıt, Türkiye

INTRODUCTION

Rutstroemia P. Karst. is an ascomycetous genus of the family Rutstroemiaceae within the order Helotiales. *Rutstroemia* was erected by Karsten (Perić & Baral, 2019) and characterized by brown to dark olivaceous, discoid to cup-shaped, stipitated apothecia with smooth to distinctly toothed margin, ectal excipulum usually with prismatic cells, cylindrical and eight-spored asci generally with broadly rounded Sclerotinia-type apex bluing in iodine, cylindrical to filiform paraphyses usually thickening toward to apex, ellipsoid to cylindrical, straight or allantoid, hyaline, uni to biseriate ascospores with lipid content (Hansen and Knudsen, 2000; Peric & Baral, 2019).

Though 120 species have been combined in *Rutstroemia,* Index Fungorum validates 74 of them in this genus (Index Fungorum, 2024). Three species of *Rutstroemia, R. conformata* (P. Karst.) Nannf. (Işık and Türkekul, 2018), *R. elatina* (Alb. & Schwein.) Rehm (Akata and Erdoğdu, 2020) and *R. firma* (Pers.) P. Karst. (Uzun et al., 2015; Kaya et al., 2019), have also been reported in Türkiye, but the current check-list (Sesli et al., 2020) and the latest contributions (Akçay et al.,

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2023; Kuru and Allı, 2023; Sesli, 2023; Şahin et al., 2023; Çelik et al., 2024; Dalkıran et al., 2024; Keleş et al., 2024) indicate that *R. coracina* (Durieu & Lév.) Dennis has not been presented from Türkiye before. The work aims to make a contribution to the mycobiota of Türkiye.

MATERIAL AND METHOD

Ascocarps of *Rutstroemia coracina* were collected from Islahiye and Nurdağı districts of Gaziantep province, within the South-eastern Anatolian Region of Türkiye, in 2015, during routine field surveys within the scope of a TÜBİTAK project. Fructification organs were photographed at their collection habitat, and required notes related to their descriptive and ecological characters were taken. Transferring the samples to the laboratory, they were dried and kept as fungarium materials. Microscopic investigations were based on dry material and carried out under a trinocular compound microscope. Identification of the samples was performed with the help of Dennis (1963), Spooner (1981), Galan et al. (2013), and Garcia et al. (2020). The specimens are kept at the Biology Department, Kamil Özdağ Science Faculty, Karamanoğlu Mehmetbey University.

RESULTS

Ascomycota Caval.-Sm.
Leotiomycetes O.E. Erikss. & Winka
Helotiales Nannf.
Rutstroemiaceae Holst-Jensen, L.M. Kohn & T. Schumach.
Rutstroemia coracina (Durieu & Lév.) Dennis, Persoonia 3(1): 39 (1964)
Synonyms. [*Calycina conistea* (Durieu & Lév.) Kuntze, *C. coracina* (Durieu & Lév.) Kuntze, *Ciboria coracina* (Durieu & Lév.) Boud., *Helotium coracinum* (Durieu & Lév.) Sacc., *Lanzia coracina* (Durieu & Lév.) Spooner, *Peziza coracina* Durieu & Lév.].

Macroscopic and microscopic features. Apothecia scattered, superficial, stipitate, usually merging from the darkened areas of the substrate. Disc 0.5-2 mm in diameter, slightly concave, some almost plane at maturity, smooth, yellowish brown to reddish brown, with an irregularly toothed margin. Receptacle cupulate, centrally seated on the stipe, concolorous with the disc covered with a sparse and irregular net of vertically arranged fibrils. Stipe cylindrical, short concolorous with the receptacle, some darkened at the base. Ectal excipulum composed of parallel brownish to light pale ocher hyphae of 3.5-5.3 µm in diameter, medullary excipulum of textura intricata with somewhat thinner hypha. Asci 110-130 × 9-12 µm, cylindrical to clavate, somewhat tapering towards the base, apex conical, slightly flattened with a pore bluing in Melzer 's reagent, eight-spored. Paraphyses cylindrical, 1.5-2.5 µm in diameter, enlarged upwards up to 4-5 µm, sparsely septate. Ascospores 11-14 × 4.9-5.5 µm, uniseriate to biseriate, ellipsoid to fusoid, hyaline, with several globose lipid bodies which are somewhat larger towards the poles.

Habitat. *Rutstroemia coracina* was reported to grow on *Quercus* L. species such as *Q. ilex* L., *Q. coccifera* L. and *Q. humilis* Mill. leaves in different states of decomposition (Dennis, 1963; Spooner, 1981; Palmer, 1994; Garcia et al., 2020).

Turkish name. Suggested Turkish name for the newly recorded species is “Meşe kuşdüdüğü”.

Specimen examined

Gaziantep, İslahiye, Kozdere village, cemetery, on decaying *Q. coccifera* leaves, 37°07′N-36°39′E, 585 m, 21.03.2015, K. 11455; Nurdağı, Ataköy village, *Quercus* forest, on decaying *Q. coccifera* leaves, 37°08′N-36°54′E, 985 m, 22.03.2015, K.11483.

DISCUSSION

Rutstroemia coracina is added as a new record for Turkish Mycobiota. It is the fourth member of the genus *Rutstroemia* in Türkiye. General characteristics of the Turkish collection are in agreement with Dennis (1963), Spooner (1981), Galan et al. (2013), and Garcia et al. (2020).

Figure 1. Ascocarps of *Rutstroemia coracina* on dead leaves of *Quercus coccifera*.

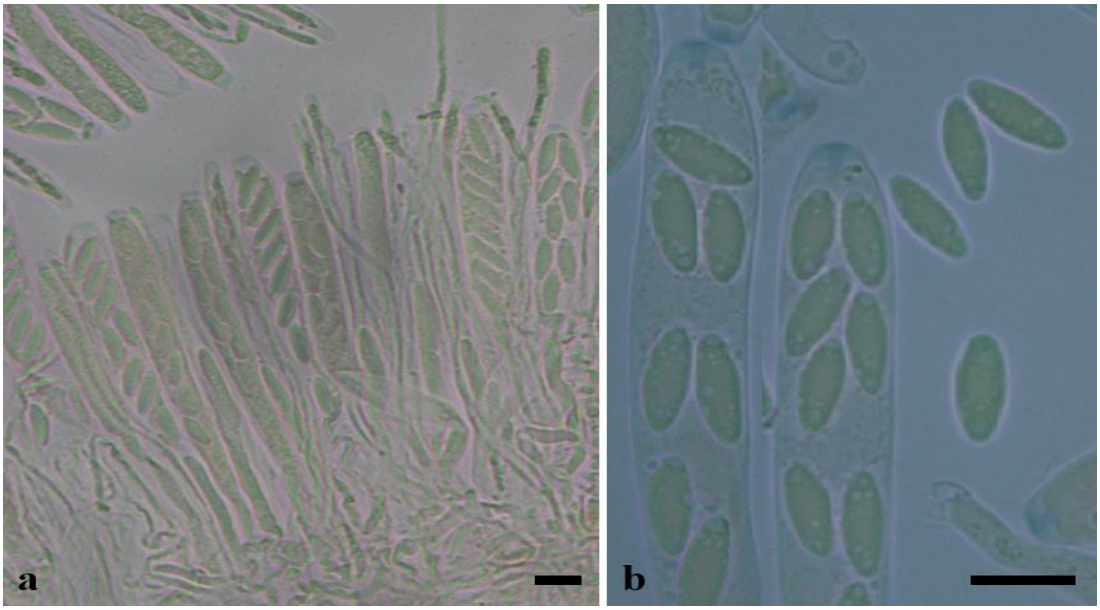

Figure 2. Asci and paraphyses (a) and ascospores (b) of *Rutstroemia coracina* (bars: 10 µm), (a,b- in Melzer).

Two other *Rutstroemia* species (*R. sydowiana* (Rehm) W.L. White and *R. petiolorum* (Roberge ex Desm.) W.L. White) were also reported from decaying *Quercus* leaves. The allantoid spores of *R. sydowiana* and the allantoid to reniform spores of *R. petiolorum* distinguish them from *R. coracina* (Galan et al., 2013). This species may also be confused with *Hymenoscyphus fructigenus* (Bull.) Gray due to the abundance of the latter species on *Quercus* leaves and acorn shells. But the white to yellowish whitish color of *H. fructigenus* distinguish it from R. *coracina*.

Spooner (1981) mentioned about the association of the apothecia with the blackening of the substrate. The majority of our collections were also merged from the blackening areas of the decaying leaves, but not all. It seems that the growth of them is not completely associated with the blackening of the substrate. The stem length of our collection is coherent with Dennis (1963), but not completely with Spooner (1981), Galan et al. (2013), and Garcia et al. (2020) since we did not observe the stems to be longer than the diameter of the disc.

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AUTHOR CONTRIBUTION STATEMENT

In this study; the study idea and design, data collection, analysis and interpretation of the results, and drafting of the article were made together by the authors.

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