



Additional and New Lichen Records for the Province of Giresun

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Abstract

In the present study, some lichen samples collected by the author on several substrata in one-day field study during the second annual field trip of the Turkish Lichenological Association in 2004 in Giresun city were determined. A list of 36 lichen taxa reported, among which only two are saxicolous, 34 are epiphytic taxa. Of these, six taxa are new records for the province of Giresun.

Keywords: *Biodiversity, Epiphytic, Giresun, Lichen.*

Giresun İli İçin Yeni ve İlave Liken Kayıtları

Özet

Bu çalışmada Türk Liken Topluluğunun 2004'de Giresun'da düzenlediği 2. yıllık araştırma gezisi sırasında bir günlük arazi çalışması sonucunda yazar tarafından çeşitli substratlar üzerinden toplanmış bazı liken örnekleri değerlendirilmiştir. Sadece iki takson saksikol, diğer 34 takson epifitik olmak üzere 36 taksonluk liken listesi rapor edilmiştir. Bunlardan altı takson Giresun ili için yeni kayıttır.

Anahtar Kelimeler: *Bioçeşitlilik, Epifitik, Giresun, Liken.*

Introduction

The lichen diversity at two localities in Alçakbel Forest and Recreation Area in the province of Giresun is presented in this paper. The research site, Alçakbel Forest and Recreation Area, is a high plateau in the province of Giresun, is located at the East Black Sea Coast in the North of Turkey, the wettest region of the country. It is situated between 40° 53' N and 38° 19' E. The central part, the northern slopes of the mountains of Giresun and part of spreading the field with different climatic characteristics. Covering a large part of the city overlooking the Black Sea, showing some characteristics of warm and rainy, the oceanic climate. According to data from the Giresun meteorological station, its annual average precipitation is 1295 mm and its annual average temperature is 14,2 °C. In order to determine lichens, mainly epiphytic and some saxicolous lichen samples were collected in a daily field trip during the second annual meeting of the Turkish Lichenological Association in 2004.

Numerous papers are present including quite many lichen records from Giresun province [1,2,3,4,5,6,7,8,9,10,11]. Even so, this study contributes new lichen data for Turkish mycota, 6 records new to Giresun.

Material and Method

The lichen samples were collected in Alçakbel Forest and Recreation area with altitude of about 1500 m, in 2004. The epiphytic lichens were sampled on trunks and twigs of *Abies nordmanniana* (Stev) Spach. trees. The lichen material were investigated morphologically and anatomically under stereomicroscope (Olympus SZ40), applying spot tests when required, and identified according to keys in books [12,13,14].

The identified lichen samples were stored with special numbers G.Ç.1976-2012 in the Herbarium of Marmara University, Faculty of Arts and Sciences, at the Department of Biology (MUFE).

Collecting Sites:

1. Alçakbel forest and recreation area, 02.07.2004, 1450 m, on siliceous rock and soil.
2. Alçakbel forest and recreation area, 02.07.2004, 1500 m, on *Abies nordmanniana* (Stev) Spach.

Results

The list of lichen taxa is given below in alphabetical order with the following names of the authors, site numbers and substrata that lichens were sampled on, and also the herbarium numbers for each taxon in parenthesis. Author names are abbreviated according to Brummitt and Powell [15]. Nomenclature mainly follows Index Fungorum (<http://www.indexfungorum.org>).

The list of identified lichens cites 36 taxa in 24 genera, sampled on mainly tree substrata in the research area. 6 new records for the province of Giresun are signified with an asterisk (*) in the list.

List of Lichen Taxa:

Baeomyces rufus (Huds.) Rebert. **1**: on siliceous rock, (G.Ç.1976)

Bryoria smithii* (Du Rietz) Brodo & D.Hawksw. **2: on *Abies nordmanniana* (Stev) Spach., (G.Ç.2004)

Buellia griseovirens (Turner & Borrer ex Sm.) Almb. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1990)

Caloplaca herbidella (Hue) H.Magn. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1992)

Chaenotheca chrysocephala* (Turner ex Ach.) Th. Fr. **2: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1979)

Chaenotheca trichialis* (Ach.) Th.Fr. **2: on *Abies nordmanniana* (Stev) Spach., (G.Ç.2006)

Chaenothecopsis consociata* (Nádv.) Alb. Schmid **2: on *Abies nordmanniana* (Stev) Spach., (G.Ç.2007)

Chrysothrix candelaris (L.) J.R. Laundon **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.2008)

Cladonia coniocraea (Flörke) Spreng. **1**: on mossy soil, G.Ç.1978; **2**: on *Abies nordmanniana* (Stev) Spach. tree base, (G.Ç.2012)

Cladonia fimbriata (L.) Fr. **2**: on *Abies nordmanniana* (Stev) Spach. tree base, (G.Ç.2001)

Cladonia furcata subsp. *furcata* (Huds.) Schrad. **2**: on *Abies nordmanniana* (Stev) Spach. tree base, (G.Ç.2011)

Evernia divaricata (L.) Ach. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1993)

Hypogymnia physodes (L.) Nyl. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1997)

Hypogymnia tubulosa (Schaer.) Hav. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1983)

Flavoparmelia caperata (L.) Hale **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1984)

Lecanora albella (Pers.) Ach. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1985)

Lecanora chlarotera Nyl. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1988)

- Lecanora symmicta* (Ach.) Ach. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1991)
- Lecidella elaeochroma* (Ach.) M.Choisy **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1986)
- Lecidella stigmatea* (Ach.) Hertel & Leuckert **1**: on siliceous rock, (G.Ç.1977)
- Melanelixia fuliginosa* subsp. *fuliginosa* (Fr. ex Duby) O.Blanco, A.Crespo, Divakar, Essl., D.Hawksw. & Lumbsch **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.2005)
- Menegazzia terebrata* (Hoffm.) A.Massal. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.2003)
- **Ochrolechia turneri* (Sm.) Hasselrot **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.2009)
- Opegrapha varia* Pers. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1980)
- Parmelia saxatilis* (L.) Ach. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1998)
- Parmelia sulcata* Taylor **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1987)
- Parmotrema chinense* (Osbeck) Hale & Ahti **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.2002)
- Peltigera rufescens* (Weiss) Humb. **2**: on *Abies nordmanniana* (Stev) Spach. tree base, (G.Ç.2010)
- Pertusaria albescens* (Huds.) M.Choisy & Werner **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1989)
- Platismatia glauca* (L.) W.L. Culb. & C.F. Culb. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1982)
- Pseudevernia furfuracea* var. *furfuracea* (L.) Zopf **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1981)
- Ramalina farinacea* (L.) Ach. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1994)
- Ramalina fraxinea* (L.) Ach. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1999)
- Usnea florida* (L.) Weber ex F.H. Wigg. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1995)
- **Usnea subfloridana* Stirt. **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.1996)
- Usnea fulvoreagens* (Räsänen) Räsänen **2**: on *Abies nordmanniana* (Stev) Spach., (G.Ç.2000)

Discussion and Conclusion

A small additional list of lichen taxa, including some new records to Giresun mycota, in Alçakbel forest and Recreation Area, is presented in this study.

Lichen samples that were collected in one-day field trip during the second annual meeting of the Turkish Lichenological Association in Giresun city, in 2004, were identified at the laboratory. A list of 36 lichen taxa is reported, 6 taxa are new records for the province of Giresun.

The list includes only 2 saxicolous but mostly epiphytic taxa (34) in a manner of substrate types. The identified lichens are represented with 15 crustose, 10 foliose and 11 fruticose morphological forms. *Cladonia* species are dimorphic taxa. Three species of *Chaenotheca* genus and *Baeomyces rufus* are with stalked apothecia. Many crustose taxa such as *Chaenotheca* spp. and *Chrysothrix candelaris* are members of old forests [16]. The study area with high altitude, bears particularly the species of *Usnea*, *Ramalina*, *Pseudevernia*, *Menegazzia* and *Bryoria* genera that indicate lichens expected in typical high mountain forests with those unpolluted air. When compared to the altitudinal range in other papers, our data in the study site coincides with those recorded in similar altitudes. Those species recorded at the localities around city center or at lower altitudes with impact of sea are not found in our localities [5,6,7,9].

In the study area, all epiphytic species were found on *Abies nordmanniana*. Only those species, *Flavoparmelia caperata* *Hypogymnia physodes*, *H. tubulosa*, *Lecanora symmicta* and *Parmelia sulcata*, *Pseudevernia furfuracea*, have been recorded previously on *Abies* sp. in the literature [2,7]. Although some species of *Bryoria* and *Usnea* have been found on *Abies* sp., the two new fruticose lichens, *Usnea subfloridana* and *Bryoria smithii*, have not been recorded earlier from the province [2, 7]. The reason for high diversity of epiphytic lichens probably is due to the properties of the substrate, for instance the bark of *Abies*.

The presented list contributes to lichen diversity for the province of Giresun with 6 new records. The diversity of lichens is very rich for this small site, only two localities in the forest. The high altitudinal range in the mountain forest area and its humid climate with a mild impact of Black Sea provides a good habitat for rich lichen biodiversity. Although there are so many papers on lichens of Giresun province [1,2,3,4,5,6,7,8,9,10,11], its lichen mycota has still not been completely explored yet.

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