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Research Note

Lichens from the Maslak Campus of İstanbul Technical University

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Abstract: The lichen diversity of the Maslak Campus of İstanbul Technical University is presented in this study. In total, 23 lichen species belonging to 14 genera were recorded. *Strangospora pinicola* (A.Massal.) Körb. is a new record for the Turkish lichen flora and 5 species are new records for İstanbul province.

Key Words: Lichenised fungi, biodiversity, İstanbul, Turkey

İstanbul Teknik Üniversitesi Maslak Kampüsünden Yeni Liken Kayıtları

Özet: Bu çalışmada İstanbul Teknik Üniversitesi Maslak Kampüsündeki liken çeşitliliği araştırılmıştır. On dört cinse ait yirmi üç liken türü belirlenmiştir. *Strangospora pinicola* (A.Massal.) Körb. Türkiye liken florası için yeni kayıttır. Beş tür ise İstanbul ilinden ilk defa kaydedilmiştir.

Anahtar Sözcükler: likenleşmiş mantarlar, biyoçeşitlilik, İstanbul, Türkiye

Introduction

This study, part of a research project on the biodiversity of the İstanbul Technical University (İTU) campus supported by the İTU Research Fund, was based on the lichens collected from the area of the Maslak Campus of İTU in İstanbul.

The study area within the boundaries of İTU is located on the European side of the Bosphorus in the district called Maslak or Ayazağa. It is situated between lat 41°06' 26"N and 41°06'05"N, and long 29°01'45"E and 29°01'56"E. The area is bordered by the Bosphorus to the east, Belgrade Forest to the north, and Kemerburgaz to the west. Densely populated residential areas, namely Levent and Etiler, are to the south. Moreover, an artificial lake and a stream (Kanlıkavak) are within the study area. The altitude of the area ranges between 90 and 110 m.

Northern parts of both the Asian and European sides of İstanbul are covered with Euro-Siberian flora that is deciduous forest vegetation. In the southern parts, which are under Mediterranean effect, maquis vegetation dominates. The natural flora of the region has been changing for years because of the rapid increase in population and construction. The campus flora is affected by both Euro-Siberian and Mediterranean climatic features. Members of *Pteridophyta, Equisetaceae*, and *Gymnospermae* (all taxa are reforested) are common among the campus flora. The recently made artificial lake (Gölet) on the campus provides habitat for many plant species as well as other biological communities.

There are records of İstanbul lichens that cover a 150-year period (Rigler, 1852; Steiner, 1899; Szatala, 1927a, 1927b; Yaltırık, 1966; Verseghy, 1982; Çobanoğlu & Akdemir, 1997; Schindler, 1998; Çobanoğlu, 2005). This study contributes to the lichen diversity of İstanbul province, as well as to the lichen flora of Turkey with one new Turkish record.

Materials and Methods

The lichen materials were collected between 10.5.2002 and 10.9.2003 from different substrata from 5 different sites of the Maslak Campus of İTU. The taxa were identified to at least species level (Clauzade & Roux,

1985; Purvis et al., 1992; Wirth, 1995). The specimens are preserved in the Herbarium of the Faculty of Arts and Science, Marmara University, İstanbul (MUFE), with duplicates in the Herbarium of the Institute of Eurasia (Herbarium Eurasia), İTU.

Collection sites

1. Upper side of Gölet, maquis area, south slopes, 50-60 m, 10.5.2002.
2. Around Gölet, afforested area with pine trees, north sides of hills, 60 m, 10.5.2002.
3. Upper side of Gölet, maquis area, north-east sides of hills, 65 m, 10.5.2002.
4. Kanlıkavak valley, maquis area, south aspect, 55 m, 10.9.2003.
5. Upper side of Gölet, Lojman residential area, south aspect, 85-90 m, 10.9.2003.

Results

An alphabetical list of the lichen taxa is provided, together with the collection sites, substrate information, and herbarium numbers for Gülşah Çobanoğlu (G.Ç.) in MUFE. Abbreviations of the authors' names are according to Brummitt & Powell (1992). The nomenclature follows the recent literature (Blanco et al., 2004; Santesson et al., 2004). The taxonomical order follows Purvis et al. (1992).

An asterisk (*) indicates a new record for İstanbul province.

List of Taxa

Ascomycotina

Order: Graphidales

Family: Thelotremataceae

Diploschistes scruposus (Schreb.) Norman

Kanlıkavak valley, maquis area, south aspect, 55 m, on siliceous rock, 10.9.2003, G.Ç. 1246.

Order: Lecanorales

Family: Acarosporaceae

***Strangospora pinicola** (A.Massal.) Körb.

Around Gölet, afforested area with pine trees, north sides of hills, 60 m, on bark of *Pinus nigra*, 10.5.2002, G.Ç. 1251. New for Turkey!

Family: Candelariaceae

Candelariella vitellina (Hoffm.) Müll. Arg.

Kanlıkavak valley, maquis area, south aspect, 55 m, on siliceous rock, 10.9.2003, G.Ç. 1236.

Family: Cladoniaceae

Cladonia chlorophaea (Flörke ex Sommerf.) Spreng.

Around Gölet, afforested area with pine trees, north sides of hills, 60 m, 10.5.2002. Upper side of Gölet, maquis area, north-east sides of hills, 65 m, 10.5.2002. Kanlıkavak valley, maquis area, south aspect, 55 m, on soil, 10.9.2003, G.Ç. 1238.

Cladonia convoluta (Lam.) Anders

Upper side of Gölet, maquis area, south slopes, 50-60 m, 10.5.2002. Around Gölet, afforested area with pine trees, north sides of hills, 60 m, 10.5.2002. Upper side of Gölet, maquis area, north-east sides of hills, 65 m, 10.5.2002. Kanlıkavak valley, maquis area, south aspect, 55 m, on soil, 10.9.2003, G.Ç. 1239.

Cadonia foliacea (Huds.) Willd.

Upper side of Gölet, maquis area, south slopes, 50-60 m, 10.5.2002. Around Gölet, afforested area with pine trees, north sides of hills, 60 m, 10.5.2002. Upper side of Gölet, maquis area, north-east sides of hills, 65 m, 10.5.2002. Upper side of Gölet, Lojman residential area, south aspect, 85-90 m, on soil, 10.9.2003, G.Ç. 1240.

Cladonia furcata (Huds.) Schrad. subsp. **furcata**

Around Gölet, afforested area with pine trees, north sides of hills, 60 m, 10.5.2002. Upper side of Gölet, maquis area, north-east sides of hills, 65 m, on soil, 10.5.2002, G.Ç. 1241.

Cladonia mediterranea P.A.Duvign. & Abbayes

Upper side of Gölet, maquis area, south slopes, 50-60 m, 10.5.2002. Around Gölet, afforested area with pine trees, north sides of hills, 60 m, 10.5.2002. Upper side of Gölet, maquis area, north-east sides of hills, 65 m, on soil, 10.5.2002, G.Ç. 1242.

Cladonia pyxidata (L.) Hoffm.

Upper side of Gölet, maquis area, south slopes, 50-60 m, 10.5.2002. Around Gölet, afforested area with pine trees, north sides of hills, 60 m, on soil, 10.5.2002, G.Ç. 1243.

Cladonia rangiformis Hoffm.

Kanlıkavak valley, maquis area, south aspect, 55 m, 10.9.2003. Upper side of Gölet, Lojman residential area, south aspect, 85-90 m, on siliceous rock, 10.9.2003, G.Ç. 1244.

Cladonia squamosa (Scop.) Hoffm. var. **squamosa**

Upper side of Gölet, maquis area, south slopes, 50-60 m, on soil, 10.5.2002, G.Ç. 1245.

Family: Hymeneliaceae

Aspicilia caesiocinerea (Nyl. ex Malbr.) Arnold

Kanlıkavak valley, maquis area, south aspect, 55 m, on siliceous rock, 10.9.2003, G.Ç. 1233.

***Aspicilia recedens** (Taylor) Arnold

Kanlıkavak valley, maquis area, south aspect, 55 m, on siliceous rock, 10.9.2003, G.Ç. 1234.

Family: Lecanoraceae

Lecidella stigmatea (Ach.) Hertel & Leuckert

Kanlıkavak valley, maquis area, south aspect, 55 m, on siliceous rock, 10.9.2003, G.Ç. 1247.

Family: Parmeliaceae

Cetraria aculeata (Schreb.) Fr.

Upper side of Gölet, maquis area, south slopes, 50-60 m, 10.5.2002. Around Gölet, afforested area with pine trees, north sides of hills, 60 m, on soil, 10.5.2002, G.Ç. 1237.

Xanthoparmelia conspersa (Ehrh. ex Ach.) Hale

Kanlıkavak valley, maquis area, south aspect, 55 m, on siliceous rock, 10.9.2003, G.Ç. 1253.

***Xanthoparmelia verruculifera** (Nyl.) O.Blanco et al.

Kanlıkavak valley, maquis area, south aspect, 55 m, on siliceous rock, 10.9.2003, G.Ç. 1254.

Family: Physciaceae

Amandinea punctata (Hoffm.) Coppins & Scheid.

Kanlıkavak valley, maquis area, south aspect, 55 m, on siliceous rock, 10.9.2003, G.Ç. 1232.

Family: Trapeliaceae

***Trapelia involuta** (Taylor) Hertel

Upper side of Gölet, maquis area, north-east sides of hills, 65 m, on siliceous rock, 10.5.2002, G.Ç. 1252.

Incertae sedis:

Leprocaulon microscopicum (Vill.) Gams

Kanlıkavak valley, maquis area, south aspect, 55 m, on siliceous rock, 10.9.2003, G.Ç. 1249.

***Leproloma membranaceum** (Dicks.) Vain.

Kanlıkavak valley, maquis area, south aspect, 55 m, on siliceous rock, 10.9.2003, G.Ç. 1248.

Order: Pertusariales

Family: Pertusariaceae

Ochrolechia parella (L.) A.Massal.

Kanlıkavak valley, maquis area, south aspect, 55 m, on siliceous rock, 10.9.2003, G.Ç. 1250.

Order: Teloschistales

Family: Teloschistaceae

Caloplaca aractina (Fr.) Häyrén

Kanlıkavak valley, maquis area, south aspect, 55 m, on siliceous rock,10.9.2003, G.Ç. 1235.

Discussion

In the papers from the late 1800s, many lichen taxa were recorded from both the Asian and European sides of İstanbul. The Maslak Campus of İstanbul Technical University has not been included in these studies. The number of lichen taxa from this unexplored region is not very high when compared to the earlier records from İstanbul. The smallest lichen communities are the epiphytes, due to the lack of old trees, and were found only on the bark of *Pinus nigra* in the afforested area of the campus. Around Kanlıkavak valley where there is maquis vegetation, terricolous and saxicolous lichen species dominate. To conclude, due to the increase in population, construction, and pollution, probably many lichen species are likely to disappear.

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