

Lichens of Ordu Province, Turkey

KADIR KINALIOĞLU

kkinalioglu@hotmail.com

*Giresun University, Faculty of Science and Arts, Department of Biology
Giresun, Turkey*

Abstract – 314 taxa belonging to 99 genera are reported from Ordu province in the Central Black Sea region of Turkey. 263 taxa are reported for the first time from the province, and 3 species, *Arthopyrenia persoonii*, *Sphinctrina leucopoda* and *Verrucaria submersella*, are new records for Turkey.

Key words – Aydoğan hill, biota, biodiversity

Introduction

In the last two decades lichenological studies in Turkey have increased remarkably (e.g., Candan & Özdemir Türk 2008, Halıcı & Aksoy 2009, John & Nimis 1998, Kınalıoğlu 2009, Özdemir Türk 2003, Öztürk et al. 2005, Yazıcı & Aptroot 2008). However, the lichen composition of some provinces is still insufficiently known. One of these provinces is Ordu, situated in the central part of the Black Sea region of Turkey (Fig. 1). There have been four studies referring to lichens in Ordu province (Steiner 1909, Kınalıoğlu et al. 1998, John et al. 2000, Aslan et al. 2006). In these studies, a total of only 94 lichen taxa are only given from the province and its lichen biota should be considered as very poorly known. The present study adds further informations to our knowledge of the lichen biota of Turkey and in particular of Ordu. Data are here compiled from the province, based on collections from 63 sites visited between 20 March 2004 and 2 November 2008 (Table 1). Turkey has three main floristic regions: the Euro-Siberian floristic region, the Mediterranean floristic region and the Irano-Turanian floristic region. Ordu is located within the boundaries of the Euxianian section of the Euro-Siberian floristic region. It is situated at 40°18'–41°08' N, 36°52'–38°12' E at altitudes ranging from sea level to 3038 m. The province has a surface of 6001 km², generally of rough topography. The most important peaks of Ordu are Kırgızlar peak (3038 m), Aşit peak (2569 m), Eriço peak (2298 m), Deveci Mountain (1907 m) and Aydoğan peak (1971 m). There are also some plateaux at high altitudes, mainly Çambaşı, Perşembe, Keyfalan, Topçam, Argan and Aydoğan. Upper Cretaceous volcanic facies (agglomerata, dacite, diorite, granodiorit) are mostly present. There are various big streams in the province such as Melet stream, Bülbül stream and Civil stream. Small plains, which cover relatively minor areas, exist near the coastal area and stream

mouths. The wide altitudinal variation, rough topography, influence of the adjacent sea, and big streams of the Ordu provide a wide range of climatic zones. However, oceanic climate prevails in Ordu. The mean rainfall per year is 1029.2 mm, the highest precipitations occur in October and December and the lowest in May and July. On average there are 178 rainy days and 6 snowy days on a yearly basis. The mean annual maximum temperature is 27.5°C in August, while the mean minimum temperature is 3.9°C in February. The mean annual relative humidity is 76%. Vegetation cover varies with climate and altitude. Up to 1500 m, have deciduous trees of *Alnus* spp., *Carpinus* spp., *Castanea sativa*, *Fagus orientalis*, *Quercus* spp. and shrubs such as *Corylus* spp. and *Rhododendron* spp. prevail. *Corylus* spp. are important crop plants as well. At 1500-1900 m the forest consists of *Picea orientalis* together with *Pinus sylvestris* (Atalay 1994). These forests provide suitable habitats for a rich lichen flora. Above 1900 m alpine meadows are dominant.

Materials and methods

The collections were identified with standart identification methods of various lichen guides (Brodo et al. 2001, Goward 1999, Purvis et al. 1992, Wasser 2005, Wirth 1995). Air dried samples were examined using a stereo microscope and a light microscope. All samples are stored in the herbarium of the Faculty of Science and Arts, Giresun University, Giresun, Turkey. Lichen species new to Turkey are indicated by #, those new to Ordu province by *. The collecting localities are given in Table 1.

List of taxa

- **Acarospora fuscata* (Nyl.) Arnold, Loc. 4, 10, 11, 19, 20, 22, 24, 33, 44, 52, 53, 55: on siliceous rock.
- **A. macrospora* (Hepp) A. Massal. ex Bagl., Loc. 55: on calcareous rock.
- **A. sinopica* (Wahlenb.) Körb., Loc. 12, 19, 33, 38, 48, 55: on siliceous rock.
- **Acrocordia gemmata* (Ach.) A. Massal., Loc. 62: on *Corylus* sp. and on *Juglans regia*.
- **Amandinea punctata* (Hoffm.) Coppins & Scheid., Loc. 12, 18, 29, 38, 52, 59: on *Carpinus* sp., garden fence, *Rhododendron* sp., siliceous rock.
- **Anaptychia ciliaris* (L.) Körb. ex A. Massal., Loc. 26, 53, 55, 59: on *Carpinus* sp., *Picea* sp., *Salix* sp., siliceous rock.
- **A. setifera* (Mereschk.) Räsänen, Loc. 24, 29, 59, 60: on *Fraxinus* sp., garden fence, *Salix* sp., *Pyrus* sp., siliceous rock.
- **Arthonia cinnabarina* (DC.) Wallr., Loc. 7: on *Corylus* sp.
- **A. didyma* Körb., Loc. 59: on *Picea* sp. (det. H. Sipman).
- **A. leucopellaea* (Ach.) Almq., Loc. 35, 51: on *Corylus* sp., *Picea* sp.
- **A. radiata* (Pers.) Ach., Loc. 3, 5, 11, 42, 43: on *Corylus* sp., *Populus* sp., *Quercus* sp.

- **A. varians* (Davies) Nyl., Loc. 24: on *Lecanora rupicola*.
- #*Arthopyrenia persoonii* A. Massal., Loc. 61: on *Juglans regia* (det. H. Sipman).
- **A. viridescens* Coppins, Loc. 3, 18: on *Populus* sp., *Rhododendron* sp.
- **Aspicilia caesiocinerea* (Nyl. ex Malbr.) Arnold, Loc. 3, 10, 11, 26, 34, 38, 40, 44, 55: on siliceous rock.
- A. cinerea* (L.) Körb., Loc. 10, 13, 18, 19, 22, 32, 38, 40, 57: siliceous rock.
- **A. contorta* (Hoffm.) Kremp., Loc. 13, 19, 20, 22, 38, 40, 47: siliceous rock.
- **A. epiglypta* (Norrl. ex Nyl.) Hue., Loc. 33: on siliceous rock.
- **A. laevata* (Ach.) Arnold, Loc. 53: on siliceous rock.
- **A. intermutans* (Nyl.) Arnold, Loc. 55: on siliceous rock.
- **A. recedens* (Taylor) Arnold, Loc. 53: on siliceous rock.
- **Bacidia arceutina* (Ach.) Arnold, Loc. 8, 20, 29, 58: on calcareous rock, *Corylus* sp., *Juglans regia*, on *Picea* sp.
- **B. laurocerasi* (Delise ex Duby) Zahlbr., Loc. 45, 63: on *Corylus* sp., *Tilia* sp.
- **B. phacodes* Körb., Loc. 7, 35: on *Corylus* sp., *Populus* sp.
- **B. rubella* (Hoffm.) A. Massal., Loc. 58: on *Picea* sp.
- **Baeomyces rufus* (Huds.) Rebt., Loc. 53: on siliceous rock, soil.
- **Bilimbia sabuletorum* (Schreb.) Arnold, Loc. 53: on moss (det. H. Sipman).
- **Buellia aethalea* (Ach.) Th. Fr., Loc. 11, 55: on siliceous rock.
- B. disciformis* (Fr.) Mudd, Loc. 39: on *Carpinus* sp.
- **B. schaereri* De Not., Loc. 16, 51: on *Carpinus* sp., *Pinus* sp.
- **B. subdisciformis* (Leight.) Vain., Loc. 19: on siliceous rock.
- **Bryoria bicolor* (Ehrh.) Brodo & D. Hawksw., Loc. 55, 57: on moss, siliceous rock.
- **B. capillaris* (Ach.) Brodo & D. Hawksw., Loc. 51, 53: on *Picea* sp.
- **B. chalybeiformis* (L.) Brodo & D. Hawksw., Loc. 55, 57: on siliceous rock, soil.
- **B. fuscescens* (Gyeln.) Brodo & D. Hawksw., Loc. 51: on *Picea* sp.
- **B. nadvornikiana* (Gyeln.) Brodo & D. Hawksw., Loc. 58: on *Picea* sp.
- **Calicium viride* Pers., Loc. 53: on *Picea* sp.
- **Caloplaca ammiospila* (Wahlenb.) H. Olivier., Loc. 12, 24, 55: on moss.
- **C. arenaria* (Pers.) Müll. Arg., Loc. 12, 18, 19, 33, 48: on siliceous rock.
- **C. atroflava* (Turner) Mong., Loc. 11, 48: on siliceous rock.
- **C. cerina* (Ehrh. ex Hedw.) Th. Fr., Loc. 9, 10, 23, 25, 28, 29, 31, 32, 52, 53, 54, 55, 57, 59, 60, 61: on *Corylus* sp., *Fraxinus* sp., *Juglans regia*, moss, *Populus* sp., *Pyrus* sp., *Rhododendron* sp., *Salix* sp., siliceous rock.
- **C. cerina* var. *chloroleuca* (Sm.) Th. Fr., Loc. 13: on moss.
- C. cerinella* (Nyl.) Flagey, Loc. 29, 31, 43, 52, 58, 59, 60, 61: on *Corylus* sp., *Fraxinus* sp., *Juglans regia*, *Picea* sp., *Populus* sp., *Pyrus* sp., *Rhododendron* sp., *Salix* sp.

- **C. cerinelloides* (Erichsen) Poelt, Loc. 29, 50, 52, 58, 60: on *Corylus* sp., *Fraxinus* sp., *Picea* sp., *Pyrus* sp., *Rhododendron* sp.
- **C. concilians* (Nyl.) H. Olivier, Loc. 10, 19: on siliceous rock.
- **C. crenularia* (With.) J.R. Laundon, Loc. 4, 11, 18, 19, 33, 34, 38, 44: on siliceous rock.
- **C. flavorubescens* (Huds.) J.R. Laundon, Loc. 15, 28, 31, 59, 60, 61: on *Corylus* sp., *Juglans regia*, *Populus* sp., *Pyrus* sp., *Salix* sp.
- **C. flavovirescens* (Wulfen) Dalla Torre & Sarnth., Loc. 11, 29, 48, 52: on calcareous rock, siliceous rock.
- **C. herbidella* (Hue) H. Magn., Loc. 51, 53: on *Picea* sp.
- **C. holocarpa* (Hoffm.) A.E. Wade, Loc. 13, 15, 19, 21, 29, 34, 38, 44, 48, 56, 58, 60, 61: on *Fraxinus* sp., *Juglans regia*, garden fence, *Picea* sp., *Platanus* sp., *Populus* sp., *Pyrus* sp., siliceous rock.
- **C. irrubescens* (Arnold) Zahlbr., Loc. 11, 48: on siliceous rock.
- **C. lactea* (A. Massal.) Zahlbr., Loc. 17, 25: on mortar.
- **C. microthallina* (Wedd.) Zahlbr., Loc. 19: on siliceous rock.
- **C. pollini* (A. Massal.) Jatta, Loc. 23, 29: on *Corylus* sp., *Fraxinus* sp.
- **C. thallicola* (Wedd.) Du Rietz, Loc. 44: on siliceous rock.
- C. tirolensis* Zahlbr., Loc. 53: on moss (det. H. Sipman).
- **C. velana* (A. Massal.) Du Rietz, Loc. 1, 19: on siliceous rock.
- **Candelaria concolor* (Dicks.) Stein, Loc. 16, 46, 63: on *Carpinus* sp., *Malus* sp.
- **Candelariella aurella* (Hoffm.) Zahlbr., Loc. 4, 14, 17, 21, 29, 47, 55, 58: on *Alnus* sp., *Fraxinus* sp., garden fence, mortar, *Picea* sp., *Salix* sp., siliceous rock.
- **C. coralliza* (Nyl.) H. Magn., Loc. 13, 18, 24, 38, 55, 56: on garden fence, siliceous rock.
- **C. reflexa* (Nyl.) Lettau, Loc. 16, 29, 53: on *Carpinus* sp., *Corylus* sp., *Rhododendron* sp.
- **C. vitellina* (Hoffm.) Müll. Arg., Loc. 1, 4, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 24, 27, 32, 33, 34, 38, 40, 44, 47, 48, 52, 53, 54, 55, 57: on calcareous rock, mortar, siliceous rock, soil.
- **C. xanthostigma* (Pers.) Lettau, Loc. 56, 60: on *Platanus* sp., *Pyrus* sp.
- **Catapyrenium daedaleum* (Kremp.) Stein, Loc. 55: on soil.
- **Catillaria chalybeia* (Borrer) A. Massal., Loc. 19, 34, 48: on siliceous rock.
- Cetrelia cetrarioides* (Delise ex Duby) W.L. Culb. & C.F. Culb., Loc. 30, 51, 53: on *Alnus* sp., *Carpinus* sp., *Picea* sp.
- **Cetraria aculeata* (Schreb.) Fr., Loc. 33, 54, 55, 57: on moss, siliceous rock, soil.
- **C. chlorophylla* (Willd.) Vain., Loc. 51: on *Picea* sp.
- **C. hepatizon* (Ach.) Vain., Loc. 55: on moss.

- C. islandica* (L.) Ach., Loc. 52, 53, 54, 55, 57: on *Rhododendron* sp., moss, on soil.
- **Chaenotheca brunneola* (Ach.) Müll. Arg., Loc. 53: on *Rhododendron* sp.
- **C. furfuracea* (L.) Tibell, Loc. 53: on *Picea* sp.
- **Chrysothrix candelaris* (L.) J.R. Laundon, Loc. 7, 8, 23, 29, 30, 31, 32, 45, 46, 48, 50, 51, 53, 54, 58, 59, 60, 63: on *Alnus* sp., *Carpinus* sp., garden fence, *Corylus* sp., *Fagus* sp., *Juglans regia*, *Picea* sp., *Pinus* sp., *Prunus* sp., *Pyrus* sp., *Rhododendron* sp., *Salix* sp.
- **Cladonia caespiticia* (Pers.) Flörke, Loc. 53: on soil.
- **C. coccifera* (L.) Willd., Loc. 53: on soil.
- **C. coniocraea* (Flörke) Spreng., Loc. 18, 26, 32, 40, 51, 52, 53, 54, 55: on died trees, *Pinus* sp., soil.
- **C. deformis* (L.) Hoffm., Loc. 32, 37: on *Pinus* sp., on soil.
- **C. foliacea* (Huds.) Willd., Loc. 29, 52, 53: on soil.
- C. fimbriata* (L.) Fr., Loc. 1, 16, 20, 26, 27, 32, 37, 40, 47, 51, 53, 54: on *Carpinus* sp., *Picea* sp., *Pinus* sp., soil.
- **C. furcata* (Huds.) Schrad., Loc. 18, 27, 52, 53: on soil.
- **C. furcata subsp. subrangiformis* (L. Scriba ex Sandst.) Pišút, Loc. 54, 55: on soil.
- **C. glauca* Flörke, Loc. 32: on soil.
- **C. macilenta* Hoffm., Loc. 32: on soil.
- **C. phyllophora* Ehrh. ex Hoffm., Loc. 54: on soil.
- **C. pocillum* (Ach.) O.J. Rich., Loc. 32, 53: on soil.
- C. pyxidata* (L.) Hoffm., Loc. 2, 8, 12, 14, 18, 32, 40, 44, 51, 52, 53, 55: on moss, *Pinus* sp., on soil.
- **C. rangiferina* (L.) Weber ex F.H. Wigg., Loc. 52, 53, 57: on soil.
- C. rangiformis* Hoffm., Loc. 2, 27, 47, 54: on soil.
- **C. subulata* (L.) Weber ex F.H. Wigg., Loc. 25, 39, 53: on *Pinus* sp., soil.
- **C. squamosa* (Scop.) Hoffm., Loc. 53: on *Picea* sp.
- C. stellaris* (Opiz) Pouzar & Vězda, Loc. 54, 57: on moss.
- **Collema cristatum* (L.) F.H. Wigg., Loc. 1, 55: on moss, soil.
- **C. flaccidum* (Ach.) Ach., Loc. 11, 40, 44: on *Carpinus* sp., siliceous rock.
- C. subflaccidum* Degel., Loc. 4, 16, 29, 48, 49: on calcareous rock, *Carpinus* sp., *Morus* sp., siliceous rock.
- **C. subnigrescens* Degel., Loc. 19, 44: on siliceous rock.
- **C. tenax* (Sw.) Ach., Loc. 1: on soil.
- **Cornicularia normoerica* (Gunnerus) Du Rietz, Loc. 55, 57: on siliceous rock.
- **Dermatocarpon luridum* (Dill. ex With.) J.R. Laundon, Loc. 53: on siliceous rock.
- **D. miniatum* (L.) Mann, Loc. 18, 53: on siliceous rock.
- **Dimelaena oreina* (Ach.) Norman, Loc. 24, 55, 57: on siliceous rock.

- **Diploschistes muscorum* (Scop.) R. Sant., Loc. 52: on *Cladonia* sp.
D. scruposus (Schreb.) Norm., Loc. 12, 13, 18, 38, 52, 55, 57: on siliceous rock.
**Diplotomma alboatrum* (Hoffm.) Flot., Loc. 49, 58: on *Morus* sp., *Picea* sp.
D. epipolium (Ach.) Arnold, Loc. 47: on siliceous rock.
**Endocarpon adscendens* (Anzi) Müll. Arg., Loc. 53: on moss (det. H. Sipman), 48: siliceous rock.
**E. pusillum* Hedw., Loc. 52: on soil.
**Enterographa hutchinsiae* (Leight.) A. Massal., Loc. 8, 62: on *Juglans regia*.
**Evernia divaricata* (L.) Ach., Loc. 53, 58: on *Picea* sp.
**E. prunastri* (L.) Ach., Loc. 2, 8, 20, 29, 37, 46, 51, 53, 60: on garden fence, *Juglans regia*, *Picea* sp., *Pinus* sp., *Prunus* sp., *Pyrus* sp.
Flavoparmelia caperata (L.) Hale, Loc. 2, 6, 7, 9, 14, 17, 18, 20, 23, 26, 29: 30, 35, 36, 37, 41, 46, 48, 50, 51, 53, 60, 63: on *Alnus* sp., *Carpinus* sp., *Castanea* sp., *Citrus* sp., *Corylus* sp., *Fagus* sp., *Ficus* sp., *Fraxinus* sp., garden fence, *Juglans regia*, *Malus* sp., *Morus* sp., *Picea* sp., *Pinus* sp., *Prunus* sp., *Populus* sp., *Pyrus* sp., *Rhododendron* sp., *Salix* sp., siliceous rock.
**Fulgensia schistidii* (Anzi) Poelt, Loc. 52: on moss.
**Graphis scripta* (L.) Ach., Loc. 5, 6, 7, 8, 11, 16, 17, 41, 49, 63: on *Carpinus* sp., *Castanea* sp., *Corylus* sp., *Juglans regia*, *Malus* sp., *Morus* sp., *Quercus* sp.
**Heterodermia diademata* (Taylor) D.D. Awasthi, Loc. 3: on *Populus* sp.
**H. speciosa* (Wulfen) Trevis. Loc. 49: on *Fraxinus* sp.
Hypogymnia physodes (L.) Nyl., Loc. 2, 29, 30, 32, 36, 37, 40, 51, 53, 55, 57, 58, 59, 60: on *Alnus* sp., *Carpinus* sp., garden fence, died trees, moss, *Picea* sp., *Pinus* sp., *Pyrus* sp., *Rhododendron* sp., siliceous rock.
**H. tubulosa* (Schaer.) Hav., Loc. 2, 23, 46, 51, 53, 58, 60: on *Alnus* sp., garden fence, *Picea* sp., *Pinus* sp., *Prunus* sp., *Pyrus* sp.
**H. vittata* (Ach.) Parrique, Loc. 53 (det. H. Sipman), 52, 57: on moss.
**Immersaria cupreoatra* (Nyl.) Calat. & Rambold, Loc. 24: on siliceous rock.
**Ingvariella bispora* (Bagl.) Guderley & Lumbsch, Loc. 12: on siliceous rock.
**Ionaspis lacustris* (With.) Lutzoni, Loc. 53: on siliceous rocks (det. H. Sipman).
**Lecania naegelii* (Hepp) Diederich & Van den Boom, Loc. 3, 7, 8, 16, 25, 28, 29, 31, 37, 41, 48, 51, 52, 61: on *Carpinus* sp., *Corylus* sp., *Fraxinus* sp., garden fence, *Juglans regia*, *Pinus* sp., *Populus* sp., *Rhododendron* sp.

- Lecanora albella* (Pers.) Ach., Loc. 9, 16, 20, 22, 23, 25, 26, 29, 30, 31, 32, 36, 37, 39, 40, 45, 46, 47, 50, 51, 52, 53, 56, 58, 59, 60, 61: on *Alnus* sp., *Carpinus* sp., *Corylus* sp., *Fagus* sp., garden fence, *Juglans regia*, *Picea* sp., *Pinus* sp., *Platanus* sp., *Prunus* sp., *Pyrus* sp., *Rhododendron* sp., *Tilia* sp.
- **L. albescens* (Hoffm.) Branth & Rostr., Loc. 17: on mortar.
- L. argentata* (Ach.) Malme, Loc. 2, 3, 5, 6, 7, 8, 9, 16, 17, 20, 23, 25, 26, 29, 30, 31, 33, 35, 36, 37, 39, 40, 41, 45, 46, 47, 49, 50, 51, 52, 53, 54, 58, 59, 60, 62, 63: on *Alnus* sp., *Carpinus* sp., *Castanea* sp., *Citrus* sp., *Corylus* sp., *Ficus* sp., *Fraxinus* sp., garden fence, *Juglans regia*, *Malus* sp., *Picea* sp., *Pinus* sp., *Populus* sp., *Prunus* sp., *Pyrus* sp., *Rhododendron* sp., *Salix* sp., *Tilia* sp.
- **L. bolcana* (Pollini) Poelt, Loc. 12, 13, 27: on siliceous rock.
- L. campestris* (Schaer.) Hue, loc. 44 (det. H. Sipman) 11, 14, 21, 27, 33, 34, 47, 48, 52, 53, 54, 55, 57: calcareous rock, siliceous rock.
- **L. carpinea* (L.) Vain., Loc. 32, 60: on *Pyrus* sp., *Rhododendron* sp.
- **L. cenisia* Ach., Loc. 13, 33, 52, 53, 54: on siliceous rock.
- **L. chlarotera* Nyl., Loc. 8, 16, 17, 23, 25, 29, 31, 47, 49, 56, 58, 63: on *Alnus* sp., *Carpinus* sp., *Corylus* sp., *Fraxinus* sp., *Juglans regia*, garden fence, *Malus* sp., *Morus* sp., *Picea* sp., *Platanus* sp., *Populus* sp., *Prunus* sp., *Salix* sp.
- **L. cinereofusca* H. Magn., Loc. 2, 9, 17, 26, 30, 31: on *Carpinus* sp., *Juglans regia*, *Pinus* sp.
- **L. crenulata* (Dicks.) Hook., Loc. 17: on mortar.
- L. dispersa* (Pers.) Sommerf., Loc. 14, 17, 25, 29, 33: on calcareous rock, mortar, siliceous rock.
- **L. gangaleoides* Nyl., Loc. 27, 34, 48: on siliceous rock.
- **L. glabrata* (Ach.) Malme, Loc. 25: on *Corylus* sp.
- **L. hagenii* (Ach.) Ach., Loc. 9, 18, 20, 22, 23, 28, 29, 30, 31, 33, 37, 39, 45, 47, 50, 52, 53, 54, 56, 58, 59, 60, 61: on *Alnus* sp., *Carpinus* sp., *Corylus* sp., *Fagus* sp., *Fraxinus* sp., garden fence, *Juglans regia*, *Picea* sp., *Platanus* sp., *Prunus* sp., *Pyrus* sp., *Rhododendron* sp.
- L. horiza* (Ach.) Linds., Loc. 60 (det. H. Sipman), 25: on *Juglans regia*, *Populus* sp.
- **L. intumescens* (Rebent.) Rabenh., Loc. 28, 31, 39, 40, 62: on *Carpinus* sp., *Corylus* sp., *Juglans regia*.
- **L. polytropa* (Ehrh. ex Hoffm.) Rabenh., Loc., 13, 15, 17, 19, 34, 38, 53, 54, 55: on mortar, siliceous rock.
- L. pulicaris* (Pers.) Ach., Loc. 59: on garden fence.
- L. rupicola* (L.) Zahlbr., Loc. 12, 13, 18, 20, 22, 24, 27, 32, 33, 38, 53, 54, 55, 57: on siliceous rock.
- **L. saligna* (Schrad.) Zahlbr., Loc. 59: on *Pyrus* sp.

- **L. strobilina* (Spreng.) Kieff., Loc. 2, 58: on *Picea* sp., *Pinus* sp.
- **L. subcarpineae* Szatala, Loc. 22, 29, 30, 32, 36, 40, 47, 51, 58, 60: on *Carpinus* sp., *Corylus* sp., *Fagus* sp., *Picea* sp., *Pinus* sp., *Pyrus* sp., *Rhododendron* sp.
- **L. symmicta* (Ach.) Ach., Loc. 29, 37, 46, 50, 51, 52, 53, 56, 58, 59, 60: on *Alnus* sp., *Corylus* sp., garden fence, *Picea* sp., *Pinus* sp., *Pyrus* sp., *Rhododendron* sp.
- **Lecidea atrobrunnea* (Ramond) Schaer., Loc. 57: on siliceous rock.
- **L. exigua* Chaub., Loc. 13, 25, 28, 29, 38, 41, 42, 53: on *Carpinus* sp., *Corylus* sp., *Juglans regia*, *Populus* sp., *Rhododendron* sp.
- **L. fuscoatra* (L.) Ach., Loc. 12, 55: on siliceous rock.
- **L. tesellata* Flörke, Loc. 18, 54: on siliceous rock.
- **Lecidella carpathica* Körb., Loc. 18, 32, 33, 38, 40, 53, 54, 55: on siliceous rock.
- L. elaeochroma* (Ach.) M. Choisy, Loc. 3, 6, 7, 9, 13, 15, 16, 17, 18, 20, 22, 23, 25, 26, 29, 30, 31, 34, 35, 36, 37, 39, 40, 41, 42, 46, 47, 48, 50, 51, 52, 53, 54, 56, 58, 59, 60, 61, 62, 63: on *Alnus* sp., *Carpinus* sp., *Castanea* sp., *Citrus* sp., *Corylus* sp., *Fagus* sp., *Ficus* sp., *Fraxinus* sp., garden fence, *Juglans regia*, *Malus* sp., *Pinus* sp., *Platanus* sp., *Populus* sp., *Prunus* sp., *Pyrus* sp., *Rhododendron* sp., *Salix* sp., *Tilia* sp.
- L. stigmataea* (Ach.) Hertel & Leuckert, Loc. 13, 38, 40, 44, 53: on siliceous rock.
- **Leptogium cyanescens* (Rabenh.) Körb., Loc. 16, 40: on *Carpinus* sp., died trees, moss.
- **L. gelatinosum* (With.) J.R.Laundon, Loc. 1, 44, 55: on moss.
- **L. lichenoides* (L.) Zahlbr., Loc. 1, 11, 21, 47, 52: on siliceous rock, moss, *Quercus* sp.
- **Leprocaulon microscopicum* (Vill.) Gams, Loc. 8, 47: on siliceous rock.
- **Lobothallia radiosa* (Hoffm.) Hafellner, Loc. 13, 14, 19, 32, 53: on siliceous rock.
- **Megaspora verrucosa* (Ach.) Hafellner & V. Wirth, Loc. 55, 57: on moss.
- **Melanelia stygia* (L.) Essl., Loc. 57: on siliceous rock.
- **Melanohalea elegantula* (Zahlbr.) O. Blanco et al., Loc. 12, 13, 22: on siliceous rock.
- **M. exasperata* (De Not.) O. Blanco et al., Loc. 22, 24, 29, 40, 50, 59, 60: on *Carpinus* sp., garden fence, *Pyrus* sp., *Salix* sp., siliceous rock.
- **M. exasperatula* (Nyl.) O. Blanco et al., Loc. 30, 46, 51, 53, 58, 59, 60: on *Alnus* sp., *Carpinus* sp., *Picea* sp., *Pinus* sp., *Pyrus* sp., *Rhododendron* sp., *Salix* sp.
- Melanelixia glabratula* (Lamy) O. Blanco et al., Loc. 16, 25, 26, 30, 38: on *Carpinus* sp., *Corylus* sp., siliceous rock.

- **M. subargentifera* (Nyl.) O. Blanco et al., Loc. 2, 7, 9, 16, 20, 23, 25, 29, 30, 31, 36, 37, 40, 41, 42, 43, 46, 47, 49, 50, 51, 56, 58, 60, 63: on *Alnus* sp., *Carpinus* sp., *Corylus* sp., *Fagus* sp., *Ficus* sp., *Fraxinus* sp., garden fence, *Juglans regia*, *Malus* sp., *Pinus* sp., *Picea* sp., *Platanus* sp., *Populus* sp., *Prunus* sp., *Pyrus* sp., on *Rhododendron* sp.
- **M. subaurifera* (Nyl.) O. Blanco et al., Loc. 7, 16, 25, 29, 36, 47, on *Carpinus* sp., *Fraxinus* sp.
- **Mycobilimbia lurida* (Ach.) Hafellner & Türk, Loc. 44: on siliceous rock
- **Neofuscelia delisei* (Duby) Essl., Loc. 11, 33: on soil.
- Nephroma parile* (Ach.) Ach., Loc. 54 (det H. Sipman), 16, 26, 40, 53: on *Carpinus* sp., died trees, moss, *Rhododendron* sp., soil.
- **N. resupinatum* (L.) Ach., Loc. 20, 26, 40, 53: on died trees, *Prunus* sp., *Rhododendron* sp., soil.
- Ochrolechia pallescens* (L.) A. Massal, Loc. 23: on *Prunus* sp.
- O. parella* (L.) A. Massal., Loc. 16, 34, 44: on *Carpinus* sp., siliceous rock.
- **Opegrapha atra* Pers., Loc. 5, 6, 7, 8, 11, 17, 41, 49, 62, 63: on *Carpinus* sp., *Castanea* sp., *Corylus* sp., *Juglans regia*, *Malus* sp., *Quercus* sp.
- **O. ochrocheila* Nyl., Loc. 63: on *Malus* sp.
- **O. rufescens* Pers., Loc. 7: on *Corylus* sp.
- **O. saxatilis* DC., Loc. 34: on siliceous rock.
- **O. varia* Pers., Loc. 8, 11, 51, 62: on *Juglans regia*, *Picea* sp., *Quercus* sp.
- **O. vulgata* Ach., Loc. 5, 53: on *Corylus* sp., *Picea* sp.
- Parmelia saxatilis* (L.) Ach., Loc. 1, 2, 4, 12, 18, 24, 32, 33, 37, 51, 52, 53, 54, 57: on moss, *Picea* sp., *Pinus* sp., *Salix* sp., siliceous rock., soil.
- **P. sulcata* Taylor, Loc. 2, 6, 7, 8, 16, 18, 20, 22, 23, 24, 26, 29, 30, 32, 33, 36, 37, 40, 41, 46, 50, 51, 52, 55, 56, 57, 58, 59, 60, 63: on *Alnus* sp., calcareous rock, *Carpinus* sp., *Citrus* sp., *Corylus* sp., *Fagus* sp., *Ficus* sp., garden fence, *Juglans regia*, *Malus* sp., moss, *Picea* sp., *Pinus* sp., *Prunus* sp., *Pyrus* sp., *Rhododendron* sp., *Salix* sp., siliceous rock, soil.
- Parmelina pastillifera* (Harm.) Hale, Loc. 51: on *Picea* sp.
- P. tiliaceae* (Hoffm.) Ach., Loc. 18, 24, 52, 57: on moss, siliceous rock, soil.
- **P. quercina* (Willd.) Vain., Loc. 16, 39: on *Carpinus* sp.
- **Parmeliopsis ambigua* (Wulfen) Nyl., Loc. 2: on *Pinus* sp.
- **Parmotrema arnoldii* (Du Rietz) Hale, Loc. 36: on *Carpinus* sp.
- Parmotrema perlatum* (Huds.) M. Choisy, Loc. 6, 30, 37, 51, 63: on *Carpinus* sp., *Corylus* sp., *Malus* sp., *Picea* sp., *Pinus* sp.
- Peltigera canina* (L.) Willd., Loc. 52: on soil.
- **P. collina* (Ach.) Schrad., Loc. 13, 16, 26, 27, 32, 40, 52: on soil, siliceous rock.
- **P. didactyla* (With.) J.R. Laundon, Loc. 55, 57: on moss, soil.
- **P. elisabethae* Gyelnik, Loc. 55: on soil (det H. Sipman).
- **P. horizontalis* (Huds.) Baumg., Loc. 26, 52, 53: on *Carpinus* sp., soil.

- **P. lepidophora* (Nyl.) Bitter, Loc. 54: on soil.
 **P. leucophlebia* (Nyl.) Gyeln., Loc. 53, 54, 55: on moss, soil.
 **P. malacea* (Ach.) Funck, Loc. 26, 53: on *Carpinus* sp., moss, soil.
 **P. neckeri* Hepp ex Müll. Arg., Loc. 26: on *Carpinus* sp., soil.
P. polydactylon (Neck.) Hoffm., Loc. 26, 53: on soil.
P. praetextata (Flörke ex Sommerf.) Zopf, Loc. 26, 32, 40, 53: on died trees,
 on soil.
 **P. rufescens* (Weiss) Humb., Loc. 14, 16, 18, 20, 26, 27, 29, 32, 52, 53, 54,
 55: on moss, soil.
 **P. venosa* (L.) Baumg., Loc. 26, 52, 53: on soil.
 **Peltula euploca* (Ach.), Poelt, Loc. 19: on siliceous rock.
 **Pertusaria albescens* (Hudson) M.Choisy & Werner, Loc. 12, 16, 21, 23,
 26, 30, 37, 47, 53: on *Carpinus* sp., *Picea* sp., *Pinus* sp., *Prunus* sp.,
 siliceous rock.
 **P. amara* (Ach.) Nyl., Loc. 2, 20, 23, 40: on *Carpinus* sp., *Prunus* sp.
 **P. aspergilla* (Ach.) J.R. Laundon, Loc. 24, 30: on siliceous rock.
 **P. chiodectionoides* Bagl. ex A. Massal., Loc. 10: on siliceous rock.
 **P. flavicans* Lamy, Loc. 19, 55: on siliceous rock.
 **P. flavida* (DC.) J.R. Laundon, Loc. 36, 37: on *Carpinus* sp., *Pinus* sp.
 **P. hemispherica* (Flörke) Erichsen, Loc. 23: on *Prunus* sp.
 **P. hymenea* (Ach.) Schaer., Loc. 4, 22: on siliceous rock.
 **P. lactea* (L.) Arnold, Loc. 48, 52: on siliceous rock.
 **P. leucosora* Nyl., Loc. 43: on siliceous rock.
 **P. pertusa* (Weigel) Tuck., Loc. 16, 30: on *Carpinus* sp.
 **P. pustulata* (Ach.) Duby, Loc. 7, 16, 34, 36: on *Carpinus* sp., *Corylus* sp.,
Pinus sp.
 **P. velata* (Turner) Nyl., Loc. 16: on *Carpinus* sp.
 **Phaeographis dentritica* (Ach.) Mull. Arg., Loc. 7: on *Corylus* sp.
 **Phaeophyscia ciliata* (Hoffm.) Moberg, Loc. 56, 60, 61: *Juglans regia*,
Platanus sp., *Pyrus* sp.
 **P. clontha* (Ach.) Moberg, Loc. 15: on *Populus* sp.
P. constipata (Norrl. & Nyl.) Moberg., Loc. 52: on moss.
 **P. decolor* (Kashiw.) Essl., Loc. 38: on siliceous rock.
 **P. endococcina* (Körb.) Moberg, Loc. 53: on siliceous rock.
 **P. nigricans* (Flörke) Moberg, Loc. 8, 49: on *Juglans regia*, *Morus* sp.
 **P. orbicularis* (Neck.) Moberg, Loc. 3, 4, 7, 8, 9, 17, 24, 25, 29, 30, 42, 43,
 45, 46, 47, 48, 49, 59, 62, 63: on *Alnus* sp., calcareous rock, *Carpinus* sp.,
Corylus sp., *Ficus* sp., *Fraxinus* sp., garden fence, *Juglans regia*, *Malus*
 sp., *Morus* sp., *Salix* sp., *Populus* sp. *Prunus* sp., *Salix* sp., *Tilia* sp.
 **P. pusilloides* (Zahlbr.) Essl., Loc. 16, 30, 63: on *Alnus* sp., *Carpinus* sp.,
Malus sp.

- **P. sciastra* (Ach.) Moberg, Loc. 13, 32, 38, 48, 52: on siliceous rock.
- **Physcia adscendens* (Fr.) H. Olivier, Loc. 4, 5, 6, 7, 8, 17, 20, 23, 25, 28, 29, 30, 31, 41, 42, 46, 47, 48, 49, 50, 53, 59, 63: on *Alnus* sp., calcareous rock, *Carpinus* sp., *Castanea* sp., *Citrus* sp., *Corylus* sp., *Fagus* sp., *Ficus* sp., *Fraxinus* sp., garden fence, *Juglans regia*, *Malus* sp., *Picea* sp., *Populus* sp., *Prunus* sp., *Salix* sp., siliceous rock.
- **P. aipolia* (Humb.) Hampe, Loc. 4, 6, 9, 15, 18, 20, 22, 23, 28, 29, 30, 31, 37, 39, 40, 41, 42, 47, 48, 50, 51, 52, 56, 58, 59, 60, 62, 63: on *Alnus* sp., calcareous rock, *Carpinus* sp., *Corylus* sp., *Fagus* sp., *Fraxinus* sp., *Ficus* sp., *Malus* sp., garden fence, *Juglans regia*, *Picea* sp., *Platanus* sp., *Populus* sp., *Prunus* sp., *Pyrus* sp., *Rhododendron* sp., *Salix* sp.
- **P. caesia* (Hoffm.) Hampe ex Fűrnr., Loc. 13, 18, 29: on calcareous rock, siliceous rock.
- **P. dubia* (Hoffm.) Lettau, Loc. 12, 13, 18, 22, 24, 32, 33, 40, 46, 48, 53, 54, 57: on siliceous rock.
- **P. semipinnata* (J.F. Gmel.) Moberg, Loc. 19, 23, 29, 35, 42, 43, 49: on *Fraxinus* sp., *Populus* sp., *Salix* sp.
- **P. stellaris* (L.) Nyl., Loc. 15, 23, 24, 28, 29, 30, 31, 33, 58, 59, 61: on *Alnus* sp., *Corylus* sp., *Fraxinus* sp., *Juglans regia*, *Picea* sp., *Populus* sp., *Prunus* sp., *Pyrus* sp., *Rhododendron* sp., *Salix* sp., siliceous rock.
- **P. tenella* (Scop.) DC., Loc. 3, 7, 30, 31, 42, 45, 49, 51, 53, 58, 59, 60: on *Alnus* sp., *Corylus* sp., *Fraxinus* sp., *Picea* sp., *Populus* sp., *Prunus* sp., *Pyrus* sp., *Salix* sp., *Tilia* sp.
- **P. tribacia* (Ach.) Nyl., Loc. 4, 18, 19, 22, 33, 41, 44: on *Corylus* sp., *Citrus* sp., *Ficus* sp., siliceous rock.
- Physconia distorta* (With.) J.R. Laundon, Loc. 9, 15, 16, 20, 22, 23, 25, 26, 29, 30, 31, 36, 37, 40, 47, 50, 51, 59, 60, 63: on *Alnus* sp., *Carpinus* sp., *Corylus* sp., *Fagus* sp., *Fraxinus* sp., *Juglans regia*, *Malus* sp., *Pinus* sp., *Populus* sp., *Pyrus* sp., *Rhododendron* sp., *Salix* sp.
- **P. enteroxantha* (Nyl.) Poelt, Loc. 13: on siliceous rock.
- **P. muscigena* (Ach.) Poelt, Loc. 12, 13, 18, 22, 24, 52, 57: on moss, siliceous rock; Loc. 53: on moss (det. H. Sipman).
- **P. perisidiosa* (Erichsen) Moberg, Loc. 29, 46: on *Carpinus* sp., *Fagus* sp.
- **P. venusta* (Ach.) Poelt, Loc. 20, 26: on *Carpinus* sp., *Prunus* sp.
- **Placocarpus schaeferi* (Fr.) Breuss, Loc. 11, 44: on calcareous rock, siliceous rock.
- **Placynthium nigrum* (Huds.) Gray, Loc. 19, 44, 48: on siliceous rock.
- **Placopyrenium bucekii* (Nádv. & Servít) Breuss, Loc. 19, 44: on siliceous rock.
- **Platismatia glauca* (L.) W.L. Culb. & C.F. Culb., Loc. 8, 20, 26, 50: on *Carpinus* sp., *Juglans regia*, *Prunus* sp., *Pyrus* sp.

- **Polychidium muscicola* (Sw.) Gray, Loc. 31, 42, 48, 53, 55, 62: on moss, soil.
- **Porina aenea* (Wallr.) Zahlbr., Loc. 3, 18, 22, 33, 49: on *Carpinus* sp., *Corylus* sp., *Morus* sp., *Populus* sp., *Rhododendron* sp.
- **P. chlorotica* (Ach.) Müll. Arg., Loc. 49, 50: on *Corylus* sp., *Pyrus* sp.
- **Porpidia albocaerulescens* (Wulfen) Hertel & Knoph, Loc. 53: on siliceous rock.
- P. cinereoatra* (Ach.) Hertel & Knoph, Loc. 53: on siliceous rocks (det H. Sipman).
- **P. crustulata* (Ach.) Hertel & Knoph, Loc. 1, 38, 55: on siliceous rock.
- **P. macrocarpa* (DC.) Hertel & A.J. Schwab, Loc. 18, 21, 34, 47, 53: on siliceous rock.
- **P. speirea* (Ach.) Kremp., Loc. 53, 54: on siliceous rock.
- **Protopannaria pezizoides* (Weber ex F.H. Wigg.) P.M. Jørg. & S. Ekman, Loc. 53, 54: on soil.
- Protoparmelia badia* (Hoffm.) Hafellner, Loc. 53, 54, 57: on siliceous rock.
- Protoparmeliopsis muralis* (Schreb.) M. Choisy, Loc. 1, 4, 10, 11, 12, 14, 17, 18, 20, 22, 24, 25, 27, 29, 32, 33, 38, 40, 48, 52, 53, 54, 55, 57: on calcareous rock, mortar, siliceous rock.
- **Pseudephebe minuscula* (Nyl. ex Arnold) Brodo & D. Hawksw., Loc. 57: on siliceous rock.
- **Pseudevernia furfuracea* var. *ceratea* (Ach.) D. Hawksw., Loc. 2, 29, 51: on garden fence, *Picea* sp., *Pinus* sp.
- P. furfuracea* (L.) Zopf var. *furfuracea*, Loc. 2, 26, 37, 51, 53, 58, 60: on *Alnus* sp., *Carpinus* sp., *Picea* sp., *Pinus* sp., *Pyrus* sp., *Rhododendron* sp., siliceous rock, soil.
- **Punctelia subrudecta* (Nyl.) Krog, Loc. 29, 37, 49, 50: on *Fraxinus* sp., *Morus* sp., *Pyrus* sp., *Rhododendron* sp.
- **Pyrenula nitida* (Weigel) Ach., Loc. 62: on *Corylus* sp.
- **Ramalina calicaris* (L.) Fr., Loc. 20, 30, 60: on *Carpinus* sp., *Prunus* sp., *Pyrus* sp.
- R. farinacea* (L.) Ach., Loc. 2, 7, 16, 17, 20, 23, 25, 26, 29, 30, 32, 40, 47, 50, 51, 53, 55, 58, 60: on *Alnus* sp., *Carpinus* sp., *Corylus* sp., *Fraxinus* sp., garden fence, *Picea* sp., *Populus* sp., *Prunus* sp., *Pyrus* sp., *Rhododendron* sp., *Salix* sp., siliceous rock.
- R. fastigiata* (Pers.) Ach., Loc. 17, 29: on *Carpinus* sp.
- R. fraxinea* (L.) Ach., Loc. 26, 29, 53, 59: on *Carpinus* sp., garden fence, *Picea* sp., *Salix* sp.
- **R. pollinaria* (Westr.) Ach., Loc. 12, 18, 24, 53, 55, 60: on *Picea* sp., *Pyrus* sp., siliceous rock.
- R. polymorpha* (Lilj.) Ach., Loc. 18, 24, 55, 57: on moss, siliceous rock.

- **R. sinensis* Jatta, Loc. 20, 22, 23, 59, 60: on *Carpinus* sp., *Prunus* sp., *Pyrus* sp., *Salix* sp.
- **Rhizocarpon badioatrum* (Flörke ex Spreng.) Th. Fr., Loc. 32, 53, 54: on siliceous rock.
- **R. geminatum* Körb., Loc. 13, 20, 27, 33, 48, 53: on calcareous rock, siliceous rock.
- R. geographicum* (L.) DC., Loc. 11, 12, 18, 24, 27, 32, 33, 38, 40, 48, 52, 53, 54, 55, 57: on siliceous rock.
- **R. lecanorinum* Anders, Loc. 20, 22, 38, 52: on siliceous rock.
- **R. subgeminatum* Eitner, Loc. 13, 48: on siliceous rock.
- **Rhizoplaca chrysoleuca* (Sm.) Zopf, Loc. 55, 57: on siliceous rock.
- **Rimularia insularis* (Nyl.) Rambold & Hertel, Loc. 18, 38: on *Lecanora rupicola*.
- **Rinodina confragosa* (Ach.) Körb., Loc. 24: on siliceous rock.
- **R. exigua* (Ach.) Gray, Loc. 29, 58: on *Fraxinus* sp., *Picea* sp.
- **R. milvinia* (Wahlenb.) Th. Fr., Loc. 38: on siliceous rock.
- **R. mniaraea* (Ach.) Körb., Loc. 54, 55, 57: on moss.
- **R. oxydata* (A. Massal.) A. Massal., Loc. 19, 44, 48: on siliceous rock.
- **R. parasitica* H. Mayrhofer & Poelt, Loc. 13, 46: on *Aspicilia caesiocinerea*.
- **R. pyrina* (Ach.) Arnold, Loc.: on *Carpinus* sp., Loc. 9, 18, 23, 29, 31, 32, 33, 45, 48, 52, 53, 56, 59, 60, 61: on *Corylus* sp., *Juglans regia*, *Platanus* sp., *Prunus* sp., *Pyrus* sp., *Rhododendron* sp., *Salix* sp.
- **R. roboris* (Dufour ex Nyl.) Arnold, Loc. 20, 49: on *Carpinus* sp., *Fraxinus* sp.
- **R. sophodes* (Ach.) A. Massal., Loc. 4, 20, 22, 23, 25, 29, 31, 32, 36, 39, 42, 46, 47, 50, 52, 56, 58: on *Alnus* sp., *Carpinus* sp., *Corylus* sp., *Fraxinus* sp., garden fence, *Picea* sp., *Platanus* sp., *Prunus* sp., *Rhododendron* sp., *Salix* sp.
- **R. teichophila* (Nyl.) Arnold, Loc. 13, 22, 33, 38, 53: on *Carpinus* sp., siliceous rock.
- Sarcogyne regularis* Körb., Loc. 25: on mortar.
- **Schaereria fuscocinerea* (Nyl.) Clauzade & Cl. Roux, Loc. 55: on siliceous rock.
- **Scoliciosporum umbrinum* (Ach.) Arnold, Loc. 13, 32, 33, 58, 60: on *Picea* sp., *Pyrus* sp., siliceous rock.
- #*Sphinctrina leucopoda* Nyl., Loc. 36: on *Pertusaria pertusa*.
- **Strigula glabra* (A. Massal.) V. Wirth, Loc. 62: (det H. Sipman), 31, 43: *Carpinus* sp., *Corylus* sp., *Populus* sp.
- **S. taylorii* (Carroll ex Nyl.) R.C. Haris, Loc. 46: on *Carpinus* sp.
- Tephromela atra* (Huds.) Hafellner, Loc. 18, 24, 33, 38, 55, 57: on siliceous rock.

- **Umbilicaria cinereorufescens* (Schaer.) Frey, Loc. 24, 55, 57: on siliceous rock.
- **U. cinerascens* (Ach.) Nyl., Loc. 55, 57: on siliceous rock.
- **U. cylindrica* (L.) Delise ex Duby, Loc. 54, 55, 57: on siliceous rock.
- **U. decussata* (Vill.) Zahlbr., Loc. 57: on siliceous rock.
- **U. deusta* (L.) Baumg., Loc. 24, 53, 54, 55, 57: on siliceous rock.
- **U. grisea* Hoffm., 24: on siliceous rock.
- **U. hirsuta* (Sw. ex Westr.) Hoffm., Loc. 55, 57: on siliceous rock.
- **U. hyperborea* (Ach.) Hoffm., Loc. 24, 57: on siliceous rock.
- **Usnea articulata* (L.) Hoffm., Loc. 49: on *Morus* sp.
- U. florida* (L.) Weber ex F.H. Wigg., Loc. 20, 51, 59: on *Alnus* sp., *Picea* sp., *Prunus* sp., *Pyrus* sp.
- **U. fulvorenagens* (Räs.) Räs., Loc. 53, 59: on *Picea* sp. (det H. Sipman).
- **U. glabrescens* (Nyl. ex Vain.) Vain., Loc. 58: on *Picea* sp.
- **U. hirta* (L.) Weber ex F.H. Wigg., Loc. 20, 51, 53: on *Alnus* sp., *Picea* sp., *Prunus* sp.
- **U. intermedia* Jatta, Loc. 59: on *Pyrus* sp. (det H. Sipman).
- Verrucaria nigrescens* Pers., Loc. 10, 11, 25: on calcareous rock, mortar, siliceous rock.
- #*Verrucaria submersella* Servít, Loc. 53: on siliceous rocks (det H. Sipman).
- **Vulpicida pinastri* (Scop.) J.-E. Mattsson & M.J. Lai, Loc. 53: on *Picea* sp.
- Xanthoparmelia conspersa* (Ehrh. ex Ach.) Hale, Loc. 1, 4, 10, 13, 18, 19, 20, 32, 34, 44, 52: on siliceous rock.
- **X. loxodes* (Nyl.) O. Blanco *et al.*, Loc. 44: on siliceous rock.
- X. pulla* (Ach.) O. Blanco *et al.*, Loc. 4, 18, 48, 55, 59: on *Pyrus* sp., siliceous rock.
- **X. stenophylla* (Ach.) Ahti & D. Hawksw., Loc. 22, 44, 52, 55, 57: on siliceous rock.
- **X. tinctina* (Maheu & A. Gillet) Hale, Loc. 19, 22, 34, 38, 44, 55: on siliceous rock.
- **X. verruculifera* (Nyl.) O. Blanco, A. Crespo, Elix, D. Hawksw. & Lumbsch., Loc. 4, 12, 19, 33, 44, 48: on siliceous rock.
- **Xanthoria calcicola* Oxner, Loc. 19, 34, 44: on siliceous rock
- **X. candelaria* (L.) Th. Fr., Loc. 17, 49, 56: on *Carpinus* sp., *Fraxinus* sp., *Morus* sp., *Platanus* sp.
- **X. elegans* (Link) Th. Fr., Loc. 22, 24, 55: on siliceous rock.
- **X. fulva* (Hoffm.) Poelt & Petut., Loc. 59: on *Salix* sp.
- **X. parietina* (L.) Th. Fr., Loc. 3, 4, 5, 6, 7, 8, 9, 15, 16, 17, 18, 23, 25, 28, 29, 30, 31, 34, 35, 36, 41, 42, 43, 45, 47, 49, 50, 56, 59, 60, 61, 63: on *Alnus* sp., calcareous rock, *Carpinus* sp., *Citrus* sp., *Corylus* sp., *Fagus* sp., *Ficus* sp., *Fraxinus* sp., garden fence, *Juglans regia*, *Malus* sp.,

Morus sp., *Pinus* sp., *Platanus* sp., *Populus* sp., *Prunus* sp., *Pyrus* sp.,
Rhododendron sp., *Salix* sp., *Tilia* sp.

**X. polycarpa* (Hoffm.) Rieber, Loc. 59: on *Salix* sp.

Results and Discussion

The list includes 314 taxa including 309 lichenized and 5 lichenicolous fungal taxa. Of these, *Arthopyrenia persoonii*, *Verrucaria submersella* and *Sphinctrina leucopoda* are new recorded for Turkey. Among the further reported species, *Ionaspis lacustris* and *Usnea intermedia* are recorded for the second time from Turkey.

When we analyse the substrata on which the lichen taxa grow on bark, wood and dead trees of both deciduous and evergreen trees are the most common in the area (represented by 114 species).

Saxicolous taxa are the second most common group (represented by 110 species, 99 of which are siliceous saxicolous taxa, 6 calciferous saxicolous taxa and 5 indifferent).

Terricolous taxa are compose the third group (represented by 20 species) and muscicolous are taxa compose a fourth group (represented by 12 species). Lichenicolous taxa (*Arthonia varians*, *Diploschistes muscorum*, *Rinodina parasidica*, *Rimularia insularis* and *Sphinctrina leucopoda*) make up a lower proportion. Of these, *Arthonia varians* and *Rimularia insularis* were observed on *Lecanora rupicola*, *Diploschistes muscorum* on *Cladonia* sp., *Rinodina parasitica* on *Aspicilia caesiocinerea*, and *Sphinctrina leucopoda* on *Pertusaria pertusa*. In addition, 21 taxa were both corticolous and saxicolous, 14 taxa corticolous and terricolous, 3 taxa terricolous and saxicolous, 2 taxa muscicolous and saxicolous, 5 taxa muscicolous and terricolous, 3 taxa corticolous, muscicolous and saxicolous, 4 taxa muscicolous, terricolous and saxicolous, 2 taxa corticolous, muscicolous and terricolous and 1 species corticolous, muscicolous, saxicolous and terricolous.

As regards substrate choice *Flavoparmelia caperata*, *Lecanora albella*, *Lecanora argentata*, *Lecidella elaeochroma*, *Melanelixia subargentifera*, *Parmelia sulcata*, *Phaeophyscia orbicularis*, *Physcia adscendens*, *P. aipolia* and *Xanthoria parietina* were the least sensitive. *Xanthoria parietina* was found on 21 different substrata, *Flavoparmelia caperata* on 19 different substrata, *Lecidella elaeochroma* and *Parmelia sulcata* on 18 different substrata, *Lecanora argentata* on 17 different substrata, *Melanelixia subargentifera*, *Physcia adscendens* and *P. aipolia* on 15 different substrata,

and *Phaeophyscia orbicularis* and *Lecanora albella* grew on 14 different substrata.

In the study area, several representative indicator species with an oceanic distribution are found, such as *Buellia disciformis*, *Chrysothrix candelaris*, *Leptogium lichenoides*, *Nephroma parile*, *Peltigera collina*, *Pertusaria lactea*, *Physconia enteroxantha* and *Caloplaca thallincola*. Several sensitive species according to Purvis et al. (1992) and Wirth (1995), such as *Anaptychia ciliaris*, *Bryoria fuscescens*, *Parmelina pastillifera*, *Pertusaria albescens*, *P. amara*, *P. hemispherica*, *P. pertusa*, *Ramalina calicaris*, *R. farinacea*, *R. fraxinea*, *Physcia aipolia* and *Usnea* spp. were also found in the research area.

The richness geographical features of Ordu (wide altitudinal range, rough topography and maritime influence), offer a wide range of niches so that a rich lichen biodiversity can be expected. Furthermore, due to this features of the province, lichens species distributed in various sites of Europe, America and Asia occur with more local lichens species.

According to the literature (see Introduction) the number of lichen taxa recorded from different regions of Ordu province was 94. The number of known lichen taxa in Ordu, including records from the present study, is now 357. However, additional studies are necessary to extend the knowledge of the lichen biota of Ordu. Particularly the inner parts of the province are poorly explored.

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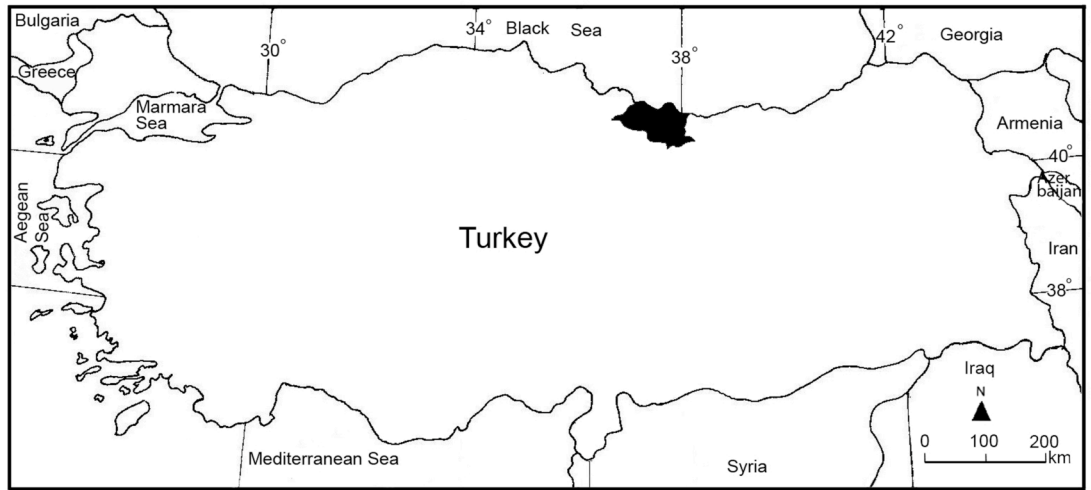


Fig. 1. Map of Turkey showing Ordu province

Table 1. The collecting localities

No	Localities	Coordinates	Altitude (m)	Date
1.	NW of Ordu city centre	40°59'21" N 37°51'51" E	310	20.03.2004
2.	W of Ordu city centre, Boztepe	40°59'25" N 37°51'9" E	510	20.03.2004
3.	S of Fatsa district, N of Meşebükü village	40°0'11" N 37°30'42" E	13	29.04.2004
4.	4. Fatsa district, Çullu village	40°0'53" N 37°29'11" E	226	29.04.2004
5.	5. Gülyalı, Sayaca village	40°57'37" N 38°20'50" E	240	17.07.2004
6.	E of Gülyalı district	40°57'41" N 38°5'50" E	25	17.07.2004
7.	Gülyalı district, Yeniköy village	40°58'9" N 38°2'17" E	5	17.07.2004
8.	Gülyalı district, Turnasuyu village	41°3'20" N 37°59'4" E	17	17.07.2004
9.	Ünye district, Hanyanı, roadside	40°1'47" N 37°6'54" E	225	07.08.2004
10.	Ünye district, Yenikent village	40°56'1" N 37°7'4" E	911	07.08.2004
11.	Ünye district, The top of Ünye castle	40°5'46" N 37°14'22" E	245	07.08.2004
12.	Aybastı district, Çobantepe high plateau	40°38'40" N 37°16'55" E	1482	02.07.2005
13.	Aybastı district, Göltepe high plateau	40°38'28" N 37°15'55" E	1435	12.07.2005

Table 1. Continued

No	Localities	Coordinates	Altitude (m)	Date
14.	Aybastı district, Çakırlı village, rocky area	40°40'26" N 37°20'45" E	1018	12.07.2005
15.	Aybastı district, Perşembe high plateau	40°37'33" N 37°17'59" E	1452	13.07.2005
16.	Aybastı district, Toygar village	40°38'24" N 37°21'6" E	1345	13.07.2005
17.	Kabataş district, Eceli village	40°43'57" N 37°26'29" E	475	13.07.2005
18.	Korgan district, Korgan high plateau	40°43'8" N 34°13'54" E	1520	13.07.2005
19.	Fatsa district, Yalıköy, sea shore, rocky area	41°3'15" N 37°36'5" E	0	13.07.2005
20.	Korgan district, Belalan village	40°45'42" N 37°14'0" E	1270	13.07.2005
21.	Gölköy district, Emirler village	40°45'13" N 37°37'28" E	1138	14.07.2005
22.	Gölköy district, Yeşilyaya high plateau	40°35'43" N 37°34'31" E	1145	14.07.2005
23.	Gölköy district, Aydoğan village	40°41'31" N 37°30'40" E	1050	14.07.2005
24.	Gölköy district, Aydoğan hill	40°33'6" N 37°34'37" E	1900	14.07.2005
25.	Gölköy district, between Hıarcık village and Güzelyurt village	40°41'21" N 37°28'14" E	1060	15.07.2005
26.	Gölköy district, Harçbel passageway	40°35'35" N 37°38'24" E	1550	15.07.2005

Table 1. Continued

No	Localities	Coordinates	Altitude (m)	Date
27.	Mesudiye district, Mahmudiye village	40°35'24" N 37°8'53" E	1617	15.07.2005
28.	N of Kumru district centre	40°52'43" N 37°29'0" E	440	16.07.2005
29.	Kumru district, Ericcek high plateau	40°53'35" N 37°13'48" E	1120	16.07.2005
30.	Kumru district, Konaklı village	40°48'47" N 37°13'44" E	1150	16.07.2005
31.	Kumru district, Ortaca village	40°53'55" N 37°14'54" E	865	16.07.2005
32.	Kumru district, Arpacı high plateau, stream bank	40°44'50" N 37°12'49" E	1520	16.07.2005
33.	Kumru district, Sarıçiçek high plateau	40°45'28" N 37°12'51" E	1521	16.07.2005
34.	N of Ünye district, area of piny recreational facilities, m, sea shore	41°8'44" N 37°17'17" E	1	21.07.2006
35.	Ünye district, Sahil village	41°8'40" N, 37°11'22" E	5 m	21.07.2006
36.	Akkuş district, Kabakulak village	40°52'30" N 37°3'33" E	1080	16.09.2006
37.	Akkuş district, Dumantepe village	40°51'2" N 37°27" E	1245	16.09.2006
38.	Akkuş district, Argan high plateau	40°46'10" N 37°1'11" E	1490	16.09.2006
39.	Çaybaşı district, İlküvez, Taşkesik village	40°55'46" N 36°59'41" E	681	17.09.2006

Table 1. Continued

No	Localities	Coordinates	Altitude (m)	Date
40.	Akkuş district, Kertil high plateau	40°46'23" N 37°2'31" E	1395	17.09.2006
41.	Perşembe district, Çeşmeönü village	41°5'57" N 37°46'59" E	14	25.04.2007
42.	Perşembe district, Beyli village	41°0'57" N 37°47'46" E	120	25.04.2007
43.	Perşembe district, Efirli village	41°1'14" N 37°49'12" E	2	25.04.2007
44.	Perşembe district, Medreseönu, sea shore	41°5'10" N 37°38'20" E	3	25.04.2007
45.	N of Gürgentepe district centre	40°47'11" N 37°36'17" E	1225	08.09.2007
46.	Gürgentepe district, Özlü village	40°47'57" N 37°34'17" E	1160	08.09.2007
47.	Gürgentepe district, Döşek village	40°46'13" N 37°36'38" E	1163	08.09.2007
48.	Çamaş district, Gelinkayası,	40°54'18" N 37°31'36" E	600	09.09.2007
49.	Çamaş district, Danişman village	40°56'8" N 37°32'1" E	220	09.09.2007
50.	Çamaş district, Kestaneyokuşu village	40°50'0" N 37°31'17" E	1060	09.09.2007
51.	Kabadüz district, S of Yokuşdibi	40°40'43" N 37°56'11" E	1454	1.11.2008
52.	Kabadüz district, Isırgan Obası high plateau	40°40'54" N 37°55'32" E	1457	1.11.2008

Table 1. Continued

No	Localities	Coordinates	Altitude (m)	Date
53	Kabadüz district, N of Susuz plateau	40°38'57" N 37°49'22" E	1800	1.11.2008
54	Kabadüz district, Seyit high plateau	40°38'28" N 38°0'43" E	1933	1.11.2008
55	Kabadüz district, Seyit hill	40°38'56" N 38°0'17" E	2070	1.11.2008
56	Kabadüz district, Çambaşı high plateau	40°37'40" N 37°57'45" E	1860	2.11.2008
57	Mesudiye district, Zile high plateau, around of Zile lake	40°35'32" N 37°53'13" E	1979	2.11.2008
58	Mesudiye district, between Yeşilce high plateau and Zile high plateau	40°34'58" N 37°31'7" E	1842	2.11.2008
59	Mesudiye district, Kızılağaç high plateau	40°35'25" N 37°51'19" E	1821	2.11.2008
60	Mesudiye district, between Kızılağaç high plateau and Topçam high plateau	40°35'27" N 37°50'33" E	1690	2.11.2008
61	Mesudiye district, S of Topçam, near the TV station	40°36'14" N 37°46'11" E	1200	2.11.2008
62	Ulubey district, Karaağaç village	40°50'50" N 37°49'55" E	198	2.11.2008
63	S of Ordu city centre, Dedeli village	40°54'10" N 37°49'2" E	286	2.11.2008