

## The lichen biota of Iğdır province (Turkey)

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**ABSTRACT** — As a result of lichenological exploration in the Iğdır province (Turkey), a total of 292 lichenized fungi belonging to 96 genera in the *Ascomycota*, including 2 subspecies and 6 varieties, were determined from 174 different localities. *Caloplaca glomerata*, *Caloplaca kansuensis*, *Dermatocarpon minutum* var. *circodes*, *Lecanora bicincta* var. *sorediata*, *Lecanora prophetae-eliae*, *Phaeophyscia hispidula*, *Physcia scopulorum*, *Placopyrenium iranicum* and *Pyrenopsis subareolata* are new to Turkey, and also Asia except *Pyrenopsis subareolata* and *Lecanora prophetae-eliae*.

**KEY WORDS** — *Ascomycetes*, biodiversity, lichen, Iğdır, Turkey

### Introduction

Especially in last three years the knowledge about lichen flora of Turkey has significantly increased and substantial new lichen records have also been added to it (Aptroot & Yazıcı 2012, Arslan et al. 2011, Karagöz & Aslan 2012, Karagöz et al. 2011, Kınalıoğlu & Aptroot 2011, Oran & Öztürk 2010, 2012, Osyczka et al. 2011, Vondrak et al. 2012, Yazıcı et al. 2010a,b,c, 2011a,b) However, there are still many lichenologically unexplored parts of Turkey (e.g. Muş, Hakkari, Şırnak, Kilis, Elazığ etc.)

Iğdır is such a part: it has never been the subject of a detailed lichenological study, and only fourteen lichenized fungi have thus far been reported from this area where Turkey borders with Nakhchivan and Armenia (Aptroot & Yazıcı 2012, Vondrak et al. 2012, Yazıcı 2012, Yazıcı et al. 2011b, 2012). This is in contrast with nearby areas such as the provinces Ardahan, Kars, Ağrı and Van, which have already received already much more attention (Aslan 2000, Karagöz & Aslan 2012, Steiner 1899, Vondrak et al. 2012, Yazıcı et al. 2011a).

This paper presents the results of dedicated lichenological fieldwork in Iğdır province done in spring and summer 2010 and summer 2011.

### Material and methods

Lichen specimens were collected from 174 different localities between 28 March 2010 and 29 July 2011 in the region Iğdır (Table 1). The investigated area includes the districts Iğdır (Center), Tuzluca, Aralık, Karakoyunlu and the localities are marked on the map of Figure 1. Air dried samples were studied with a Nikon SMZ1500 stereomicroscope and a Nikon Eclipse 80i light microscope and for the identification the major identification guides were used (e.g. Brodo et al. 2001, Dobson 2005, Esslinger 1997, Giralt 2001, Poelt 1974, Poelt & Vězda 1981, Smith et al. 2009, Wirth 1995). Vouchers are deposited in the herbarium of the Biology Department, Faculty of Science, Karadeniz Technical University, Turkey (KTUB).

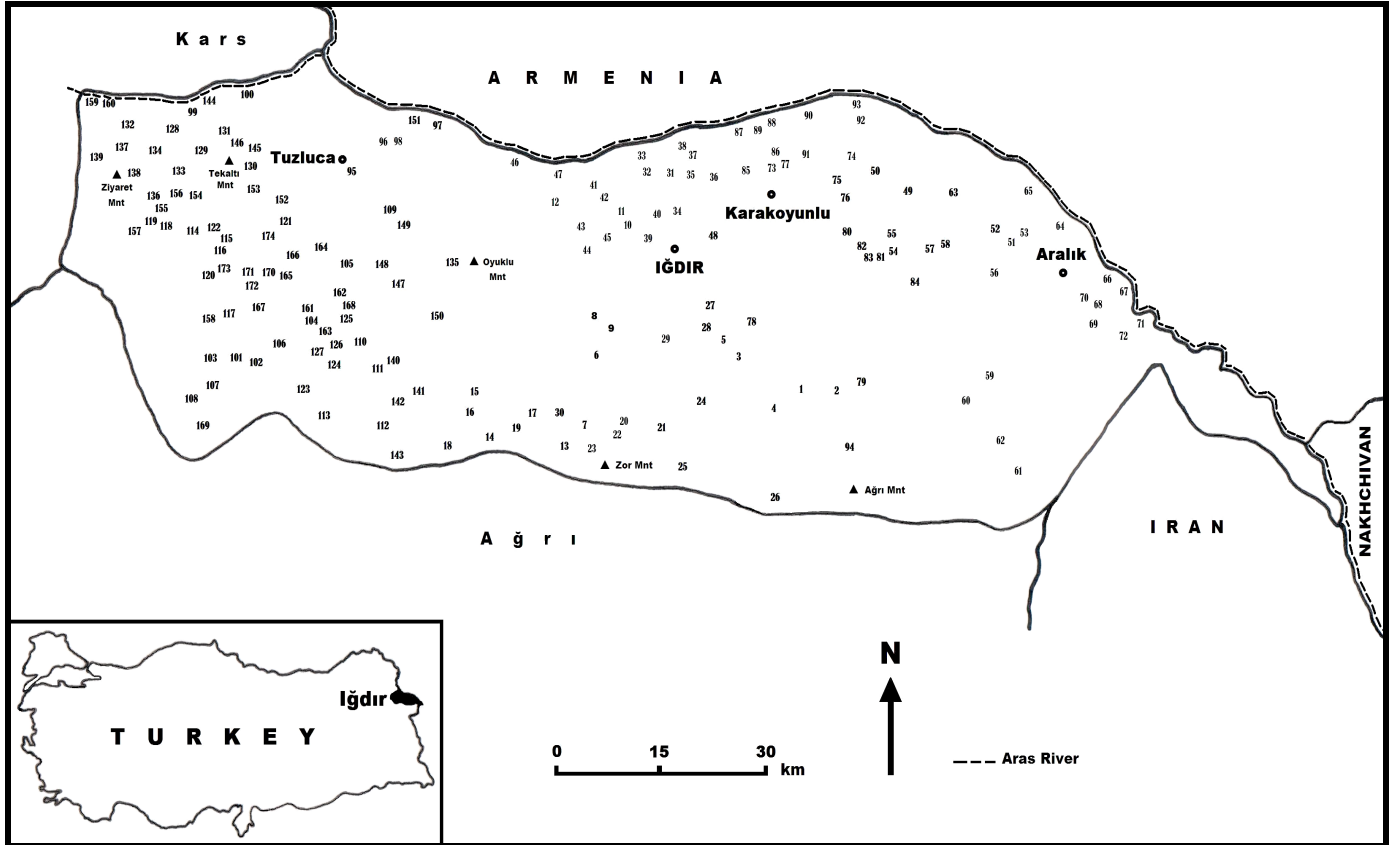


Figure 1. Map of Turkey showing Iğdır province and the numbers of the collection localities (see Table 1 for locality data).

### Study area

Iğdır province in the eastern part of Turkey is situated along the border with Armenia, Nakhchivan and Iran. Kars in the northwest and Ağrı in the west and south are the adjacent provinces. It occupies an area of 3.587 km<sup>2</sup> (Figure 1).

Iğdır is one of the least forested areas in Turkey, It is a strongly sun-exposed, highly elevated and gently sloped, windswept, treeless area dominated by steppe vegetation, alternating with streams and rocks. Several mountains emerge, such as Zor, Tekaltı, Ziyaret and Oyuklu.

*Prunus*, *Pyrus*, *Populus*, *Salix*, and *Elaeagnus* trees occasionally grow along the streams (Baytop & Denizci 1963), and both calcareous and siliceous rock outcrops can be found predominantly around the villages and on the mountains in the south.

Iğdir has an extreme climate. The summers are hot and dry while the winters are cold and snowy. The mean annual temperature is 11.6°C, the average humidity 63%, and the mean annual rainfall about 257.6 mm. Most precipitation falls during the winters as snow (Akman 1999).

The lichen flora of Turkey is similar to that of Europe (Yazici & Aslan 2003), and many species can be identified using the available floras for that area (e.g. Smith et al. 2009, Dobson 2005, Wirth 1995). However, the internal eastern region, including Iğdir, has more pronounced affinities with continental Asia.

### Results; list of taxa

The lichenological survey of Iğdir province yielded a total of 292 lichenized fungi. This includes 2 subspecies and 6 varieties, representing 96 genera in the *Ascomycota*.

We found nine taxa are new to Turkey. Of these 8 are also new to the whole of Asia.

The taxa are listed alphabetically. "#" indicates new records for Turkey and "\*" for Asia while "+" indicates parasitic lichens. All taxa are new to Iğdir region except *Caloplaca pelloidella*, *Caloplaca teicholyta* and *Pyrenodesmia variabilis*.

*Acarospora bullata* Anzi – Loc. 59, 60: on calcareous rock.

*Acarospora cervina* (Ach.) A. Massal. – Loc. 1, 2, 4, 5, 6, 8, 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 30, 48, 57, 59, 60, 61, 62, 75, 76, 78, 79, 80, 81, 82, 83, 84, 94, 98, 99, 100, 102, 103, 104, 105, 107, 109, 110, 111, 112, 115, 116, 120, 121, 122, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 136, 137, 138, 139, 140, 141, 142, 143, 145, 147, 148, 149, 150, 153, 154, 155, 156, 157, 158, 161, 162, 163, 164, 165, 167, 169, 170, 171, 172, 173, 174: on calcareous rock.

*Acarospora fuscata* (Nyl.) Th. Fr. – Loc. 1, 2, 3, 4, 5, 6, 9, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 30, 48, 54, 57, 59, 60, 61, 62, 79, 80, 81, 82, 84, 98, 99, 102, 103, 104, 105, 107, 108, 110, 111, 112, 113, 115, 122, 124, 125, 126, 127, 128, 129, 130, 132, 133, 134, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 152, 154, 155, 156, 157, 158, 161, 163, 167, 169, 170, 172, 173: on siliceous rock.

*Acarospora glaucocarpa* (Ach.) Körb. – Loc. 16: on calcareous rock.

*Acarospora impressula* Th. Fr. var. *impressula* – Loc. 6, 20, 22: on siliceous rock.

+*Acarospora impressula* Th. Fr. var. *hospitans* (H. Magn.) Clauzade & Cl. Roux – Loc. 22: on *Aspicilia cinerea*; 48, 62, 75, 76, 78, 79, 100, 124, 127, 136: on *Aspicilia desertorum*.

*Acarospora macrospora* (Hepp) A. Massal. ex Bagl. – Loc. 5, 6, 48, 61, 107, 126, 133: on calcareous rock.

*Acarospora oligospora* (Nyl.) Arnold – Loc. 125: on calcareous rock .

*Acarospora umbilicata* Bagl. – 169: on siliceous rock.

*Acarospora veronensis* A. Massal. – Loc. 1, 4, 5, 6, 9, 14, 17, 19, 21, 24, 25, 30, 48, 59, 61, 62, 79, 82, 84, 98, 103, 104, 106, 108, 109, 112, 113, 121, 124, 125, 127, 130, 131, 133, 134, 136, 138, 140, 142, 155, 156, 167, 172: on siliceous rock.

*Agonimia allobata* (Stizenb.) P. James – Loc. 79: on mosses.

*Agonimia tristicula* (Nyl.) Zahlbr. – Loc. 94: on mosses.

*Anaptychia ciliaris* (L.) Körb – Loc. 7: on mosses.

*Anaptychia kaspica* Gyeln. – Loc. 1, 2, 4, 5, 6, 13, 20, 22 : on mosses.

- Arthonia lapidicola* (Taylor) Branth & Rostr. – Loc. 14, 20, 61, 123, 128, 133, 139, 147: on calcareous rock.
- +*Arthonia varians* (Davies) Nyl. – Loc. 61: on *Lecanora rupicola*.
- Aspicilia caesiocinerea* (Nyl. ex Malbr.) Arnold – Loc. 1, 2, 5, 19, 20, 22: on soil; 3, 4, 6, 9, 13, 14, 18, 23, 26, 48, 54, 57, 59, 60, 61, 62, 75, 76, 78, 79, 80, 81, 82, 84, 94, 98, 99, 100, 104, 106, 110, 113, 118, 124, 126, 127, 128, 130, 133, 134, 136, 137, 139, 140, 142, 143, 146, 156, 157, 164, 165, 167: on calcareous rock.
- Aspicilia calcarea* Körb. – Loc. 13: on calcareous rock.
- Aspicilia cinerea* (L.) Körb. – Loc. 1, 2, 4, 5, 6, 7, 8, 9, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 30, 48, 57, 59, 60, 61, 62, 69, 75, 76, 78, 79, 80, 81, 82, 83, 84, 94, 98, 99, 100, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 115, 117, 118, 119, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 152, 153, 155, 156, 157, 158, 161, 163, 165, 169, 170, 172, 174: on siliceous rock.
- Aspicilia contorta* Körb. var. *contorta* – Loc. 80: on calcareous rock.
- Aspicilia contorta* subsp. *hoffmanniana* S. Ekman & Fröberg ex R. Sant. – Loc. 6, 81, 82, 120, 128, 132: on calcareous rock.
- Aspicilia desertorum* (Kremp.) Mereschk. – Loc. 1, 2, 4, 5, 6, 7, 8, 9, 14, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 30, 48, 57, 59, 60, 61, 62, 75, 76, 78, 79, 80, 81, 82, 83, 84, 94, 98, 99, 100, 102, 103, 104, 107, 108, 109, 110, 112, 113, 115, 120, 121, 122, 124, 126, 127, 128, 129, 130, 131, 132, 133, 134, 136, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149, 150, 154, 155, 156, 157, 158, 161, 162, 163, 165, 167, 169, 171, 172: on siliceous rock.
- Aspicilia fruticulosa* (Eversm.) Flagey – Loc. 25, 106, 119, 138: on soil.
- Aspicilia intermutans* (Nyl.) Arnold – Loc. 5, 6, 13, 14, 15, 106, 113, 126, 130: on siliceous rock.
- Athallia holocarpa* (Hoffm.) Arup, Frödén & Søchting – Loc. 1, 2, 7, 13, 14, 29, 30, 33, 61, 79, 82, 94, 99, 104, 110, 113, 116, 120, 126, 127, 129, 130, 131, 132, 134, 138, 148, 152, 153, 166, 168: on calcareous rock; 10, 12, 43, 44, 46, 72, 73, 84, 88, 89, 92, 96, 97, 98: on *Elaeagnus* sp.; 62: on *Juniperus communis* and *Cotoneaster integerrimus*.
- Bacidia laurocerasi* (Delise ex Duby) Vain in Zahlbr. – Loc. 61: on *Cotoneaster integerrimus*; 62: on *Crataegus* sp.
- Bellemerea cupreoatra* (Nyl.) Clauzade & Cl. Roux – Loc. 1, 4, 6, 61, 62, 78, 79, 99, 100, 118, 121, 123, 125, 128, 130, 133, 136, 138, 139, 140, 145, 146, 150, 170: on siliceous rock.
- Bilimbia lobulata* (Sommerf.) Hafellner & Coppins – Loc. 94: on mosses.
- Bilimbia sabuletorum* (Schreb.) Arnold – Loc. 13, 61, 79: on mosses.
- Blastenia crenularia* (With.) Arup, Søchting & Frödén – Loc. 18, 62, 132, 136, 142, 154, 155, 164, 167: on siliceous rock.
- Buellia aethalea* (Ach.) Th. Fr. – Loc. 108, 119, 126: on siliceous rock.
- +*Buellia badia* (Fr.) A. Massal. – Loc. 7, 13, 14, 15, 18, 61, 62, 79, 99, 125, 136, 142, 143, 145: on siliceous rock; 82: on *Xanthoparmelia tinctoria*; 22: on *Xanthoparmelia pulla*.
- Buellia epigaea* (Hoffm.) Tuck. – Loc. 2, 13, 18, 20, 22, 25, 26, 61, 62, 79, 94, 112, 138, 142, 143, 144, 146, 147, 148, 149, 150, 152, 153, 154, 155, 156, 157, 158, 161, 164, 165, 167, 168, 169, 171: on soil.
- Buellia sequax* (Nyl.) Zahlbr. – Loc. 79: on siliceous rock.

- Buellia spuria* (Schaer.) Anzi – Loc. 118: on siliceous rock.
- Calogaya decipiens* (Arnold) Arup, Frödén & Søchting – Loc. 2, 5, 18, 20, 22, 24, 25, 26, 57, 59, 60, 75, 76, 78, 80, 81, 82, 83, 84, 98, 110, 120, 125, 126, 131, 151, 160, 103, 104, 105, 112, 114, 115, 122, 124, 127, 136, 137, 138, 139, 140, 141, 142, 143, 146, 147, 148, 149, 150, 152, 154, 155, 156, 157, 158, 161, 162, 163, 164, 165, 167, 168, 169, 170, 171, 172, 173, 174: on calcareous rock; 48: on *Elaeagnus* sp.
- Calogaya lobulata* (Flörke) Arup, Frödén & Søchting – Loc. 5: on *Salix* sp.; 79, 132, 153: on *Populus* sp.; 48: on *Elaeagnus* sp.
- Caloplaca agardhiana* (Flot.) Flagey – Loc. 131: on calcareous rock.
- Caloplaca albolutescens* (Nyl.) H. Olivier – Loc. 5, 7, 18, 25, 26, 48, 54, 57, 62, 75, 76, 80, 81, 82, 83, 84, 103, 104, 105, 112, 122, 124, 127, 138: on calcareous rock.
- Caloplaca aractina* (Fr.) Häyrén – Loc. 5, 13, 62, 79, 123: on siliceous rock.
- Caloplaca atroflava* (Turner) Mong. – Loc. 13, 62, 80, 94, 111, 130: on calcareous rock.
- Caloplaca ceracea* J.R. Laundon – Loc. 7, 59, 60, 75, 76, 81, 82, 83, 84, 108, 110, 123, 129, 133, 136, 138: on siliceous rock.
- Caloplaca cerina* (Hedw.) Th. Fr. – Loc. 5, 7, 13, 15, 18, 30, 62, 79, 94, 108, 110, 118, 119, 126, 130, 102, 103, 104, 105, 112, 115, 127, 138, 139, 142, 143, 164, 165, 169: on mosses; 61 on *Cotoneaster integerrimus*.
- Caloplaca cerina* (Ehrh. ex Hedw.) Th. Fr. var. *chloroleuca* (Sm.) Th. Fr. – Loc. 6, 13, 61, 94, 146: on mosses.
- Caloplaca chlorina* (Flot.) Sandst. – Loc. 8, 16, 76, 80: on siliceous rock.
- Caloplaca conglomerata* (Bagl.) Jatta – Loc. 14, 80: on calcareous rock.
- Caloplaca conversa* (Kremp.) Jatta – Loc. 107: on siliceous rock.
- Caloplaca demissa* (Körb.) Arup & Grube – Loc. 81: on siliceous rock .
- +*Caloplaca grimmiae* (Nyl.) H. Olivier – Loc. 1, 2, 5, 6, 9, 13, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 30, 59, 61, 78, 79, 80, 81, 82, 94, 102, 103, 104, 105, 106, 109, 112, 113, 114, 115, 119, 122, 124, 125, 126, 127, 132, 134, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149, 150, 152, 153, 154, 155, 156, 157, 158, 161, 162, 163, 164, 165, 167, 169, 170, 171, 172, 173, 174: on the thallus of *Candelariella vitellina*.
- Caloplaca inconnexa* (Nyl.) Zahlbr. – Loc. 94, 120, 126, 132: on siliceous rock.
- #\**Caloplaca kansuensis* H. Magn. – Loc. 13, 48, 75, 76, 78, 79, 80, 81, 82, 83, 84: on siliceous rock (KTUB 2344).
- Caloplaca lecideina* (Müll. Arg.) Clauzade & Rondon – Loc. 16: on siliceous rock.
- Caloplaca pellodella* (Nyl.) Hasse – Loc. 3, 5, 7, 9, 13, 14, 16, 18, 20, 22, 48, 57, 62, 80, 94, 102, 106, 107, 108, 112, 113, 125, 126, 128, 130, 133, 136, 138: on siliceous rock.
- Caloplaca saxicola* (Hoffm.) Nordin – Loc. 1, 4, 5, 6, 7, 8, 14, 18, 21, 24, 29, 30, 54, 57, 62, 76, 79, 80, 81, 82, 83, 84, 94, 102, 103, 104, 111, 112, 114, 115, 121, 122, 124, 126, 127, 128, 131, 132, 136, 137, 139, 140, 141, 142, 143, 145, 146, 147, 148, 150, 154, 156, 157, 158, 165, 166, 167, 169, 170, 172, 173: on calcareous rock.
- Caloplaca teicholyta* (Ach.) J. Steiner – Loc. 48: on calcareous rock.
- Caloplaca xerica* Poelt & Vězda – Loc. 5, 8, 14, 16, 19, 48, 82, 94, 107, 113, 132, 133: on calcareous rock.
- Candelaria concolor* (Dicks.) Arnold – Loc. 48: on *Populus* sp.
- Candelariella aurella* (Hoffm.) Zahlbr. – Loc. 75, 81, 82, 94, 102, 111, 113, 116, 121, 125, 126, 127, 128, 131, 132, 134, 138, 139, 140, 146: on calcareous rock.

- Candelariella reflexa* (Nyl.) Lettau – Loc. 6, 48, 79: on *Populus* sp.
- Candelariella vitellina* (Ehrh.) Müll. Arg. – Loc. 1, 2, 3, 4, 5, 6, 7, 8, 9, 13, 14, 15, 16, 17, 19, 20, 21, 22, 48, 57, 59, 61, 62, 75, 76, 78, 79, 80, 81, 82, 84, 94, 100, 106, 107, 108, 110, 111, 113, 117, 118, 119, 121, 123, 125, 126, 128, 129, 130, 131, 132, 133, 134: on siliceous rock.
- Cetraria aculeata* (Schreb.) Fr. – Loc. 13, 127: on soil.
- Cetraria islandica* (L.) Ach. – Loc. 13, 130, 115, 139, 140, 142, 145, 146, 154, 155, 158, 163, 167, 168: on mosses and soil; 94, 118: on soil; 18, 25, 26, 30, 102, 103, 112, 122, 124, 127, 138: on mosses.
- Cetraria muricata* (Ach.) Eckfeldt – Loc. 13: on soil.
- Cladonia foliacea* (Huds.) Willd. – Loc. 13, 18, 61, 104, 112, 115, 118, 119, 124, 127, 138, 157: on mosses.
- Cladonia pocillum* (Ach.) O.J. Rich. – Loc. 13, 79: on soil and mosses; 61, 62, 94, 123: on mosses.
- Cladonia pyxidata* (L.) Hoffm. – Loc. 48, 94: on soil and mosses; 5, 7, 13, 30, 61, 62, 79, 103, 110, 112, 114, 115, 119, 122, 124, 127, 130, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 148, 150, 153, 154, 166: on mosses.
- Cladonia rangiformis* Hoffm. – Loc. 25, 54, 139, 164, 167, 172, 174: on mosses.
- Collema auriforme* (With.) Coppins & J.R. Laundon – Loc. 48, 94: on mosses.
- Collema crispum* (Huds.) Weber ex F.H. Wigg. – Loc. 48: on calcareous rock.
- Collema cristatum* (L.) Weber ex F.H. Wigg. Loc. 4, 5, 8, 76, 79, 80, 81, 82, 94, 100, 111, 125, 131, 132, 133, 143, 147, 167: on calcareous rock.
- Collema flaccidum* (Ach.) Ach. – Loc. 79: on siliceous rock and mosses; 7, 136: on siliceous rock.
- Collema fuscovirens* (With.) J.R. Laundon – Loc. 79: on mosses; 7 on calcareous rock.
- Collema subflaccidum* Degel. – Loc. 7: on siliceous rock.
- +*Collema tenax* (Sw.) Ach. – Loc. 5, 6, 7, 13, 18, 21, 26, 29, 30; 82, 94, 99, 100, 102, 103, 104, 105, 111, 112, 114, 115, 118, 122, 123, 124, 125, 127, 130, 131, 136, 137, 138, 139, 141, 143, 145, 146, 148, 154, 156, 157, 167, 168, 169: on calcareous rock; 48, 75, 126: on soil; 9, 79, 128: mosses; 132: on *Toninia diffracta*.
- Dermatocarpon luridum* (Dill. ex With.) J.R. Laundon – Loc. 1, 6, 62, 79: on calcareous rock.
- Dermatocarpon miniatum* (L.) W. Mann – Loc. 1, 2, 5, 6, 7, 13, 15, 16, 20, 21, 22, 23, 25, 61, 78, 79, 80, 94, 106, 107, 108, 110, 123, 130, 131, 134: on calcareous rock.
- #\**Dermatocarpon miniatum* var. *cirsodes* – Loc. 94: on calcareous rock (KTUB 2341).
- Dermatocarpon vellereum* Zschacke – Loc. 128, 130: on calcareous rock
- Dimelaena oreina* (Ach.) Norman – Loc. 1, 2, 4, 5, 6, 7, 8, 9, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 30, 57, 61, 62, 78, 79, 80, 81, 82, 83, 84, 94, 98, 99, 102, 103, 104, 106, 107, 108, 110, 111, 112, 113, 117, 118, 119, 121, 122, 124, 125, 126, 127, 128, 130, 132, 133, 134, 136, 138, 139, 141, 142, 143, 145, 146, 147, 149, 150, 154, 155, 157, 158, 162, 163, 164, 165, 167, 169, 170, 171, 172, 173, 174: on siliceous rock.
- Diploschistes muscorum* (Scop.) R. Sant. – Loc. 5, 7, 13, 15, 18, 20, 22, 25, 26, 62, 79, 94, 108, 118, 123, 130, 166: on mosses.
- Diploschistes ocellatus* (Fr.) Norman – Loc. 7, 61: on calcareous rock.
- Diploschistes scruposus* (Schreb.) Norman – Loc. 2, 4, 5, 6, 7, 13, 15, 21, 78, 79, 94, 100, 110, 128, 136, 145: on siliceous rock.

- Diplotomma alboatrum* (Hoffm.) Flot. – Loc. 6, 14, 20, 22, 81, 82, 94, 108, 113, 116, 119, 120, 121, 125, 126, 128, 131, 132, 133, 155: on calcareous rock.
- Endocarpon adscendens* (Anzi) Müll. Arg. – Loc. 7, 75, 107, 140: on calcareous rock.
- Endocarpon pusillum* Hedw. – Loc. 6, 62: on soil.
- Flavoparmelia caperata* (L.) Hale – Loc. 7: on mosses.
- Flavoplaca citrina* (Hoffm.) Arup, Frödén & Söchting – Loc. 79: on calcareous rock.
- Flavoplaca flavocitrina* (Nyl.) Arup, Frödén & Söchting – Loc. 83: on calcareous rock.
- Fulgensia fulgens* (Sw.) Elenkin – Loc. 48, 75, 99: on soil.
- Fuscopannaria mediterranea* (Tav.) P.M. Jørg. – Loc. 13: on mosses.
- Glypholecia scabra* (Pers.) Müll. Arg. – Loc. 132: on calcareous rock.
- Gyalolechia flavorubescens* (Huds.) Söchting, Frödén & Arup – Loc. 95, 104: on *Populus* sp.
- Gyalolechia flavovirescens* (Wulfen) Söchting, Frödén & Arup – Loc. 18, 25, 103, 112, 115, 127, 131: on calcareous rock.
- Heterodermia leucomelos* (L.) Poelt – Loc. 7, 13, 62, 79, 94, 130: on mosses.
- Hyperphyscia adglutinata* (Flörke) H. Mayrhofer & Poelt – Loc. 79: on *Elaeagnus* sp.
- Hypogymnia austrodes* (Nyl.) Räsänen – Loc. 13: on mosses.
- Immersaria athrocarpa* (Ach.) Rambold & Pietschm. – Loc. 1, 2, 5, 6, 7, 8, 9, 13, 16, 18, 20, 21, 22, 23, 24, 25, 26, 30, 54, 57, 59, 61, 62, 78, 79, 94, 98, 99, 102, 103, 104, 107, 109, 108, 112, 113, 118, 119, 121, 122, 123, 124, 125, 126, 127, 129, 130, 131, 133, 134, 136, 137, 138, 139, 140, 141, 142, 143, 145, 147, 150, 153, 154, 155, 156, 157, 158, 160, 161, 162, 163, 164, 165, 167, 169, 170, 171, 173, 174: on siliceous rock.
- Ionaspis lacustris* (With.) Lutzoni – Loc. 79, 108, 139, 140, 141, 146, 147, 154, 157, 158, 163: on siliceous rock.
- Lecania erysibe* (Ach.) Mudd – Loc. 81, 82, 94, 123: on calcareous rock.
- Lecania rabenhorstii* (Hepp) Arnold – Loc. 82, 83: on calcareous rock.
- Lecania turicensis* (Hepp) Müll. Arg. – Loc. 94, 120, 128: on calcareous rock.
- Lecanora albescens* (Hoffm.) Branth & Rostr. – Loc. 61, 94, 130: on calcareous rock.
- Lecanora argopholis* (Ach.) Ach. – Loc. 1, 2, 5, 6, 8, 9, 13, 14, 16, 18, 21, 23, 25, 26, 29, 30, 48, 57, 59, 61, 62, 75, 76, 78, 79, 80, 81, 82, 83, 84, 94, 98, 99, 100, 102, 103, 104, 107, 108, 110, 112, 113, 114, 115, 118, 121, 122, 124, 126, 127, 128, 129, 130, 133, 136, 138, 139, 140, 141, 143, 145, 146, 147, 154, 155, 157, 158, 162, 163, 165, 167, 169, 170, 174: on siliceous rock.
- Lecanora bicincta* Ramond var. *bicincta* – Loc. 13: on siliceous rock.
- #\**Lecanora bicincta* Ramond var. *sorediata* (Flot.) Leuckert & Poelt – Loc. 1, 13, 79, 110: on siliceous rock (KTUB 2347).
- Lecanora bolcana* (Pollich) Poelt – Loc. 5, 8, 9, 13, 18, 25, 54, 57, 61, 80, 117, 123, 130, 138, 140, 143, 146: on siliceous rock.
- Lecanora caesiosora* Poelt – Loc. 1, 2, 6, 13, 14, 15, 16, 48, 61, 62, 79, 80, 94, 110, 113, 126, 128, 130, 138: on siliceous rock.
- Lecanora cenisia* Ach. – Loc. 6, 7, 13, 61, 62, 79, 94, 108, 119, 130, 138: on siliceous rock.
- Lecanora crenulata* Hook. – Loc. 8, 13, 22, 116, 121, 125, 126, 131, 132: on calcareous rock.
- Lecanora dispersa* (Pers.) Röhl – Loc. 5, 6, 8, 9, 13, 18, 20, 22, 30, 48, 54, 57, 59, 60, 62, 79, 81, 82, 94, 98, 107, 110, 112, 115, 116, 126, 127, 128, 130, 134, 137, 138: on calcareous rock; 61: on *Juniperus communis*.

- Lecanora garovaglioii* (Körb.) Zahlbr. – Loc. 1, 7, 8, 13, 14, 20, 21, 22, 23, 59, 60, 61, 62, 80, 94, 99, 108, 110, 111, 118, 119, 121, 125, 129, 130, 131, 133, 134, 140, 142, 143, 146, 147, 155, 164: on siliceous rock.
- Lecanora hagenii* (Ach.) Ach. – Loc. 1: on *Juniperus communis*; 48: on *Populus* sp.; 61: on *Cotoneaster integerrimus*; 98: on *Elaeagnus* sp.; 62: on *Juniperus communis*, *Crataegus* sp. and *Berberis* sp.; 6, 20, 22, 59, 60, 79, 81, 82, 83, 94, 113: on calcareous rock.
- Lecanora intricata* (Ach.) Ach. – Loc. 148: on siliceous rock.
- Lecanora intumescens* (Rebent.) Rabenh. – Loc. 62: on *Crataegus* sp.
- Lecanora ochroidea* (Ach.) Nyl. – Loc. 13: on siliceous rock.
- Lecanora persimilis* (Th. Fr.) Arnold – Loc. 5: on *Salix* sp. and *Berberis* sp.
- Lecanora polytropa* (Ehrh.) Rabenh. – Loc. 13, 60, 62, 108, 126, 127, 141, 169, 170: on siliceous rock.
- #*Lecanora prophetae-eliae* Sipman – Loc. 7: on calcareous rock (KTUB 2346).
- Lecanora rupicola* (L.) Zahlbr. – Loc. 1, 2, 3, 5, 6, 7, 9, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 30, 55, 57, 60, 61, 62, 78, 79, 80, 94, 102, 103, 104, 106, 107, 108, 110, 112, 113, 114, 115, 117, 118, 119, 122, 123, 124, 125, 126, 127, 128, 130, 134, 136, 138, 139, 140, 141, 142, 143, 145, 146, 147, 150, 153, 154, 155, 157, 158, 163, 165, 167, 169, 170, 171, 173, 174: on siliceous rock
- Lecanora semipallida* H. Magn. – Loc. 2: on *Juniperus communis*; 1, 5, 6, 7, 8, 9, 13, 16, 20, 22, 59, 60, 76, 79, 80, 81, 82, 83, 84, 94, 98, 99, 111, 113, 116, 125, 126, 127, 128, 130, 131, 132, 133, 134, 138: on calcareous rock.
- Lecanora subcarnea* (Lilj.) Ach. – Loc. 13, 20, 26, 62, 79, 94, 108, 123, 130, on siliceous rock.
- Lecanora swartzii* (Ach.) Ach. – Loc. 13, 62, 94, 107, 118, 127: on siliceous rock.
- Lecidea atrobrunnea* (DC.) Schaer. – Loc. 13, 14, 48, 59, 60, 61, 62, 79, 80, 81, 82, 83, 98, 108, 117, 123, 130, 131, 133, 134, 138: on siliceous rock.
- Lecidea confluens* (Weber) Ach. – Loc. 108: on siliceous rock.
- Lecidea fuscoatra* (L.) Ach. – Loc. 1, 4, 6, 8, 13, 15, 16, 17, 18, 19, 20, 22, 23, 26, 48, 59, 61, 79, 94, 98, 103, 104, 112, 113, 115, 117, 119, 122, 123, 125, 126, 127, 129, 134, 137, 138, 140, 146, 149, 153, 154, 156, 157, 165, 169, 170, 174: on siliceous rock.
- Lecidea grisella* Flörke – Loc. 80, 108, 128: on siliceous rock.
- Lecidea lapicida* (Ach.) Ach. – Loc. 13, 108, 130: on siliceous rock.
- Lecidea lithophila* (Ach.) Ach. – Loc. 79, 130: on siliceous rock.
- Lecidea promiscens* Nyl. – Loc. 59, 79, 108, 119, 121, 128, 134: on siliceous rock .
- Lecidea plana* (J. Lahm) Nyl. – Loc. 1, 3, 5, 7, 13, 15, 20, 21, 22, 59, 61, 62, 79, 80, 94, 107, 113, 125, 126, 130, 134, 127, 138: on siliceous rock.
- Lecidella carpathica* Körb. – Loc. 1, 2, 4, 5, 6, 7, 8, 9, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 30, 48, 57, 59, 60, 61, 62, 78, 79, 80, 81, 82, 84, 94, 98, 102, 103, 106, 107, 108, 109, 112, 113, 115, 116, 117, 118, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 133, 134, 138, 140, 155, 169: on calcareous rock.
- Lecidella euphorea* (Flörke) Hertel – Loc. 61, 62, 94: on *Juniperus communis*.
- Lecidella patavina* (A. Massal.) Knoph & Leuckert – Loc. 7, 61, 134: on siliceous rock.
- Lecidella stigmatea* (Ach.) Hertel & Leuckert – Loc. 7, 13, 20, 22, 62, 79, 103, 113, 127, 130, 133, 134, 157, 158: on calcareous rock.
- Lepraria incana* (L.) Ach. – Loc. 25, 61, 62: on mosses.
- Lepraria crassissima* (Hue) Lettau – Loc. 13, 61, 62, 79, 94: on mosses.



- Lepraria lobificans* Nyl. – Loc. 94: on *Juniperus communis*.
- Lepraria membranacea* (Dicks.) Vain. – Loc. 7, 13, 61, 62, 94: on mosses.
- Leprocaulon microscopicum* (Vill.) Gams – Loc. 8: on mosses.
- Leproplaca cirrochroa* (Ach.) Arup, Frödén & Søchting var. *cirrochroa* – Loc. 13, 94: on calcareous rock.
- Leptogium gelatinosum* (With.) J.R. Laundon – Loc. 7, 13, 79, 94, 103, 126, 130: on mosses.
- Leptogium lichenoides* (L.) Zahlbr. – Loc. 5, 7, 13, 79, 94, 118, 121, 132, 112, 115, 122, 124, 127, 136: on mosses.
- Leptogium saturninum* (Dicks.) Nyl. – Loc. 79: on mosses.
- Leptogium teretiusculum* (Flörke) Arnold – Loc. 1, 4, 5, 15, 21, 80, 82: on calcareous rock.
- Lichinella stipatula* Nyl. – 43: on siliceous rock.
- Lobothallia alphoplaca* (Wahlenb.) Hafellner – Loc. 3, 5, 7, 13, 14, 15, 20, 22, 48, 76, 84, 98, 100, 106, 107, 110, 119, 121, 125, 126, 128, 129, 130, 131, 133, 134, 139, 143, 165, 169: on siliceous rock.
- Lobothallia praeartiosa* (Nyl.) Hafellner – Loc. 1, 2, 3, 5, 6, 13, 16, 59, 81, 82, 119, 128, 129, 134: on siliceous rock.
- Lobothallia radiosa* (Hoffm.) Hafellner – Loc. 6, 18, 20, 22, 26, 54, 57, 61, 80, 84, 98, 100, 104, 105, 112, 117, 125, 127, 128, 133, 134, 136, 138: on calcareous rock.
- Megaspora verrucosa* (Ach.) Hafellner & V. Wirth – Loc. 13, 25, 94, 118, 130, 140, 141, 142, 143, 150, 153, 154, 155, 158, 161, 162, 163, 164, 167, 169: on mosses.
- Montanelia disjuncta* (Erichsen) Divakar, A. Crespo, Wedin & Essl. – Loc. 14, 15, 16, 79, 107, 110, 126, 128, 134: on siliceous rock.
- Montanelia soreliata* (Ach.) Divakar, A. Crespo, Wedin & Essl. – Loc. 106: on siliceous rock.
- Melanelia stygia* (L.) Essl. – Loc. 15, 21, 106, 126, 128: on siliceous rock.
- Melanelixia subargentifera* (Nyl.) O. Blanco et al. – Loc. 4: on mosses and *Elaeagnus* sp.; 6, 113: on *Elaeagnus* sp.; 7, 14, 126, 132: on mosses.
- Melanohalea elegantula* (Zahlbr.) O. Blanco et al. – Loc. 61, 94: on *Juniperus communis*; 62: on *Juniperus communis* and *Cotoneaster integerrimus*.
- Melanohalea infumata* (Nyl.) O. Blanco et al. – Loc. 94: on *Juniperus communis*; 8, 17, 20, 79: on calcareous rock; 61: on mosses and *Cotoneaster integerrimus*; 2, 3, 4, 5, 6, 7, 9, 13, 14, 15, 16, 18, 19, 21, 22, 23, 25, 26, 30, 48, 62, 80, 102, 103, 104, 106, 107, 110, 112, 113, 115, 118, 119, 122, 123, 124, 125, 126, 127, 128, 130, 132, 133, 134, 136, 138, 139, 140, 141, 142, 143, 146, 148, 157, 169, 170, 171, 173: on mosses.
- Normandina pulchella* (Borrer) Nyl. – Loc. 6: on mosses.
- Parmelia omphalodes* (L.) Ach. – Loc. 61: on *Juniperus communis*.
- Parmelia saxatilis* (L.) Ach. – Loc. 7, 13, 62, 79, 94, 130, 138, 141, 142, 167: on mosses.
- Parmelia sulcata* Taylor – Loc. 7, 61: on *Juniperus communis* and mosses.
- Parmelina pastillifera* (Harm.) Hale – Loc. 154: on mosses.
- Parmelina tiliacea* (Hoffm.) Hale – Loc. 1, 5, 6, 7, 13, 14, 15, 18, 21, 23, 25, 26, 30, 60, 61, 62, 79, 94, 102, 103, 110, 112, 115, 118, 122, 123, 124, 126, 127, 130, 136, 137, 138, 139, 142, 143, 146, 147, 149, 153, 154, 156, 157, 158, 161, 164, 166, 167, 171, 174: on mosses.
- Parmotrema perlatum* (Huds.) M. Choisy – Loc. 7: on mosses.
- Parvoplaca tirolensis* (Zahlbr.) Arup, Søchting & Frödén – 7, 15, 48, 61, 94, 99, 123, 124, 127, 136, 139, 140: on mosses; 119: on *Peltigera rufescens*.

- Peccania coralloides* (A. Massal.) A. Massal. – Loc. 48, 100: on calcareous rock.
- Peltigera canina* (L.) Willd. – Loc. 7: on mosses.
- Peltigera elisabethae* Gyeln. – Loc. 13, 94: on mosses.
- Peltigera lepidophora* (Nyl.) Bitter – Loc. 61, 79: on soil.
- Peltigera malacea* (Ach.) Funck – Loc. 13: on mosses.
- Peltigera* cf. *monticola* Vitik. – Loc. 79: on mosses.
- Peltigera neopolydactyla* (Gyeln.) Gyeln. – Loc. 62: on mosses.
- Peltigera ponojensis* Gyeln. – Loc. 7, 79, 94: on mosses.
- Peltigera praetextata* (Flörke ex Sommerf.) Zopf – Loc. 7: on mosses.
- Peltigera rufescens* (Weiss) Humb. – Loc. 13, 20, 22, 29, 30, 60, 61, 62, 79, 103, 104, 110, 112, 114, 115, 119, 122, 127, 130, 138, 140, 142, 143, 145, 147, 149, 150, 152, 153: on mosses; 94 : on *Juniperus communis*.
- Peltigera scabrosa* Th. Fr. – Loc. 13: on mosses.
- Peltula euploca* (Ach.) Poelt ex Ozenda & Clauzade – Loc. 5, 6, 80, 81: on siliceous rock.
- Pertusaria albescens* (Huds.) M. Choisy & Werner – Loc. 7, 94: on *Juniperus communis*.
- Pertusaria amarescens* Nyl. – Loc. 128: on siliceous rock.
- Pertusaria aspergilla* (Ach.) J.R. Laundon – Loc. 7, 61, 128: on siliceous rock.
- Pertusaria excludens* Nyl. – Loc. 7, 13, 26, 30, 60, 61, 62, 81, 82, 94, 107, 108, 112, 122, 124, 127, 128, 130, 138, 140, 143, 146, 147, 150, 156, 165, 162, 169: on siliceous rock.
- Pertusaria flavicans* Lamy – Loc. 26, 94, 128, 130, 124, 136, 138, 141, 142, 154, 157, 158, 163, 167: on siliceous rock.
- Pertusaria lactescens* Mudd – Loc. 118: on siliceous rock.
- Pertusaria pseudocorallina* (Lilj.) Arnold – Loc. 13, 61, 94, 110, 130, 134: on siliceous rock.
- Phaeophyscia cernohorskyi* (Nádv.) Essl. – Loc. 1, 2, 7, 8, 9, 48, 57, 59, 60, 76, 78, 79, 80, 81, 82, 83, 85, 98, 99, 121, 122, 124, 127, 128, 129, 131, 132, 136, 137, 158: on siliceous rock; 146: on calcareous rock; 5, 6, 100, 107, 108, 110: on mosses; 75: on soil; 84, 130: on *Juniperus communis*.
- Phaeophyscia endococcina* (Körb.) Moberg – Loc. 6, 16, 79, 118, 130, on siliceous rock; 94, 119, 142: on mosses; 7, 21, 59, 61, 62: on calcareous rock.
- #\**Phaeophyscia hispidula* (Ach.) Essl. – Loc. 98: on calcareous rock (KTUB 2342).
- Phaeophyscia nigricans* (Flörke) Moberg – Loc. 3, 95, 98: on *Elaeagnus* sp.; 13: on *Populus* sp. and *Elaeagnus* sp.; 61: on *Cotoneaster integerrimus*, 79: on *Populus*; 14, 21, 48, 54, 59, 60, 65, 74, 75, 77, 96, 104, 122, 132, 134, 153, 166, 171, 174: on calcareous rock.
- Phaeophyscia orbicularis* (Neck.) Moberg – Loc. 1, 2, 4: on *Juniperus communis*; 6, 37, 38, 83, 98: on *Elaeagnus* sp.; 101: on *Salix* sp. and *Populus* sp.; 34, 36, 48, 49, 52, 72, 79, 81, 97, 104, 122, 148, 153, 159, 166, 168, 171, 172, 173, 174: on *Populus* sp.; 62: on *Crataegus* sp.
- Phaeophyscia sciastra* (Ach.) Moberg – Loc. 1, 4, 7, 121: on mosses; 5, 6, 79, 94, 125, 158: on calcareous rock.
- Phaeorrhiza nimbosa* (Fr.) H. Mayrhofer & Poelt – Loc. 140, 142: on soil.
- Phlyctis argena* (Ach.) Flot. – 130: on *Crataegus* sp.
- Physcia adscendens* (Fr.) H. Olivier – Loc. 43, 63, 85, 104: on *Populus* sp., 48: on *Elaeagnus* sp., *Populus* sp. and *Juniperus communis*; 94, 95, 98, 173: on *Elaeagnus* sp.
- Physcia aipolia* (Ehrh. ex Humb.) Fűrnr. – Loc. 13, 61: on *Cotoneaster integerrimus*.

- Physcia biziana* (A. Massal.) Zahlbr. – Loc. 1, 5, 6, 7, 13, 14, 25, 29, 48, 60, 69, 96, 107, 110, 114, 119, 122, 123, 131, 134, 161, 166, 172, 174: on calcareous rock; 61: on *Cotoneaster integerrimus*; 62: on *Crataegus* sp.; 94: on *Juniperus communis*; 79: on *Populus* sp.; 108: on mosses; 101: on *Salix* sp. and *Populus* sp.
- Physcia caesia* (Hoffm.) Hampe ex Fűrnr. – Loc. 1, 5, 7, 14, 16, 23, 30, 108, 110, 112, 118: on mosses; 6, 13, 15, 20, 22, 59, 60, 61, 62, 94, 107, 113, 119, 121, 123, 126, 130, 134, 139: on calcareous rock.
- Physcia dimidiata* (Arnold) Nyl. – Loc. 1, 6: on mosses and *Juniperus communis*; 2: on *Populus* sp.; 62: on *Juniperus communis*; 4: on mosses; 5, 7, 8, 9, 13, 14, 15, 16, 20, 21, 22, 23, 25, 26, 30, 48, 57, 59, 60, 61, 75, 76, 78, 79, 80, 81, 82, 83, 94, 98, 99, 102, 103, 104, 107, 108, 112, 113, 114, 115, 118, 121, 122, 123, 124, 126, 127, 128, 130, 134, 136, 138, 139, 140, 141, 142, 143, 146, 149, 155, 167, 170, 171, 173, 174: on calcareous rock.
- Physcia dubia* (Hoffm.) Lettau – Loc. 16: on *Juniperus communis*; 13, 20: on mosses; 48, 79: on *Populus* sp.; 61: on *Cotoneaster integerrimus*; 62: on *Juniperus communis*, *Crataegus* sp. and *Berberis* sp.; 94: on mosses and *Juniperus communis*; 95: on *Elaeagnus* sp.; 2, 4, 5, 7, 8, 14, 15, 16, 22, 23, 57, 59, 75, 80, 81, 82, 83, 84, 97, 106, 107, 108, 110, 111, 113, 114, 115, 117, 119, 121, 122, 123, 124, 126, 127, 128, 130, 133, 134, 138, 161, 170: on siliceous rock.
- #\**Physcia scopulorum* (Lambinon & Vězda) Poelt & Nimis – Loc. 130: on calcareous rock (KTUB 2350).
- Physcia tribacia* (Ach.) Nyl. – 7: on calcareous rock.
- Physconia enteroxantha* (Nyl.) Poelt – Loc. 1, 3, 5, 6, 7, 14, 61, 62, 94, 123, 130: on mosses.
- Physconia distorta* (With.) J.R. Laundon – Loc. 84: on *Juniperus communis*; 101: on *Populus* sp.
- Physconia muscigena* (Ach.) Poelt – Loc. 1, 2, 5, 6, 7, 13, 14, 15, 18, 24, 25, 26, 30, 57, 59, 60, 61, 62, 79, 82, 94, 102, 103, 104, 107, 110, 112, 114, 115, 119, 122, 124, 126, 127, 130, 134, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 149, 153, 156, 157, 158, 161, 162, 163, 164, 166, 167, 169, 170, 171, 172, 173, 174: on mosses.
- Physconia perisidiosa* (Erichsen) Moberg – Loc. 1, 4, 5, 6, 7, 14, 15, 16, 21, 30, 61, 79, 94, 102, 103, 110, 112, 119, 121, 122, 123, 124, 127, 130, 134, 138, 150, 152, 155, 164, 165, 166, 169, 172, 174: on mosses.
- Placocarpus schaeferi* (Fr.) Breuss – Loc. 125, 132, 139, 140, 141, 142, 143, 146, 154, 155, 157, 158, 162, 167, 169, 170: on calcareous rock.
- #\**Placopyrenium iranicum* Breuss – Loc. 20: on siliceous rock (KTUB 2351).
- Placopyrenium trachyticum* (Hazsl.) Breuss – Loc. 8, 9, 16, 20, 22, 48, 76, 80, 81, 82, 84, 98, 131, 132, 134, 158: on siliceous rock.
- Placynthium nigrum* (Huds.) Gray – Loc. 59, 143, 146, 147, 150, 156, 157, 165, 169, 174: on calcareous rock.
- Pleopsisidum flavum* (Bell.) Körb. – Loc. 99: on siliceous rock.
- Pleurosticta acetabulum* (Neck.) Elix & Lumbsch – Loc. 61: on *Juniperus communis*.
- Polycauliona polycarpa* (Hoffm.) Frödén, Arup & Søchting – Loc. 75, 88: on *Elaeagnus* sp.; 84: on *Juniperus communis*; 79: on *Juniperus communis* and *Populus* sp.; 62: on *Crataegus* sp.; 37, 39, 45, 56, 101, 114: on *Populus* sp.; 48: on *Robinia* sp., *Salix* sp. and *Populus* sp.

- Polysporina simplex* (Taylor) Vězda – Loc. 157: on siliceous rock.
- Porpidia albocaerulescens* (Wulfen) Hertel & Knoph – Loc. 106: on siliceous rock.
- Porpidia macrocarpa* (DC.) Hertel & A.J. Schwab – Loc. 7: on calcareous rock.
- Protoparmeliopsis muralis* (Schreb.) Rabenh. – Loc. 1: on mosses and calcareous rock; 3: on soil and calcareous rock; 76, 78, 94: on mosses; 2, 4, 5, 6, 7, 8, 9, 13, 14, 15, 16, 18, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 48, 54, 57, 59, 60, 61, 62, 69, 75, 79, 80, 81, 82, 83, 84, 98, 99, 100, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 121, 122, 123, 124, 127, 125, 126, 128, 129, 130, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149, 150, 152, 153, 154, 155, 156, 157, 158, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174: on calcareous rock.
- Psora decipiens* (Hedw.) Hoffm. – Loc. 30, 48, 99, 102, 103, 112, 122, 124, 137: on calcareous rock.
- Psora vallesiaca* (Schaer.) Timdal – Loc. 9, 125, 128, 129, 131: on calcareous rock.
- Pyrenodesmia alociza* (A. Massal) Arnold – Loc. 131: on calcareous rock.
- Pyrenodesmia variabilis* (Pers.) A. Massal – Loc. 20, 22, 48, 62, 75, 80, 81, 98, 111, 116, 123, 126, 128, 130, 131, 132, 134: on calcareous rock.
- #*Pyrenopsis subareolata* Nyl. – Loc. 131: on siliceous rock (KTUB 2349).
- Ramalina capitata* (Ach.) Nyl. – Loc. 1, 2, 8, 25, 61, 62, 79, 94, 118, 123, 126, 134, 138, 139, 158: on siliceous rock.
- Ramalina pollinaria* (Westr.) Ach. – Loc. 173: on siliceous rock.
- Ramalina polymorpha* (Lilj.) Ach. – Loc. 1, 6, 13, 14, 16, 18, 25, 26, 30, 61, 62, 79, 81, 83, 94, 102, 103, 107, 108, 110, 113, 118, 122, 126, 127, 130, 134, 135, 136, 138, 163: on siliceous rock.
- Ramalina siliquosa* (Huds.) A.L. Sm. – Loc. 166: on siliceous rock.
- Rhizocarpon disporum* (Nägeli ex Hepp) Müll. Arg. – Loc. 1, 15, 16, 61, 94, 99, 110, 111, 113, 131, 133, 142: on siliceous rock.
- Rhizocarpon geographicum* (L.) DC. – Loc. 1, 2, 4, 5, 6, 7, 9, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 54, 57, 60, 61, 62, 78, 79, 80, 81, 82, 94, 100, 102, 103, 104, 107, 108, 109, 110, 112, 113, 117, 118, 119, 121, 122, 123, 124, 125, 126, 127, 128, 130, 132, 133, 134, 135, 138, 139, 140, 141, 142, 143, 145, 146, 147, 150, 153, 154, 155, 157, 158, 161, 162, 163, 164, 165, 167, 169, 170: on siliceous rock.
- Rhizocarpon geminatum* Körb. – Loc. 13: on siliceous rock.
- Rhizocarpon lecanorinum* Anders – Loc. 134: on siliceous rock.
- Rhizocarpon subgeminatum* Eitner – Loc. 143: on siliceous rock.
- Rhizoplaca chrysoleuca* (Sm.) Zopf – Loc. 1, 2, 5, 6, 7, 8, 9, 13, 14, 15, 16, 18, 19, 22, 23, 24, 25, 26, 30, 54, 57, 60, 61, 62, 78, 79, 94, 98, 102, 103, 104, 105, 106, 107, 108, 110, 112, 113, 115, 117, 118, 123, 122, 124, 125, 126, 127, 130, 131, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 154, 155, 158, 161, 162, 163, 165, 167, 169, 170, 171: on siliceous rock.
- Rhizoplaca melanophthalma* (DC.) Leuckert & Poelt – Loc. 1, 2, 3, 4, 5, 6, 7, 8, 9, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 30, 60, 61, 62, 79, 80, 94, 99, 103, 104, 106, 107, 108, 110, 112, 113, 115, 117, 118, 119, 122, 124, 125, 126, 127, 130, 133, 134, 136, 138, 139, 142, 143, 146, 155, 158, 167, 169, 170: on siliceous rock.

- Rhizoplaca peltata* (DC.) Leuckert & Poelt – Loc. 1, 5, 8, 9, 21, 48, 75, 76, 98, 99, 100, 107, 110, 125, 126, 130, 131, 134: on siliceous rock.
- Rhizoplaca subdiscrepans* (Nyl.) R. Sant. – Loc. 107: on siliceous rock.
- Rinodina bischoffii* (Hepp) A. Massal. – Loc. 99, 131, 132: on calcareous rock.
- Rinodina calcarea* (Hepp ex Arnold) Arnold – Loc. 6, 120, 131: on calcareous rock.
- Rinodina confragosa* (Ach.) Körb. – Loc. 61, 117: on siliceous rock.
- Rinodina guzzinii* Jatta – Loc. 120: on calcareous rock.
- Rinodina luridescens* (Anzi) Arnold – Loc. 117, 126: on siliceous rock.
- Rinodina milvina* (Wahlenb.) Th. Fr. – Loc. 1, 6, 7, 13, 16, 17, 18, 19, 20, 23, 24, 25, 26, 30, 48, 54, 57, 59, 61, 62, 79, 80, 94, 102, 103, 104, 107, 108, 110, 112, 115, 118, 119, 120, 122, 123, 124, 126, 127, 128, 130, 131, 132, 133, 135, 136, 138, 139, 140, 141, 142, 143, 145, 146, 149, 150, 154, 155, 156, 157, 158, 163, 165, 167, 169, 170: on calcareous rock.
- Rinodina pyrina* (Ach.) Arnold – Loc. 11, 31, 51, 64, 66, 68, 70, 72, 75, 105, 129: on *Elaeagnus* sp.; 48: on *Juniperus communis* and *Elaeagnus* sp.; 61: on *Juniperus communis* and *Berberis* sp.; 62, 84: on *Juniperus communis*.
- Romjularia lurida* (Ach.) Timdal – Loc. 6, 131, 132, 141: on soil in rock fissures.
- Rufoplaca arenaria* (Pers.) Arup, Söchting & Frödén – Loc. 19, 79, 107, 108, 173: on siliceous rock.
- Rusavskia sorediata* (Vain.) S.Y.Kondr. & Kärnefelt – Loc. 118: on mosses and calcareous rock; 119: on calcareous rock.
- Sarcogyne clavus* (DC.) Kremp. – Loc. 8, 129, 131, 133: on siliceous rock.
- Sarcogyne regularis* Körb. – Loc. 121, 132: on calcareous rock.
- Sarcogyne privigna* (Ach.) A. Massal. – Loc. 121, 128, 131, 132: on siliceous rock.
- Sporastatia testudinea* (Ach.) A. Massal. – Loc. 61: on siliceous rock.
- Staurothele areolata* (Ach.) Lettau – Loc. 98, 107, 143: on siliceous rock.
- Staurothele fissa* (Taylor) Zwackh – Loc. 81, 82, 94: on siliceous rock.
- Tephromela atra* (Huds.) Hafellner – Loc. 7, 13, 61, 62, 119: on siliceous rock.
- Thyrea confusa* Henssen – 119: on calcareous rock.
- Toninia candida* (Weber) Th. Fr. – 132: on calcareous rock.
- Toninia diffracta* (A. Massal.) Zahlbr. – Loc. 125, 132, on calcareous rock.
- Toninia opuntiioides* (Vill.) Timdal – Loc. 18, 30, 48, 75, 100, 103, 104, 124, 127, 128, 130, 137, 138, 139, 142, 143, 158, 169: on soil.
- Toninia sedifolia* (Scop.) Timdal – Loc. 3, 5, 9, 17, 18, 19, 23, 25, 26, 30, 48, 54, 57, 99, 100, 102, 103, 104, 105, 112, 115, 122, 124, 127, 135, 136, 137, 138, 139, 140, 141, 142, 143, 146, 147, 148, 149, 152, 153, 154, 155, 156, 157, 158, 161, 162, 163, 165, 166, 167, 169, 170, 171, 174: on soil.
- Toninia squalida* (Ach.) A. Massal. – Loc. 1, 5, 6, 7, 8, 9, 16, 17, 19, 21, 25, 26, 99, 100, 107, 108, 121, 132: on calcareous rock.
- Toninia tristis* (Th. Fr.) Th. Fr. – Loc. 15, 108, 130: on soil.
- Umbilicaria aprina* Nyl. – Loc. 13, 61, 94: on siliceous rock.
- Umbilicaria crustulosa* (Ach.) Lamy – Loc. 13, 18, 61, 94, 134, 138, 139, 143, 154, 155, 157, 165, 169: on siliceous rock.
- Umbilicaria cylindrica* (L.) Delise – Loc. 13, 18, 61, 94, 130, 25, 26, 103, 138, 139, 140, 141, 142, 145, 155, 158, 169: on siliceous rock.

- Umbilicaria decussata* (Vill.) Zahlbr. – Loc. 13, 94, 138: on siliceous rock.
- Umbilicaria grisea* Hoffm. – Loc. 134: on siliceous rock.
- Umbilicaria hirsuta* (Sw. ex Westr.) Ach. – Loc. 134: on siliceous rock.
- Umbilicaria hyperborea* (Ach.) Hoffm. – Loc. 13, 61, 94, 130, 134, 169: on siliceous rock.
- Umbilicaria nyländeriana* (Zahlbr.) H. Magn. – Loc. 13, 62, 94, 118, 119, 130: on siliceous rock.
- Umbilicaria polyphylla* (L.) Baumg. – Loc. 13: on siliceous rock.
- Umbilicaria proboscidea* (L.) Schrad. – Loc. 13, 61: on siliceous rock.
- Umbilicaria vellea* (L.) Ach. – Loc. 6, 7, 13, 18, 23, 24, 61, 94, 108, 118, 123, 130, 134, 139, 141, 142, 146, 150, 154, 155, 157, 158, 163, 165, 167, 169, 170: on siliceous rock.
- Vahliella leucophaea* (Vahl) P.M. Jørg. – Loc. 79: on calcareous rock.
- #\**Variospora glomerata* (Arup) Arup, Søchting & Frödén – Loc. 8, 48, 75, 76, 80, 82, 84: on calcareous rock (KTUB 2348).
- Verrucaria calciseda* DC. – Loc. 26, 131, 132, 141, 169: on calcareous rock.
- Verrucaria compacta* (A. Massal.) Jatta – Loc. 20, 60, 61, 82, 98, 100, 131, 169: on calcareous rock.
- Verrucaria fuscella* (Turner) Winch – Loc. 1, 4, 5, 6, 8, 16, 20, 22, 23, 48, 61, 62, 76, 79, 80, 81, 94, 98, 99, 100, 103, 106, 118, 119, 121, 122, 125, 126, 127, 130, 131, 132, 138, 169: on calcareous rock.
- +*Verrucaria latericola* Erichsen – Loc. 131, 132: on *Lecanora* sp.
- Verrucaria macrostoma* Dufour ex DC. – Loc. 20, 22, 128: on calcareous rock.
- Verrucaria muralis* Ach. 125, on calcareous rock.
- Verrucaria nigrescens* Pers. – Loc. 18, 20, 22, 23, 25, 26, 30, 54, 57, 59, 99, 100, 106, 107, 108, 110, 116, 123, 125, 126, 128, 139, 140, 141, 142, 143, 145, 147, 150, 152, 154, 155, 156, 157, 158, 161, 162, 164, 165, 166, 167, 169, 170, 173, 174: on calcareous rock.
- Verrucaria polysticta* Borrer, – Loc. 131: on calcareous rock.
- Xanthocarpia crenulatella* (Nyl.) Frödén, Arup & Søchting – Loc. 75, 76, 79, 83, 116, 125, 131, 132: on siliceous rock.
- Xanthocarpia lactea* (A. Massal.) A. Massal. – Loc. 111, 125, 132: on calcareous rock.
- Xanthomendoza fallax* Søchting, Kärnefelt & S.Y. Kondr. – Loc. 2: on *Crateagus* sp.; 48, 55, 98, 152: on *Elaeagnus* sp.; 79: on *Populus* sp. and *Elaeagnus* sp.; 35, 86, 91, 93, 96, 97, 101, 105, 114, 159, 168, 171, 173, 174: on *Populus* sp.
- Xanthomendoza fulva* (Hoffm.) Søchting, Kärnefelt & S.Y. Kondr. – Loc. 48: on *Populus* sp.
- Xanthoparmelia convoluta* (Kremp.) Hale – Loc. 13, 119, 123: on soil.
- Xanthoparmelia conspersa* (Ehrh. ex Ach.) Hale – Loc. 6, 18, 24, 26, 107, 129, 138: on siliceous rock.
- Xanthoparmelia delisei* (Duby) O. Blanco et al. – Loc. 6, 107, 129, 133: on siliceous rock.
- Xanthoparmelia pokornyi* (Körb.) O. Blanco et al. – Loc. 13, 18, 79, 107, 119, 126, 130: on soil.
- Xanthoparmelia pulla* (Ach.) O. Blanco et al. – Loc. 1, 2, 4, 5, 111, 113, 118, 119, 121, 125, 126, 128, 129, 130, 133, 134, 138, 143, 146, 169: on siliceous rock.
- Xanthoparmelia stenophylla* (Ach.) Ahti & D. Hawksw. – Loc. 1, 2, 4, 5, 6, 7, 8, 9, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 48, 61, 75, 76, 78, 79, 81, 82, 94, 98, 99, 103, 106, 107, 110, 117, 118, 119, 121, 122, 125, 126, 127, 128, 129, 130, 131, 133, 134, 136, 138, 158, 163: on siliceous rock.

- Xanthoparmelia tinctina* (Maheu & A. Gillet) Hale – Loc. 3, 6, 18, 25, 26, 30, 103, 104, 122, 127, 138: on siliceous rock.
- Xanthoparmelia verruculifera* (Nyl.) O. Blanco et al. – Loc. 4, 5, 6, 8, 9, 13, 15, 16, 20, 22, 26, 61, 62, 79, 94, 99, 100, 107, 108, 110, 113, 121, 125, 126, 128, 129, 131, 134: on siliceous rock.
- Xanthoria aphrodites* Kalb, Poelt & S.Y. Kondr. – Loc. 133: on calcareous rock.
- Xanthoria aureola* (Ach.) Erichsen – Loc. 7, 13, 94, 110, 121, 123, 130: on siliceous rock and mosses.
- Xanthoria elegans* (Link) Th. Fr. – Loc. 2, 6, 9, 22, 60, 78, 81, 94, 97, 99, 102, 103, 104, 109, 110, 114, 115, 119, 122, 124, 127, 128, 130, 134, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149, 150, 152, 154, 155, 156, 157, 161, 162, 163, 164, 165, 166, 167, 169, 170, 172, 173, 174: on calcareous rock; 3, 4, 5, 8, 14, 15, 16, 18, 19, 20, 21, 23, 24, 25, 26, 30, 47, 59, 76, 79, 80, 82, 83, 84, 98, 100, 106, 107, 108, 111, 113, 117, 118, 125, 126, 129, 131, 132, 133: on siliceous rock; 13: on mosses; 48, 67, 90: on *Populus* sp.; 61: on *Cotoneaster integerrimus*; 62: on *Berberis* sp., *Crataegus* sp. and *Juniperus communis*.
- Xanthoria parietina* (L.) Th. Fr. – Loc. 38, 40, 41, 42, 43, 48, 50, 53, 71, 87, 105, 122, 148, 149, 152, 153, 161, 166, 168, 171, 172, 173, 174: on *Populus* sp.

## Discussion

Saxicolous lichens appear to predominate in the dry mountain climate of Iğdir. As to substrate preference, 95 lichen taxa are epiphytic, 10 of which grow equally on mosses; 202 taxa are saxicolous, of which 180 taxa are exclusively saxicolous; 19 taxa are terricolous; 68 taxa are exclusively epiphytic. Of the epiphytic species, 30 taxa were found on deciduous trees and 25 on coniferous trees (Table 2).

Four species were reported only once before from Turkey: *Acarospora oligospora*, *Agonimia allobata*, *Agonimia tristicula* and *Xanthoria aphrodites*.

The following taxa are rarely reported in Turkey so far and possibly of limited distribution in the country: *Acarospora oligospora*, *Agonimia allobata*, *Agonimia tristicula*, *Anaptychia kaspica*, *Bilimbia lobulata*, *Bilimbia sabuletorum*, *Buellia sequax*, *Caloplaca inconnexa*, *Caloplaca lecideina*, *Dermatocarpon vellereum*, *Fuscopannaria mediterranea*, *Lecanora ochroidea*, *Lecidella patavina*, *Lichinella stipatula*, *Peltigera ponojensis*, *Peltigera scabrosa*, *Pertusaria lactescens*, *Pleopsidium flavum*, *Psora vallesiaca*, *Rhizoplaca subdiscrepans*, *Umbilicaria aprina*, *Xanthoparmelia pokornyi*, *Xanthoparmelia convoluta*, *Xanthoria aphrodites* and *Xanthoria fulva*.

The following crustose, foliose and fruticose (rarely) lichen taxa appeared widespread on siliceous and calcareous rocks on the mountains in mostly the south of Iğdir region.

*Acarospora cervina*, *Acarospora fuscata*, *Acarospora veronensis*, *Aspicilia cinerea*, *A. caesiocinerea*, *Aspicilia desertorum*, *Candelariella vitellina*, *Dimelaena oreina*, *Immersaria athrocarpa*, *Lecanora argopholis*, *Lecanora rupicola*, *Lecidella carpathica*, *Physcia caesia*, *Proparmeliopsis muralis*, *Ramalina polymorpha*, *Rhizocarpon disporum*, *Rhizocarpon geographicum*, *Rhizoplaca chrysoleuca*, *Rhizoplaca melanophthalma*, *Rhizoplaca peltata*, *Rinodina milvina*, *Verrucaria fuscella*, *Xanthoparmelia stenophylla*, *Xanthoparmelia verruculifera* and *Xanthoria elegans*.

Crustose lichen taxa were widely determined to grow directly on siliceous and calcareous rocks in the south areas of Iğdır plateau while lichens such as *Cetraria*, *Cladonia*, *Leptogium* and *Peltigera* grow on mosses in the same areas. On the other hand *Endocarpon*, *Toninia*, *Xanthoparmelia* and some other members of *Cladonia* predominantly grow on poor soil. Some epiphytic species such as *Peltigera*, *Physconia* (especially *Physconia muscigena*, *Physcia*, *Caloplaca*, *Cladonia* (occasionally) were occasionally observed on mosses in mountainous districts in the southern areas of Iğdır region (e.g. between Uğurca-Yukarı Civanlı villages, Yukarı and Aşağı Civanlı village, Tekaltı Mountain, Zor Mountain and Valley, Ağrı Mountain, and other valleys etc.).

Nearly no lichen species have been observed in the large area of northern and south-eastern Iğdır, and also in the north and east of Tuzluca and the surroundings of Karakoyunlu and Aralık with grassy plains and without trees. For example some *Caloplaca*, *Physcia* taxa were poorly observed only on *Salix*, *Elaeagnus* and *Populus* in Tuzluca: Köprübaşı, Sürmeli, Aralık: Saraçlı, Aşağı Çamurlu, Hasanhan, Babacan, Aşağı topraklı, Karakoyunlu: Gökçeli, Cennetabat, Bayatdoğanşalı villages.

#### Acknowledgments

We are grateful to Dr. Paolo Giordani, Dr. Tiiu Torra and Dr. Dalip K. Upreti for linguistic revision and helpful comments on an earlier draft of this manuscript. We also thank to Dr. Harrie Sipman and Dr. Christian Printzen for their critical comments. This study is supported by TÜBİTAK (project 108T566).

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Table 1. Collecting localities

NO	STATION	COORDINATE	ALTITUDE (m)	DATE
1	<b>Iğdır:</b> Korhan plateau, roadside (hillside of Ağrı Mountain)	39°47'52.74"N 44°10'30.56"E	1690	28.03.2010
2	<b>Iğdır:</b> Korhan plateau, roadside (hillside of Ağrı Mountain)	39°47'46.07"N 44°14'10.72"E	2072	28.03.2010
3	<b>Iğdır:</b> between Iğdır-Doğubeyazıt, mainroad side	39°49'44.38"N 44°05'55.99"E	870	28.03.2010
4	<b>Iğdır:</b> bewtween Iğdır-Doğubeyazıt, mainroad side (22-23 km to Iğdır)	39°47'48 86"N 44°09'13.84"E	1528	28.03.2010
5	<b>Iğdır:</b> between Iğdır-Doğubeyazıt, mainroad side (Iğdır 12 km to Iğdır)	39°50'43.69"N 44°04'43.70"E	914	28.03.2010
6	<b>Iğdır:</b> Center: 10 km to Iğdır (from West), from Yukarı Çarıklı village turning 16 km inwards, roadside, Hoşhaber village	39°51'56.08"N 43°56'52.60"E	1181	29.03.2010
7	<b>Iğdır:</b> Center, between Alibeyköy - Aliküçük village	39°48'50.92"N 43°55'57.88"E	1765 - 1850	29.03.2010
8	<b>Iğdır:</b> center, from East 10 km to Iğdır Batıdan Yukarı Çıkrıklı village turning 9 km inwards, roadside	39°53'14.88"N 43°56'55.48"E	1113	29.03.2010
9	<b>Iğdır:</b> center, south of Halfeli	39°52'32.84"N 43°57'28.53"E	1028	29.03.2010
10	<b>Iğdır:</b> Obaköy	39°57'15.48"N 43°59'50.40"E	867	31.03.2010
11	<b>Iğdır:</b> Kasımcan	39°57'59.92"N 43°59'23.07"E	868	31.03.2010
12	<b>Iğdır:</b> Küllük	39°59'06.67"N 43°55'07.42"E	886	31.03.2010
13	<b>Iğdır:</b> Zor Mountain	39°45'49.05"N 43°53'20.13"E	2400	13.06.2010
14	<b>Iğdır:</b> Asma village	39°47'49.70"N 43°48'35.53"E	1868	13.07.2010
15	<b>Iğdır:</b> Taşlıca village	39°50'00.37"N 43°47'48.56"E	1704	13.07.2010
16	<b>Iğdır:</b> Pınarbaşı village	39°49'08.37"N 43°47'08.97"E	1843	13.07.2010
NO	STATION	COORDINATE	ALTITUDE (m)	DATE
17	<b>Iğdır:</b> Nişankaya village	39°48'33.33"N 43°51'39.60"E	2008	13.07.2010

18	<b>İğdir:</b> 3 km to Güngörmez village, roadside	39°48'45.97"N 43°45'47.30"E	2011	13.07.2010
19	<b>İğdir:</b> Harmandöğen village	39°48'23.39"N 43°50'05.03"E	1857	13.07.2010
20	<b>İğdir:</b> Örüsmüş village	39°47'36.03"N 43°58'16.84"E	1945	16.07.2010
21	<b>İğdir:</b> Gülpınar village	39°47'17.30"N 44°00'41.35"E	1609	16.07.2010
22	<b>İğdir:</b> Bendemurat village	39°47'16.06"N 43°57'30.14"E	2121	16.07.2010
23	<b>İğdir:</b> Karaçomak village	39°46'29.30"N 43°55'45.39"E	2110	16.07.2010
24	<b>İğdir:</b> Suveren village	39°48'12.38"N 44°03'48.02"E	1210	08.07.2011
25	<b>İğdir:</b> from North 4 km to Çilli Gate	39°44'52.52"N 44°01'25.51"E	1954	08.07.2011
26	<b>İğdir:</b> Kavaktepe village	39°45'09.36"N 44°08'29.88"E	1628	08.07.2011
27	<b>İğdir:</b> Aşağı Erhacı village	39°52'59.71"N 44°05'19.91"E	853	09.07.2011
28	<b>İğdir:</b> Yukarı Erhacı village	39°52'15.49"N 44°04'31.04"E	853	09.07.2011
29	<b>İğdir:</b> Karakuyu village	39°51'53.90"N 44°02'03.15"E	859	09.07.2011
30	<b>İğdir:</b> Mezrea village	39°48'29.81"N 43°53'52.64"E	1983	09.07.2011
31	<b>İğdir:</b> Yüzbaşılar	40°00'15.93"N 44°03'35.20"E	861	19.07.2011
32	<b>İğdir:</b> Kazancı village	40°00'14.36"N 44°01'35.52"E	863	19.07.2011
33	<b>İğdir:</b> Sarıçoban village	40°01'00.55"N 44°01'17.12"E	867	19.07.2011
34	<b>İğdir:</b> Akyumak village	39°58'01.38"N 44°03'21.00"E	859	19.07.2011
35	<b>İğdir:</b> Evcı village	39°59'38.10"N 44°04'52.63"E	858	19.07.2011
36	<b>İğdir:</b> Tacirli village	39°59'20.30"N 40°06'27.22"E	855	20.07.2011
37	<b>İğdir:</b> Çakırtaş village	40°01'01.55"N 44°04'51.61"E	857	20.07.2011
38	<b>İğdir:</b> Necefalı village	40°01'28.89"N 44°04'55.97"E	856	20.07.2011
39	<b>İğdir:</b> Hakseyis village	39°56'24.66"N 44°01'18.43"E	864	27.07.2011
40	<b>İğdir:</b> Enginalan village	39°57'51.52"N 44°01'51.32"E	865	27.07.2011
41	<b>İğdir:</b> Hakmehmet village	40°00'11.85"N 43°58'44.57"E	873	27.07.2011
42	<b>İğdir:</b> Kuzugüden village	39°59'14.25"N 43°58'19.57"E	875	27.07.2011

43	<b>İğdır:</b> Yukarı Çarıkçı village	39°57'44.65"N 43°56'15.39"E	876	28.07.2011
44	<b>İğdır:</b> Aşağı Çarıkçı village	39°56'26.33"N 43°56'42.79"E	881	28.07.2011
45	<b>İğdır:</b> Yaycı village	39°56'54.35"N 43°58'06.54"E	868	28.07.2011
46	<b>İğdır:</b> Çalpala village	40°01'26.77"N 43°52'32.43"E	900	28.07.2011
47	<b>İğdır:</b> Bayraktutan village	40°00'27.66"N 43°55'06.91"E	890	28.07.2011
48	<b>Aralık:</b> Aralık: between Karakoyunlu - Melekli, 200-250 inwards from mainroad	39°57'30.50"N 44°08'58.02"E	860	30.03.2010
49	<b>Aralık:</b> Hasanhan village	39°57'26.83"N 44°20'41.93"E	825	30.03.2010
50	<b>Aralık:</b> Babacan village	39°58'51.89"N 44°18'05.06"E	831	30.03.2010
51	<b>Aralık:</b> Aşağı topraklı village	39°54'41.10"N 44°27'02.77"E	819	01.04.2010
52	<b>Aralık:</b> Aşağı Çamurlu village	39°55'19.62"N 44°25'43.81"E	819	01.04.2010
53	<b>Aralık:</b> Saraçlı village	39°54' 40.41"N 44°28' 17.85"E	818	01.04.2010
54	<b>Aralık:</b> Hıdırlı village	39°54'23.02"N 44°19'15.85"E	834	14.06.2011
55	<b>Aralık:</b> Kırçıçeği village	39°55'37.43"N 44°18'53.66"E	828	14.06.2011
56	<b>Aralık:</b> Yukarı Topraklı village	39°54'23.85"N 44°26'11.58"E	823	14.06.2011
57	<b>Aralık:</b> Kulukent village	39°54'15.79"N 44°21'03.66"E	825	14.06.2011
58	<b>Aralık:</b> Karahacılı village	39°54'36.18"N 44°22'51.29"E	827	14.06.2011
59	<b>Aralık:</b> Tarlabası village	39°47'4.22"N 44°24'17.25"E	1421	14.06.2011
60	<b>Aralık:</b> Yenidoğan village	39°46'33.27"N 44°22'37.44"E	1715	14.06.2011
61	<b>Aralık:</b> Bilican village	39°41'12.81"N 44°24'16.11"E	2320	14.06.2011
62	<b>Aralık:</b> Gömük village	39°42'17.36"N 44°24'13.63"E	2198	14.06.2011
63	<b>Aralık:</b> Yukarı Çamurlu village	39°57'12.02"N 44°23'19.24"E	824	15.06.2011
64	<b>Aralık:</b> Tazeköy	39°55'03.80"N 44°30'49.00"E	821	15.06.2011
65	<b>Aralık:</b> Hacıağa village	39°56'11.52"N 44°29'21.01"E	824	15.06.2011
66	<b>Aralık:</b> Yukarı çiftlik	39°51'51.79"N	817	15.06.2011

	village	44°33'55.04"E		
67	<b>Aralık:</b> Aşağı çiftlik village	39°51'06.64"N 44°35'18.76"E	816	15.06.2011
68	<b>Aralık:</b> Yukarı aratan village	39°50'21.09"N 44°32'46.18"E	813	15.06.2011
69	<b>Aralık:</b> Aşağı aratan village	39°49'48.35"N 44°33'14.66"E	812	15.06.2011
70	<b>Aralık:</b> Ortaköy village	39°50'45.65"N 44°32'06.39"E	814	15.06.2011
71	<b>Aralık:</b> Gödekli village	39°49'10.02"N 44°35'42.66"E	812	15.06.2011
72	<b>Aralık:</b> Emince village	39°49'07.96"N 44°34'27.28"E	810	15.06.2011
73	<b>Karakoyunlu:</b> Gökçeli village	39°59'51.91"N 44°10'51.69"E	842	30.03.2010
74	<b>Karakoyunlu:</b> Cennetabat village	39°59' 55.92"N 44°16' 26.53"E	835	30.03.2010
75	<b>Karakoyunlu:</b> Taşburun, center	39°58'51.82"N 44°14'48.82"E	838	30.03.2010
76	<b>Karakoyunlu:</b> Karakoyunlu: Taşburun, 300 m inwards from mainroad	39°58'01.68"N 44°14'08.40"E	860	30.03.2010
77	<b>Karakoyunlu:</b> Bayatdoğanşalı village	39°59'46.52"N 44°11'33.53"E	843	30.03.2010
78	<b>Karakoyunlu:</b> Korhan plateau (hillside of Ağrı Mountain)	39°52'00.65"N 44°12'06.62"E	2005	17.06.2010
79	<b>Karakoyunlu:</b> Karakoyunlu: Korhan plateau (environs of gendarmerie headquarters)	39°47'11.09"N 44°16'06.73"E	1904	17.06.2010
80	<b>Karakoyunlu:</b> Bulakbaşı village	39°56'13.89"N 44°15'30.49"E	832	14.06.2011
81	<b>Karakoyunlu:</b> Yazlık village	39°54'38.48"N 44°16'53.91"E	830	14.06.2011
82	<b>Karakoyunlu:</b> Aktaş village	39°55'09.12"N 44°16'04.34"E	828	14.06.2011
83	<b>Karakoyunlu:</b> İslamköy	39°54'34.12"N 44°18'01.55"E	824	14.06.2011
84	<b>Karakoyunlu:</b> Adetli village	39°53'49.65"N 44°20'41.78"E	825	14.06.2011
85	<b>Karakoyunlu:</b> Zülfikar village	39°59'39.31"N 44°08'41.10"E	850	06.07.2011
86	<b>Karakoyunlu:</b> Şıracı	40°00'07.24"N 44°10'39.50"E	846	06.07.2011

87	<b>Karakoyunlu:</b> Mürşitali village	40°01'25.68"N 44°08'17.85"E	849	06.07.2011
88	<b>Karakoyunlu:</b> Ortaalican village	40°01'48.87"N 44°12'47.70"E	841	06.07.2011
89	<b>Karakoyunlu:</b> Aşağıalican village	40°00'17.23"N 44°13'04.29"E	842	06.07.2011
90	<b>Karakoyunlu:</b> Yukarı aliacan village	40°00'57.36"N 44°09'46.29"E	847	06.07.2011
91	<b>Karakoyunlu:</b> Koçardoğanşalı village	40°00'10.90"N 44°13'08.52"E	842	06.07.2011
92	<b>Karakoyunlu:</b> Bekirhanlı village	40°01'35.44"N 44°17'31.52"E	837	06.07.2011
93	<b>Karakoyunlu:</b> Koçkıran village	40°02'07.95"N 44°17'35.55"E	837	06.07.2011
94	<b>Karakoyunlu:</b> Ağrı Mountain	39°45'18.86"N 44°16'12.52"E	3191	29.07.2011
95	<b>Tuzluca:</b> Centre, mainroad side	40°03'09.53"N 43°39'16.15"E	1074	31.03.2010
96	<b>Tuzluca:</b> Köprübaşı village	40°03'02.63"N 43°43'33.74"E	1030	31.03.2010
97	<b>Tuzluca:</b> Sürmeli village	40°03'59.48"N 43°47'11.38"E	944	31.03.2010
98	<b>Tuzluca:</b> between Tuzluca – Iğdır, 6 km to Tuzluca, mainroad side	40°02'42.25"N 43°41'41.00"E	1060	31.03.2010
99	<b>Tuzluca:</b> Tuzluca: border of Tuzluca – Kağızman, Aşağı Aktaş village turning, mainroad side	40°06'27.27"N 43°30'16.05"E	1055	31.03.2010
100	<b>Tuzluca:</b> 15 km to border of Tuzluca – Kağızman, mainroad side	40°06'40.16"N 43°34'17.01"E	1010	31.03.2010
101	<b>Tuzluca:</b> Karacaören village	39°53'09.75"N 43°30'37.56"E	2013	14.06.2010
102	<b>Tuzluca:</b> Kayaören village	39°52'13.85"N 43°30'51.32"E	2048	14.06.2010
103	<b>Tuzluca:</b> Nahırkıran village	39°53'21.19"N 43°29'10.37"E	2273	14.06.2010
104	<b>Tuzluca:</b> Hamurkesen village	39°54'48.98"N 43°36'14.04"E	1830	14.06.2010
105	<b>Tuzluca:</b> Üçkaya village	39°58'13.11"N 43°39'44.08"E	1456	14.06.2010
106	<b>Tuzluca:</b> Ünlendi village	39°53'49.48"N 43°33'38.86"E	1949	14.06.2010
107	<b>Tuzluca:</b> Taşköprü-Karacaören köyü arası	39°52'07.40"N 43°28'50.94"E	2134	14.06.2010
108	<b>Tuzluca:</b> Taşköprü: 3 km to Kandilli village, roadside	39°51'25.16"N 43°27'33.13"E	2240	14.06.2010
109	<b>Tuzluca:</b> Kamışlı village	40°00'13.90"N	1298	14.06.2010

		43°42'03.78"E		
110	<b>Tuzluca:</b> Güllüce village	39°53'29.26"N 43°39'33.47"E	1769	15.06.2010
111	<b>Tuzluca:</b> Gedikli village	39°51'39.28"N 43°40'54.57"E	1897	15.06.2010
112	<b>Tuzluca:</b> Arslanlı village	39°48'58.26"N 43°40'55.73"E	2136	15.06.2010
113	<b>Tuzluca:</b> Abbasgöl village	39°49'37.04"N 43°36'28.57"E	2080	15.06.2010
114	<b>Tuzluca:</b> Uğurca village	39°59'55.46"N 43°28'04.08"E	1955	16.06.2010
115	<b>Tuzluca:</b> Güzeldere Köyü	39°59'25.74"N 43°30'35.32"E	1693	16.06.2010
116	<b>Tuzluca:</b> Akdeğirmen village	39°58'43.82"N 43°29'58.47"E	1767	16.06.2010
117	<b>Tuzluca:</b> 2 km to Canderviş village, roadside	39°56'23.67"N 43°30'09.63"E	2189	16.06.2010
118	<b>Tuzluca:</b> between Uğurca-Yukarı Civanlı villages	40°00'03.72"N 43°26'25.80"E	2056	16.06.2010
119	<b>Tuzluca:</b> between Yukarı Civanlı- Aşağı Civanlı villages	40°00'31.57"N 43°32'526.37"E	1882	16.06.2010
120	<b>Tuzluca:</b> North of Kalaca village	39°57'12.67"N 43°29'50.77"E	2003	16.06.2010
121	<b>Tuzluca:</b> Göktaş village, road side	39°59'52.55"N 43°33'55.78"E	1489	16.06.2010
122	<b>Tuzluca:</b> Karataş village	39°59'42.14"N 43°30'15.96"E	1733	16.06.2010
123	<b>Tuzluca:</b> Taşucan village	39°51'26.61"N 43°35'41.06"E	3168	02.07.2010
124	<b>Tuzluca:</b> Karakoyun village	39°52'10.06"N 43°37'44.79"E	1926	02.07.2010
125	<b>Tuzluca:</b> between Ağaçlı-Bağlan villages, roadside	39°54'51.67"N 43°39'07.05"E	1727	02.07.2010
126	<b>Tuzluca:</b> İnceköy	39°53'17.06"N 43°38'09.44"E	1777	02.07.2010
127	<b>Tuzluca:</b> Aliköse village	39°52'59.25"N 43°36'52.31"E	1883	02.07.2010
128	<b>Tuzluca:</b> Gaziler	40°05'02.40"N 43°26'55.40"E	1116	03.07.2010
129	<b>Tuzluca:</b> 1 km to Çıraklı village, roadside	40°04'16.92"N 43°29'29.13"E 40°03'53.89"N 43°29'32.98"E	1428 1571	03.07.2010
130	<b>Tuzluca:</b> Tekaltı Mountain	40°01'57.22"N 43°33'12.89"E	2257	04.07.2010
131	<b>Tuzluca:</b> Tuzluca: Aşağı Aktaş village (monument tomb and roadside)	40°04'45.42"N 43°31'34.61"E	1538	05.07.2010
132	<b>Tuzluca:</b> Kula village,	40°51'4.25"N	1175	12.07.2010

	roadside	43°25'53.48"E		
133	<b>Tuzluca:</b> Bahçelimeydan village	40°03'50.07"N 43°27'01.70"E	1328	12.07.2010
134	<b>Tuzluca:</b> Bahçecik village, roadside	40°04'05.63"N 43°25'35.47"E 40°04'27.27"N 43°25'06.12"E	1693m, 1754	12.07.2010
135	<b>Tuzluca:</b> Oyuklu Mountain	39°55'42.76"N 43°45'10.89"E	1530	16.06.2011
136	<b>Tuzluca:</b> Osmanköy	40°01'59.12"N 43°25'45.90"E	1898	24.06.2011
NO	STATION	COORDINATE	ALTITUDE (m)	DATE
137	<b>Tuzluca:</b> Karturan village	40°04'26.70"N 43°23'34.81"E	1702	24.06.2011
138	<b>Tuzluca:</b> Ziyaret Mountain	40°02'51.06"N 43°24'33.22"E	2101	24.06.2011
139	<b>Tuzluca:</b> Kaşukhan Mountain	40°03'51.71"N 43°22'50.41"E	2063	24.06.2011
140	<b>Tuzluca:</b> Aşağı Katırlı village	39°52'31.17"N 43°42'09.33"E	1801	25.06.2011
141	<b>Tuzluca:</b> Yağlı village	39°50'10.41"N 43°44'31.78"E	2147	25.06.2011
142	<b>Tuzluca:</b> Yassıbulak village	39°49'57.64"N 43°42'01.90"E	2201	25.06.2011
143	<b>Tuzluca:</b> Bican Hill	39°47'51.94"N 43°40'49.56"E	2298	25.06.2011
144	<b>Tuzluca:</b> Ağabey village	40°06'39.85"N 43°31'06.07"E	1027	25.06.2011
145	<b>Tuzluca:</b> Alhanlı village	40°03'22.32"N 43°32'16.56"E	1642	26.06.2011
146	<b>Tuzluca:</b> Kılıçlı village	40°03'49.82"N 43°32'18.95"E	1707	26.06.2011
147	<b>Tuzluca:</b> Söğütlü village	39°56'06.00"N 43°42'57.08"E	1539	26.06.2011
148	<b>Tuzluca:</b> Küçükova village	39°57'03.52"N 43°41'25.44"E	1533	26.06.2011
149	<b>Tuzluca:</b> Karabulak village	39°58'53.96"N 43°43'19.43"E	1349	26.06.2011
150	<b>Tuzluca:</b> Doğanyurt village	39°54'09.75"N 43°45'45.56"E	1430	26.06.2011
151	<b>Tuzluca:</b> Turabi village	40°04'29.60"N 43°45'24.47"E	967	05.07.2011
152	<b>Tuzluca:</b> Pirdemir village	40°01'05.90"N 43°34'54.35"E	1776	05.07.2011
153	<b>Tuzluca:</b> Akoluk village	40°01'34.10"N 43°33'10.38"E	2206	05.07.2011
154	<b>Tuzluca:</b> Beyoğlu village	40°01'15.62"N	2296	05.07.2011



		43°29'15.34"E		
155	<b>Tuzluca:</b> Kozkoparan	40°01'03.96"N 43°26'17.50"E	1826	07.07.2011
156	<b>Tuzluca:</b> Yukarı aktaş village	40°02'04.85"N 43°27'30.33"E	1917	07.07.2011
157	<b>Tuzluca:</b> Badıllı village	40°00'25.17"N 43°24'17.88"E	2002	07.07.2011
158	<b>Tuzluca:</b> Laleli village	39°55'27.74"N 43°28'58.18"E	2267	07.07.2011
159	<b>Tuzluca:</b> Tezekçi village	40°07'08.18"N 43°24'14.92"E	1074	21.07.2011
160	<b>Tuzluca:</b> İncesu village	40°06'54.63"N 43°24'21.67"E	1093	21.07.2011
161	<b>Tuzluca:</b> Aşağısutaşlı village	39°55'39.66"N 43°36'57.95"E	1755	22.07.2011
162	<b>Tuzluca:</b> Kayakışlak village	39°55'44.74"N 43°38'30.33"E	1673	22.07.2011
163	<b>Tuzluca:</b> Ortabucak village	39°54'22.07"N 43°37'13.92"E	1784	22.07.2011
164	<b>Tuzluca:</b> Hadımlı village	39°57'43.06"N 43°37'00.27"E	1743	22.07.2011
165	<b>Tuzluca:</b> Çiçekli village	39°57'14.41"N 43°34'35.78"E	1871	22.07.2011
166	<b>Tuzluca:</b> Sarıabdal village	39°57'56.10"N 43°35'32.89"E	1647	22.07.2011
167	<b>Tuzluca:</b> Soğukbulak village	39°55'30.31"N 43°32'33.72"E	2193	22.07.2011
168	<b>Tuzluca:</b> Bağlan village	39°55'03.07"N 43°39'01.45"E	1684	22.07.2011
169	<b>Tuzluca:</b> Tutak village	39°49'57.06"N 43°27'51.27"E	2218	26.07.2011
170	<b>Tuzluca:</b> Hasankent village	39°57'01.49"N 43°33'06.15"E	1830	26.07.2011
171	<b>Tuzluca:</b> Kumbulak village	39°57'40.83"N 43°32'12.07"E	2138	26.07.2011
172	<b>Tuzluca:</b> Akdiz village	39°56'56.95"N 43°32'04.85"E	1983	26.07.2011
173	<b>Tuzluca:</b> Kırkbulak village	39°57'38.76"N 43°30'00.84"E	1930	26.07.2011
174	<b>Tuzluca:</b> Elmalık village	39°59'04.73" N 43°33'53.33"E	1834	26.07.2011

Table 2. The numbers of taxa based on the growth form and substrate in Iğdır

The growth forms and substrata	Crustose	Foliose	Fruticose	Leprose	Total
Lichens total	184	91	12	5	292
Epiphytic	28	56	5	5	94
Epiphytic only	20	43	-	5	68
Terricolous	7	6	6	-	19
Terricolous only	7	4	3	-	14
Saxicolous	150	48	4	-	202
Saxicolous only	143	33	4	-	180
Muscicolous	16	39	5	4	64
Muscicolous only	10	23	2	4	39
Deciduous	12	17	-	-	29
Deciduous only	7	6	-	-	13
Coniferous	8	15	-	1	24
Coniferous only	2	2	-	1	5
<i>Aspicilia cinerea</i>	1	-	-	-	1
<i>Aspicilia desertorum</i>	1	-	-	-	1
<i>Berberis</i>	3	2	-	-	5
<i>Candelariella vitellina</i>	1	-	-	-	1
<i>Cotoneaster integerrimus</i>	4	6	-	-	10
<i>Crataegus</i>	3	5	-	-	8
<i>Elaeagnus</i>	6	8	-	-	11
<i>Juniperus communis</i>	7	17	-	1	25
<i>Lecanora rupicola</i>	1	-	-	-	1
<i>Lecanora</i> sp.	1	-	-	-	1
<i>Populus</i>	4	13	-	-	17
<i>Salix</i>	2	3	-	-	5
<i>Toninia diffracta</i>	-	1	-	-	1
<i>Xanthoparmelia tinctina</i>	1	-	-	-	1
<i>Xanthoparmelia pulla</i>	1	-	-	-	1