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Additional lichen records from Kastamonu province (Turkey)

Abstract

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Sixty-six lichen taxa are reported as new for Kastamonu province in the western Black Sea region of Turkey. Five species are new records for Turkey: *Bacidia circumspecta*, *Bacidia friesiana*, *Diplotomma nivale*, *Diplotomma venustum* and *Schismatomma pericleum*.

The lichen flora of the western part of the Black Sea region is still very poorly known, although it is known as one of the most interesting and species rich biogeographic elements in Turkey with some strongly oceanic floristic elements (John 1996). In nine papers referring to lichens in the province of Kastamonu (Czeczott 1939; John 1992, 1996; Motyka 1936; Özdemir Türk 1997; Szatala 1927; Yıldız & Yurdakulol 1998a, 1998b; Zeybek et al. 1993) only 50 species are considered. The following list is restricted to the 66 taxa new to Kastamonu province. Five species are reported for the first time from Turkey: *Bacidia circumspecta*, *B. friesiana*, *Diplotomma nivale*, *D. venustum*, *Schismatomma pericleum*. The paper is a further contribution towards a checklist of the Mediterranean lichen flora (Nimis 1996).

Study area

One of the survey areas is located in the west of Küre Mountains between 41° 44' N to 41° 47' N and 34° 04' E to 34° 07' E, the second locality is situated 41° 04' N and 33° 45' E north of Ilgaz Dağı Geçidi. The climate is described by the clima diagram in Fig. 1; further information in Yıldız & Yurdakulol (1998a, 1998b).

Material and methods

Lichens were collected from different sites in the Yaralıgöz Mountains in 1991 and 1992 by Atilla Yıldız and in the north of Ilgaz Dağı geçidi by Volker John in 1988. The lichen

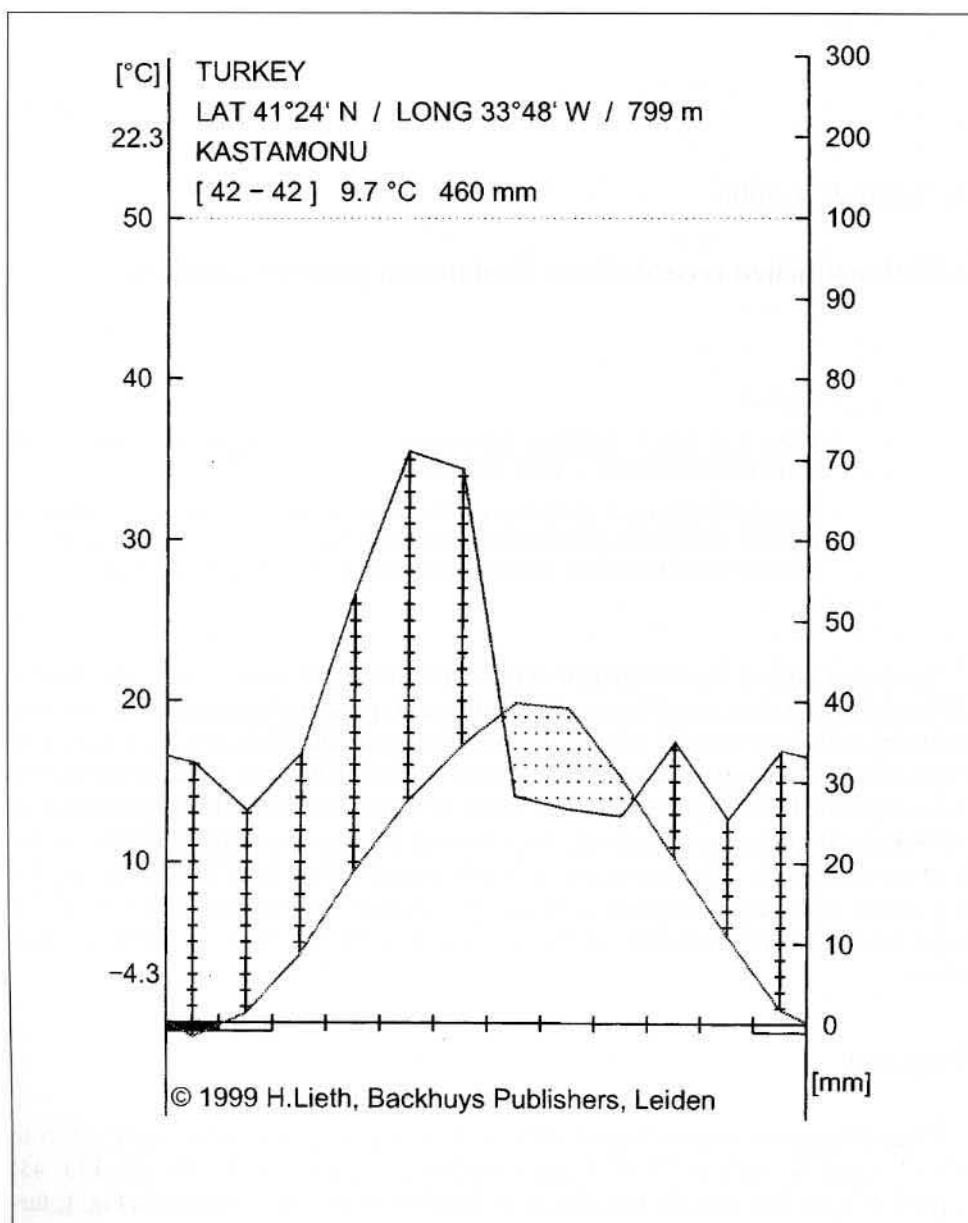


Fig. 1. Climate diagram of Kastamonu representing the survey area (from Lieth et al. 1999).

samples are stored in the herbarium of the Biology Department of Ankara University, Ankara (ANK) and in the private herbarium of V. John (most samples in M). Nomenclature is according to Hafellner & Türk (2001), author abbreviations follow Brummitt & Powell (1992).

List of species

Acarospora cervina A. Massal.

The east of Harmankaya hill, 1700-1750 m, on calcareous rocks, 24.VII.1991, A. Yıldız.

Alectoria sarmentosa (Ach.) Ach.

North of Ilgaz Dağı geçidi, 1700 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

Amandinea punctata (Hoffm.) Coppins & Scheid.

The west of Harmankaya hill, Sülmanlı başı, 1300 m, on *Quercus petraea* subsp. *iberica*, 10.VII.1991, A. Yıldız.

Anaptychia setifera Mereschk. ex Räsänen

North of Ilgaz Dağı geçidi, 1700 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

Aspicilia calcarea (L.) Mudd

The east of Harmankaya hill, 1700-1750 m, on calcareous rocks, 24.VII.1991, A. Yıldız.
Türbekaya hill, 1700-1750 m, on calcareous rocks, 24.VII.1991, A. Yıldız. Türbekaya hill, 1850-1900 m, on calcareous rocks, 17.VII.1992, A. Yıldız.

Aspicilia farinosa (Flörke) Arnold

Türbekaya hill, 1850 m, on calcareous rocks, 10.VII.1991, A. Yıldız.

Bacidia circumspecta (Nyl. ex Vain.) Malme

North of Ilgaz Dağı geçidi, 1700 m, on *Fagus orientalis* and *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

Bacidia friesiana (Hepp) Körb.

North of Ilgaz Dağı geçidi, 1700 m, on *Fagus orientalis* and *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

Bacidia rosella (Pers.) De Not.

The north of Harmankaya hill, 1400-1450 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 19.VII.1992, A. Yıldız. Hillside of Harmankaya hill, 1350 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 24.VII.1992, A. Yıldız.

Biatora vernalis (L.) Fr.

North of Ilgaz Dağı geçidi, 1700 m, on *Fagus orientalis*, 15.VIII.1988, V. John.

Bryoria capillaris (Ach.) Brodo & D.Hawksw.

North of Ilgaz Dağı geçidi, 1700 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

Buellia erubescens Arnold

North of Ilgaz Dağı geçidi, 1700 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

Buellia griseovirens (Turner & Borrer ex Sm.) Almb.

The east of Harmankaya hill, 1700-1750 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 24.VII.1991, A. Yıldız. Hillside of Harmankaya hill, 1350 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 09.VII.1991, A. Yıldız.

Caloplaca agardhiana (A. Massal.) Clauzade & Cl. Roux

The east of Harmankaya hill, 1700-1750 m, on calcareous rocks, 24.VII.1991, A. Yıldız.

Caloplaca biatorina (A. Massal.) J. Steiner

Türbekaya hill, 1850-1900 m, on calcareous rocks, 17.VII.1992, A. Yıldız.

***Caloplaca cerina* (Ehrh. ex Hedw.) Th. Fr.**

The west of Harmankaya hill, Sülmanlı başı, 1300 m, on *Quercus petraea* subsp. *iberica*, 10.VII.1991, A. Yıldız.

***Caloplaca chlorina* (Flot.) H. Olivier**

The north of Harmankaya hill, 1350 m, on decaying wood, 24.VII.1991, A. Yıldız.

***Caloplaca chalybaea* (Fr.) Müll. Arg.**

The east of Harmankaya hill, 1700-1750 m, on calcareous rocks 24.VII.1991, A. Yıldız.
Türbekaya hill, 1850-1900 m, on calcareous rocks, 17.VII.1992, A. Yıldız.

***Caloplaca inconnexa* (Nyl.) Zahlbr.**

The east of Harmankaya hill, 1700-1750 m, on calcareous rocks, 24.VII.1991, A. Yıldız.

***Caloplaca variabilis* (Pers.) Müll. Arg.**

Türbekaya hill, 1700-1750 m, on calcareous rocks, 24.VII.1991, A. Yıldız.

***Caloplaca velana* (A. Massal.) Du Rietz**

Türbekaya hill, 1850-1900 m, on calcareous rocks, 17.VII.1992, A. Yıldız.

***Candelariella vitellina* (Hoffm.) Müll. Arg.**

Türbekaya hill, 1700-1750 m, on calcareous rocks, 24.VII.1991, A. Yıldız. The top of Türbekaya hill, 2019 m, on calcareous rocks, 17.VII.1992, A. Yıldız. Türbekaya hill, 1850-1900 m, on calcareous rocks, 17.VII.1992, A. Yıldız.

***Cetraria islandica* (L.) Ach.**

The east of Harmankaya hill, 1700-1750 m, on soil, 24.VII.1991, A. Yıldız. The top of Türbekaya hill, 2019 m, on soil, 17.VII.1992, A. Yıldız.

***Chaenotheca chrysocephala* (Turner ex Ach.) Th. Fr.**

Türbekaya hill, 1450-1500 m and 1700-1750 m, on *Pinus sylvestris*, 11.VII.1991, A. Yıldız.

***Cladonia cervicornis* (Ach.) Flot. subsp. *verticillata* (Hoffm.) Ahti**

Türbekaya hill, 1350-1400 m, on soil, 10.VII.1991, A. Yıldız.

***Cladonia coniocraea* (Flörke) Sprengel**

The east and west of Türbekaya hill, 1300-1350 m, on decaying wood, 10.VII.1991, A. Yıldız. Türbekaya hill, 1450-1500 m and 1700-1750 m, on decaying wood, 11.VII.1991, A. Yıldız. The east of Harmankaya hill, 1700-1750 m, on decaying wood, 24.VII.1991, A. Yıldız. The west of Harmankaya hill, Sülman başı, 1250-1300 m, on decaying wood, 24.VII.1991, A. Yıldız.

***Cladonia foliacea* (Huds.) Willd.**

The west of Harmankaya hill, Sülmanlı başı, 1300 m, on soil, 10.VII.1991, A. Yıldız.

***Cladonia macilenta* Hoffm.**

The east and west of Türbekaya hill, 1300-1350 m, on decaying wood, 10.VII.1991, A. Yıldız. The west of Türbekaya hill, 1300 m and 1400-1450 m, on decaying wood, 11.VII.1991, A. Yıldız. The west of Türbekaya hill, 1450 m, on calcareous rocks, 11.VII.1991, A. Yıldız. Hillside of Harmankaya hill, 1350-1400 m, , 24.VII.1991, A. Yıldız. Hillside of Harmankaya hill, 1350-1400 m, on decaying wood, 24.VII.1991, A. Yıldız. Türbekaya hill, 1450-1500 m, on calcareous rocks, 11.VII.1991, A. Yıldız. (10. Station)

***Collema fuscovirens* (With.) J.R.Laundon**

Türbekaya hill, 1850 m, on calcareous rocks, 10.VII.1991, A. Yıldız. Türbekaya hill, 1700-1750 m, on calcareous rocks, 24.VII.1991, A. Yıldız. Harmankaya hill, Çatak ağzı, 1400 m, on calcareous rocks, 25.VII.1991, A. Yıldız.

***Dermatocarpon intestiniforme* (Körb.) Hasse**

The top of Türbekaya hill, 2000 m, on calcareous rocks, 25.VII.1991, A. Yıldız.

***Diplotomma nivale* (Bagl. & Carestia) Hafellner**

The top of Türbekaya hill, 2019 m, on thallus of *Xanthoria elegans* over calcareous rocks, 17.VII.1992, A. Yıldız.

***Diplotomma venustum* Körb.**

The east of Harmankaya hill, 1700-1750 m, on calcareous rocks, 24.VII.1991, A. Yıldız.

***Farnoldia micropsis* (A. Massal.) Hertel**

Türbekaya hill, 1850 m, on calcareous rocks, 10.VII.1991, A. Yıldız.

***Hypogymnia farinacea* Zopf**

The west of Harmankaya hill, Sülman başı, 1250-1300 m, on *Pinus sylvestris* and *Quercus petraea* subsp. *iberica*, 24.VII.1991, A. Yıldız. North of Ilgaz Dağı geçidi, 1700 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

***Hypogymnia vittata* (Ach.) Parrique**

North of Ilgaz Dağı geçidi, 1700 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

***Lecanora agardhiana* Ach.**

The top of Türbekaya hill, 2019 m, on calcareous rocks, 17.VII.1992, A. Yıldız.

***Lecanora chlarotera* Nyl.**

The west of Harmankaya hill, Sülman başı, 1250-1300 m, on *Quercus petraea* subsp. *iberica*, 24.VII.1991, A. Yıldız.

***Lecanora pulicaris* (Pers.) Ach.**

The east of Harmankaya hill, 1700-1750 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 24.VII.1991, A. Yıldız.

***Lecidella patavina* (A. Massal.) Knoph & Leuckert**

Türbekaya hill, 1700-1750 m, on calcareous rocks, 24.VII.1991, A. Yıldız.

***Leptogium lichenoides* (L.) Zahlbr.**

The west of Türbekaya hill, 1400-1450 m, on calcareous rocks, 11.VII.1991, A. Yıldız.

The west of Türbekaya hill, 1300-1350 m, on soil with mosses, 10.VII.1991, A. Yıldız.

The west of Türbekaya hill, 1350-1400 m, on soil with mosses, 25.VII.1991, A. Yıldız.

Harmankaya hill, Sülman deresi, 1250-1300 m, on decaying wood, 25.VII.1991, A. Yıldız.

***Leptogium saturninum* (Dicks.) Nyl.**

Harmankaya hill, Sülman deresi, 1250-1300 m, on decaying wood, 25.VII.1991, A. Yıldız.

***Nephroma parile* (Ach.) Ach.**

Harmankaya hill, Kızılyer, 1350-1400 m, *Pyrus elaeagnifolia*, 25.VII.1991, A. Yıldız.

Harmankaya hill, Sülman deresi, 1250-1300 m, on decaying wood, 25.VII.1991, A. Yıldız.

***Nephroma tangeriense* (Maheu & A. Gillet) Zahlbr.**

The west of Türbekaya hill, 1350-1400 m, on *Acer campestre*, 25.VII.1991, A. Yıldız.

North of Ilgaz Dağı geçidi, 1700 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

***Parmelia submontana* Nadv. ex Hale**

North of Ilgaz Dağı geçidi, 1700 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

***Peltigera didactyla* (With.) J. R. Laundon**

The west of Türbekaya hill, 1350-1400 m, on calcareous rocks, 25.VII.1991, A. Yıldız.

***Peltigera polydactylon* (Necker) Hoffm.**

Türbekaya hill, 1350-1400 m, on decaying wood over calcareous rocks, 10.VII.1991, A. Yıldız. The west of Türbekaya hill, 1400-1450 m, on calcareous rocks, 11.VII.1991, A. Yıldız. Harmankaya hill, Çatak ağzı, 1400 m, on soil, 25.VII.1991, A. Yıldız. Harmankaya hill, Sülman deresi, 1250-1300 m, on decaying wood, 25.VII.1991, A. Yıldız.

***Pertusaria albescens* (Huds.) Choisy & Werner**

North of Ilgaz Dağı geçidi, 1700 m, on *Fagus orientalis*, 15.VIII.1988, V. John.

***Pertusaria constricta* Erichsen**

North of Ilgaz Dağı geçidi, 1700 m, on *Fagus orientalis*, 15.VIII.1988, V. John.

***Phlyctis argena* (Spreng.) Flot.**

North of Ilgaz Dağı geçidi, 1700 m, on *Fagus orientalis*, 15.VIII.1988, V. John.

***Physconia distorta* (With.) J. R. Laundon**

Harmankaya hill, Kiraz düzü, 1200 m, on *Populus tremula*, 25.VII.1991, A. Yıldız. The west of Türbekaya hill, 1350-1400 m, on *Acer campestre*, 25.VII.1991, A. Yıldız. North of Ilgaz Dağı geçidi, 1700 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

***Protoblastenia immersa* (Hoffm.) J. Steiner**

The top of Türbekaya hill, 2019 m, on calcareous rocks, 17.VII.1992, A. Yıldız.

***Ramalina farinacea* (L.) Ach.**

The west of Türbekaya hill, 1300-1350 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 10.VII.1991, A. Yıldız. Türbekaya hill, 1350-1400 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 10.VII.1991, A. Yıldız. The west of Türbekaya hill, 1400-1450 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 11.VII.1991, A. Yıldız. The east of Harmankaya hill, 1700-1750 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 24.VII.1991, A. Yıldız. Harmankaya hill, Çatak ağzı, 1400 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 25.VII.1991, A. Yıldız. The west of Harmankaya hill, Sülman başı, 1250-1300 m, *Quercus petraea* subsp. *iberica*, 24.VII.1991, A. Yıldız. North of Ilgaz Dağı geçidi, 1700 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

***Ramalina fastigiata* (Pers.) Ach.**

The east of Harmankaya hill, 1300-1350 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 10.VII.1991, A. Yıldız. Türbekaya hill, 1350-1400 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 10.VII.1991, A. Yıldız. Harmankaya hill, Çatak ağzı, 1400 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 25.VII.1991, A. Yıldız.

***Ramalina fraxinea* (L.) Ach.**

Türbekaya hill, 1350-1400 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 10.VII.1991, A. Yıldız. The east of Harmankaya hill, 1700-1750 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 24.VII.1991, A. Yıldız. The west of Türbekaya hill, 1400-1450 m, on *Prunus domestica*, 11.VII.1991, A. Yıldız.

***Ramalina obtusata* (Arnold) Bitter**

The west of Türbekaya hill, 1300-1350 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 10.VII.1991, A. Yıldız. The west of Harmankaya hill, Sülman başı, 1250-1300 m, on *Quercus petraea* subsp. *iberica*, 24.VII.1991, A. Yıldız. North of Ilgaz Dağı geçidi, 1700 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

***Ramalina pollinaria* (Westr.) Ach.**

Türbekaya hill, 1350-1400 m, *Abies nordmanniana* subsp. *bornmuelleriana*, 10.VII.1991, A. Yıldız. The west of Harmankaya hill, Sülman başı, 1250-1300 m, on *Quercus petraea* subsp. *iberica* and *Abies nordmanniana* subsp. *bornmuelleriana*, 24.VII.1991, A. Yıldız.

***Ramalina polymorpha* (Lilj.) Ach.**

The west of Harmankaya hill, Sülman başı, 1250-1300 m and Çatak ağzı, 1400 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 25.VII.1991, A. Yıldız.

***Rinodina sophodes* (Ach.) A. Massal.**

North of Ilgaz Dağı geçidi, 1700 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

*Schismatomma pericleum* (Ach.) Branth. & Rostr.

North of Ilgaz Dağı geçidi, 1700 m, on *Fagus orientalis*, 15.VIII.1988, V. John.

***Solorina saccata* (L.) Ach.**

The top of Türbekaya hill, 2019 m, on soil, 17.VII.1992, A. Yıldız.

***Squamarina cartilaginea* (With.) P. James**

The west of Türbekaya hill, 1400-1450 m, on calcareous rocks, 11.VII.1991, A. Yıldız.

***Toninia candida* (Weber) Th. Fr.**

The west of Türbekaya hill, 1400-1450 m, on calcareous rocks, 11.VII.1991, A. Yıldız.

***Toninia sedifolia* (Scop.) Timdal**

The west of Türbekaya hill, 1400-1450 m, on calcareous rocks, 11.VII.1991, A. Yıldız.

***Tuckermannopsis chlorophylla* (Willd.) Vain.**

The east of Harmankaya hill, 1700-1750 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 24.VII.1991, A. Yıldız. North of Ilgaz Dağı geçidi, 1700 m, on *Abies nordmanniana* subsp. *bornmuelleriana*, 15.VIII.1988, V. John.

***Verrucaria nigrescens* Pers.**

The east of Harmankaya hill, 1700-1750 m, on calcareous rocks, 24.VII.1991, A. Yıldız. Türbekaya hill, 1850-1900 m, on calcareous rocks, 17.VII.1992, A. Yıldız.

***Xanthoria parietina* (L.) Th. Fr.**

Harmankaya hill, Kiraz düzü, 1200 m, on *Populus tremula*, 25.VII.1991, A. Yıldız.

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