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Epiphytic lichens and lichenicolous fungi from the northern part of Montenegro

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Abstract

A list of 120 taxa of lichens (117 species) and three species of lichenicolous fungi from the northern part of Montenegro is presented. The lichens *Biatora chrysantha*, *Caloplaca monacensis*, *Candelariella efflorescens*, *Loxospora elatina*, *Micarea adnata*, *Ochrolechia arborea*, *O. microstictoides*, *Phaeophyscia nigricans*, *Physconia enteroxantha*, *Ph. grisea*, *Rinodina capensis*, *R. polysporoides*, *R. pyrina*, *Scoliciosporum umbrinum* var. *corticolum*, *Xanthoria candelaria*, *X. ulophyllodes* and the lichenicolous fungi *Lichenodiplis lecanorae*, *Teloggalla olivieri*, and *Xanthoriicola physciae* are new to Montenegro.

Keywords

Ascomycetes; Balkan Peninsula; biodiversity; mycota; Pljevlja

Introduction

The knowledge of the lichen biota of Montenegro has recently been improved as a result of field work in the Biogradska Gora National Park (Bilovitz et al. 2009) and at other sites (Bilovitz et al. 2008). The lichen mycota as currently known from Montenegro includes 685 species of lichenized fungi, 12 species of lichenicolous fungi, and 9 non-lichenized fungi traditionally included in lichenological literature (Hawksworth et al. 2008, Gaya 2009, Knežević & Mayrhofer 2009, Tretiach et al. 2009). This further contribution deals with the lichen flora of northern Montenegro, a hitherto lichenologically unexplored region, with the exception of the Durmitor National Park (Kušan 1933, Savić 2001, Žukovec 2005).

The investigation area covers the city and municipality of Pljevlja, extending southwards to Bistrica. With a total area of 1,346 km², it is the third largest municipality in Montenegro and Pljevlja is the third largest city in Montenegro, with a population of c. 21,300, and situated at an altitude of 770 m. The highest point of the municipality is Ljubišnja mountain at 2,238 m, and the lowest point is in the canyon of the Tara river at 529 m. Near to Pljevlja is the only thermal power station in Montenegro, which provides 45 % of the country's electric supply, the largest coal mine with nearly 100 % of the country's production, and lead and zinc mines (Šehi & Šehi 2005).

The climate of the area is moderate-continental with an average precipitation of 600 to 800 mm p.a. in the lowland areas and 800 to 1000 mm p.a. in mountainous areas (Šehi & Šehi 2005), being similar to Central Europe, but with higher temperatures. The potential vegetation of the area is mainly mesophilic beech, oak, hornbeam and spruce forests (Stevanovi et al. 1995).

The sampling locations (Fig. 1) cover heavily polluted spots, such as fruit trees in meadows near the thermal power station and other anthropogenically influenced sites such as roadside trees, as well as different forests (spruce, beech, and oak). Some sampling locations (10, 11, 12, 15, 16 and 17) are situated in the area of the famous Tara river canyon. Žukovec (2005) reports 76 lichen species from the investigated area of Tepa ko Polje and the Tepca part of the Tara river canyon. With a length of c. 80 km, this is the longest canyon in Europe and the second longest in the world. The canyon is protected as a UNESCO World Heritage Site, and is part of the Durmitor National Park.

Material and methods

The list of lichenized and lichenicolous fungi presented in this paper is mainly based on a collection made by the first author, who visited N-Montenegro in the course of a students' excursion in summer 2009 organized by Danijela Stešević, during which time for collecting was rather limited. The specimens have been identified (using routine light microscopy techniques) with the aid of Poelt (1969), Poelt & Vězda (1977, 1981), Clauzade & Roux (1985) and Wirth (1995). Some of the identifications required verification by using standardized thin-layer chromatography (TLC) following the protocols of White & James (1985) and Orange et al. (2001). The specimens are preserved in the herbarium of the Institute of Plant Sciences, Karl-Franzens-University Graz (GZU). The nomenclature follows Nimis & Martellos (2003), Santesson et al. (2004) or other modern treatments. New records for Montenegro are marked with an asterisk (*).

List of sampling locations and collectors:

Montenegro, northern part,...

01: Surroundings of Pljevlja, near the thermal power station, 43°20'29"N/19°19'05"E, c. 810 m, meadow with isolated fruit trees, 30.VIII.2009, P. Bilovitz.

02: Surroundings of Pljevlja, near the thermal power station, 43°20'26"N/19°19'01"E, c. 810 m, meadow with isolated fruit trees, 30.VIII.2009, P. Bilovitz.

03: Surroundings of Pljevlja, near the thermal power station, 43°20'24"N/19°19'06"E, c. 810 m, meadow with isolated fruit trees, 31.VIII.2009, P. Bilovitz.

04: Surroundings of Pljevlja, near the thermal power station, 43°20'20"N/19°18'59"E, c. 810 m, meadow with isolated fruit trees, 31.VIII.2009, P. Bilovitz.

05: Surroundings of Pljevlja, near the thermal power station, 43°20'23"N/19°19'01"E, c. 810 m, trees along a drained stream, 31.VIII.2009, P. Bilovitz.

06: S of Pljevlja, near Odžak, 43°15'51"N/19°22'22"E, c. 920 m, shrubs on a sunny scarp, 31.VIII.2009, P. Bilovitz.

07: S of Pljevlja, near Odžak, 43°15'54"N/19°22'49"E, c. 940 m, forest with *Quercus cerris*, 31.VIII.2009, P. Bilovitz.

08: Near Kosanica, 43°13'30"N/19°22'09"E, c. 1190 m, forest with *Picea abies*, 01.IX.2009, P. Bilovitz.

09: Near Đurdevi a Tara, 43°10'00"N/19°17'05"E, c. 900 m, single *Malus sylvestris* tree next to the road, 01.IX.2009, P. Bilovitz.

10: Đurdevi a Tara, near the Tara bridge, 43°08'37"N/19°17'46"E, c. 730 m, forest with *Fagus sylvatica*, 01.IX.2009, P. Bilovitz.

11: Đurdevi a Tara, near the Tara bridge, 43°08'45"N/19°17'40"E, c. 700 m, single *Juglans regia* tree next to the path, 01.IX.2009, P. Bilovitz.

12: Đurdevi a Tara, near the Tara bridge, Tara river canyon, 43°08'39"N/19°17'53"E, c. 670 m, shadowy forest with *Fagus sylvatica*, 01.IX.2009, P. Bilovitz.

13: Pljevlja, road to the monastery "Sveta Trojica", 43°22'04"N/19°21'31"E, c. 870 m, roadside trees, 02.IX.2009, P. Bilovitz.

14: Monastery in Otilovi i, 43°17'56"N/19°25'09"E, c. 900 m, isolated trees and shrubs in a dry meadow, 02.IX.2009, P. Bilovitz.

15: W of Bistrica, Hotel "Ravnjak", 42°59'22"N/19°24'41"E, c. 850 m, shingle roof made of wood and trees along the creek below the hotel, 13.VI.2009, H. Mayrhofer; 03.IX.2009, P. Bilovitz.

16: N of Bistrica, S of the Tara river canyon, 43°00'23"N/19°25'47"E, c. 940 m, forest with *Pinus nigra*, 13.VI.2009, H. Mayrhofer.

17: Đurdevi a Tara, near the Tara bridge, 43°09'02"N/19°17'44"E, c. 800 m, isolated trees, 13.VI.2009, A. Drescher.

List of substrata and their abbreviations:

<i>Acer campestre</i>	Ace cam	<i>Pyrus communis</i>	Pyr com
<i>Acer pseudoplatanus</i>	Ace pse	<i>Pyrus pyraeaster</i>	Pyr pyr
<i>Crataegus monogyna</i>	Cra mon	<i>Quercus cerris</i>	Que cer
<i>Fagus sylvatica</i>	Fag syl	<i>Salix spec.</i>	Sal
<i>Fraxinus excelsior</i>	Fra exc	on branches	bra-
<i>Juglans regia</i>	Jug reg	on bark of trunks (corticolous)	cor-
<i>Malus sylvestris</i>	Mal syl	on dead wood (lignicolous)	lig(-)
<i>Picea abies</i>	Pic abi	on mossy ...	mus-
<i>Pinus nigra</i>	Pin nig	on mossy rocks	mus-sax
<i>Prunus avium</i>	Pru avi	on root	roo-
<i>Prunus spinosa</i>	Pru spi	on soil	ter

Results

Lichens

Acrocordia gemmata (Ach.) A.Massal.: 12 (cor Fag syl)

Amandinea punctata (Hoffm.) Coppins & Scheid.: 01 (cor Pyr com), 07 (cor Que cer), 14 (bra Cra mon, cor Pin nig)

Anaptychia ciliaris (L.) Körb.: 06 (bra Pru spi), 07 (cor Que cer), 11 (cor Jug reg)

Arthonia radiata (Pers.) Ach.: 13 (cor Fra exc)

Bacidia rubella (Hoffm.) A.Massal.: 03 (cor Pyr pyr), 05 (cor Sal), 15 (cor Ace pse)

Note: Previously only known from the environs of Herceg Novi (Servít 1931, as *B. luteola*).

**Biatora chrysanthia* (Zahlbr.) Printzen: 07 (cor Que cer), 08 (cor/mus Pic abi)

Buellia disciformis (Fr.) Mudd: 07 (cor Que cer)

Buellia griseovirens (Turner & Borrer ex Sm.) Almb.: 08 (cor Pic abi), 15 (lig), 16 (lig)

Caloplaca cerina (Ehrh. ex Hedw.) Th.Fr.: 03 (cor Pyr pyr), 06 (bra Cra mon, bra Pru spi)

Caloplaca cerinella (Nyl.) Flagey: 09 (bra Mal syl)

Note: Previously only known from the Biogradska Gora National Park (Bilovitz et al. 2009).

**Caloplaca monacensis* (Lederer) Lettau: 01 (cor Pyr com), 13 (cor Fra exc)

Note: *C. monacensis* is a neglected name for *C. cerina* var. *cyanolepra* (Vondrák et al. 2009).

Caloplaca pyracea (Ach.) Th.Fr.: 02 (cor Pru avi), 06 (bra Cra mon, bra Pru spi)

Candelaria concolor (Dicks.) Stein: 01 (cor Pyr com), 03 (cor Pyr com, cor Pyr pyr), 13 (cor Ace cam, cor Fra exc)

**Candelariella efflorescens* auct. europ. non R.C.Harris & W.R.Buck: 04 (cor Pru avi)

Candelariella reflexa (Nyl.) Lettau: 01 (cor Pyr com), 02 (cor Pru avi), 03 (cor Pyr pyr), 04 (cor Pru avi), 14 (cor Que cer)

Candelariella vitellina (Hoffm.) Müll.Arg.: 02 (cor Pru avi), 04 (cor Pru avi), 06 (bra Cra mon, bra Pru spi)

Candelariella xanthostigma (Ach.) Lettau: 01 (cor Pyr pyr), 03 (cor Pyr com, cor Pyr pyr), 04 (cor Pru avi, cor Pyr com), 07 (cor Que cer), 09 (bra Mal syl), 14 (bra Cra mon)

Catillaria nigroclavata (Nyl.) Schuler: 02 (cor Pru avi), 04 (cor Pru avi), 09 (bra Mal syl), 14 (bra Cra mon), 17 (bra Que cer)

Note: Previously only known from two localities in the environs of Herceg Novi (Servít 1931).

Cladonia coniocraea (Flörke) Spreng.: 15 (lig)

Cladonia convoluta (Lam.) Anders: 14 (ter)

Cladonia furcata (Huds.) Schrad.: 07 (mus Que cer), 08 (cor Pic abi)

Cladonia pyxidata (L.) Hoffm.: 07 (mus-sax), 15 (lig)

Cladonia rangiformis Hoffm.: 14 (ter)

Cladonia symphy carpia (Flörke) Fr.: 14 (ter)

Collema auriforme (With.) Coppins & J.R.Laundon: 12 (mus Fag syl), 15 (mus Ace pse, mus-lig)

Collema flaccidum (Ach.) Ach.: 10 (cor/mus Fag syl), 12 (cor/musFag syl)

Collema furfuraceum (Arnold) Du Rietz: 11 (cor Jug reg)

Collema nigrescens (Huds.) DC.: 15 (lig)

Diploschistes muscorum (Scop.) R.Sant.: 07 (mus-roo Que cer)

Evernia divaricata (L.) Ach.: 07 (cor Que cer), 08 (bra Pic abi)

Evernia prunastri (L.) Ach.: 06 (bra Pru spi), 07 (bra Que cer), 09 (bra Mal syl), 11 (cor Jug reg), 13 (cor Fra exc), 14 (bra Cra mon), 15 (lig)

Flavoparmelia caperata (L.) Hale: 07 (cor Que cer), 11 (cor Jug reg), 15 (lig), 17 (bra Que cer)

Graphis scripta (L.) Ach.: 10 (cor Fag syl), 12 (cor Fag syl)

Hypocenomyce scalaris (Ach.) M.Choisy: 14 (cor Pin nig)

Note: Previously only known from the village Livari on the northern slopes of the Rumija mountain range (Bilovitz et al. 2008).

Hypogymnia farinacea Zopf: 08 (cor Pic abi)

Note: Previously only known from the Tara river canyon (Žukovec 2005).

Hypogymnia physodes (L.) Nyl.: 07 (bra/cor Que cer), 08 (bra/cor Pic abi), 09 (bra Mal syl), 14 (bra Cra mon), 15 (lig)

Hypogymnia tubulosa (Schaer.) Hav.: 07 (bra Que cer), 08 (bra Pic abi), 09 (bra Mal syl), 14 (bra Cra mon, cor Que cer), 17 (bra Que cer)

Lecania cyrtella (Ach.) Th.Fr.: 06 (bra Pru spi), 07 (bra Que cer), 14 (bra Cra mon)

Note: Previously only known from the Skadar lake (Bilovitz et al. 2008) and from Bjelasica (Bilovitz et al. 2009).

Lecanora allophana Nyl.: 11 (cor Jug reg), 13 (cor Fra exc)

Lecanora carpinea (L.) Vain.: 01 (bra Pyr com), 02 (cor Pru avi), 06 (bra Pru spi), 08 (cor Pic abi), 09 (bra Mal syl), 14 (cor Que cer)

Lecanora chlarotera Nyl.: 02 (cor Pru avi), 06 (bra Cra mon), 08 (cor Pic abi), 09 (bra Mal syl), 13 (cor Fra exc), 14 (bra Cra mon, cor Que cer), 17 (bra Que cer)

Lecanora glabrata (Ach.) Malme: 07 (cor Que cer), 10 (cor Fag syl)

Lecanora subcarpinea Szatala: 04 (cor Pru avi), 06 (bra Cra mon), 07 (cor Que cer), 14 (bra Cra mon), 17 (bra Que cer)

Note: Previously only known from the environs of Žabljak (Bilovitz et al. 2008).

Lecanora symmicta (Ach.) Ach.: 14 (bra Cra mon)

Note: This common species was previously only recorded from the Durmitor National Park (Savi 2001).

Lecidella achrostotera (Nyl.) Hertel & Leuckert: 02 (cor Pru avi), 04 (cor Pru avi), 06 (bra Cra mon, bra Pru spi), 07 (cor Que cer), 09 (bra Mal syl), 10 (cor Fag syl), 11 (cor Jug reg), 14 (bra Cra mon, cor Que cer)

Lepraria lobificans Nyl.: 08 (cor Pic abi), 10 (cor Fag syl), 12 (cor Fag syl), 15 (cor Ace pse)

Lepraria rigidula (de Lesd.) Tønsberg: 01 (cor Pyr com), 03 (cor Pyr pyr)

Note: Previously only known from the Mora a valley S of Monastir Mora a (Bilovitz et al. 2008) and from the Biogradska Gora National Park (Bilovitz et al. 2009).

Lepraria vouauxii (Hue) R.C.Harris: 01 (cor Pyr pyr)

Note: Previously only known from Livari on the northern slopes of the Rumija mountain range (Bilovitz et al. 2008).

Leptogium lichenoides (L.) Zahlbr.: 10 (mus Fag syl, mus-sax), 12 (mus Fag syl), 15 (mus-lig)

Leptogium saturninum (Dicks.) Nyl.: 15 (lig, mus Ace pse)

Lobaria pulmonaria (L.) Hoffm.: 12 (cor/mus Fag syl), 15 (cor Ace pse), 16 (cor Ace pse)

**Loxospora elatina* (Ach.) A.Massal.: 16 (cor Pin nig)

Megalaria laureri (Hepp ex Th.Fr.) Hafellner: 16 (cor Fag syl)

Note: Previously only known from the Biogradska Gora National Park (Bilovitz et al. 2009).

Melanelixia fuliginosa (Fr. ex Duby) O.Blanco et al. subsp. *glabratula* (Lamy) J.R.Laundon: 08 (cor Pic abi)

Melanelixia glabra (Schaer.) O.Blanco et al.: 11 (cor Jug reg)

Melanelixia subargentifera (Nyl.) O.Blanco et al.: 01 (cor Pyr com), 03 (cor Pyr com, cor Pyr pyr), 13 (cor Fra exc), 14 (cor Que cer)

Note: Previously recorded by Murati (1993, as *Melanelia s.*) and Hawksworth et al. (2008), but lacking locality information.

Melanelixia subaurifera (Nyl.) O.Blanco et al.: 02 (cor Pru avi), 06 (bra Cra mon, bra Pru spi), 07 (bra Que cer), 09 (bra Mal syl), 14 (bra Cra mon), 17 (bra Que cer)

Melanohalea exasperata (De Not.) O.Blanco et al.: 07 (bra Que cer), 09 (bra Mal syl), 14 (bra Cra mon, cor Que cer)

Melanohalea exasperatula (Nyl.) O.Blanco et al.: 08 (bra Pic abi), 09 (bra Mal syl), 14 (cor Que cer), 17 (bra Que cer)

**Micarea adnata* Coppins: 08 (cor Pic abi)

Micarea peliocarpa (Anzi) Coppins & R.Sant.: 16 (lig)

Note: Previously only known from Bar (V zda 1968, as *M. violacea*) and from a locality in the Tara river canyon (V zda 1985), which is probably the same as sampling location 16.

Mycobilimbia hypnorum (Lib.) Kalb & Hafellner: 08 (lig Pic abi)

Note: Previously recorded by Murati (1992), but lacking locality information, and from Troglava mountain in the Biogradska Gora National Park (Bilovitz et al. 2009).

Nephroma parile (Ach.) Ach.: 12 (mus Fag syl)

Ochrolechia androgyna (Hoffm.) Arnold: 08 (cor/mus Pic abi)

Note: Previously only known from Livari on the northern slopes of the Rumija mountain range (Bilovitz et al. 2008) and from Biogradsko jezero (Bilovitz et al. 2009).

**Ochrolechia arborea* (Kreyer) Almb.: 07 (cor Que cer), 08 (cor Pic abi)

**Ochrolechia microstictoides* Räsänen: 08 (cor Pic abi), 15 (lig)

Opegrapha varia Pers.: 03 (cor Pyr pyr)

Opegrapha vulgata (Ach.) Ach.: 08 (cor Pic abi)

Note: Previously only known from the environs of Herceg Novi (Servít 1931, as *O. cinerea*) and from the Biogradska Gora National Park (Bilovitz et al. 2009).

Parmelia saxatilis (L.) Ach.: 07 (cor Que cer), 08 (cor Pic abi), 15 (lig)

Parmelia sulcata Taylor: 02 (cor Pru avi), 04 (cor Pru avi, cor Pyr com), 07 (bra/cor Que cer), 09 (bra Mal syl), 11 (cor Jug reg), 13 (cor Fra exc), 14 (bra Cra mon), 15 (lig), 17 (bra Que cer)

Parmelina pastillifera (Harm.) Hale: 14 (cor Que cer)

Parmelina quercina (Willd.) Hale: 09 (bra Mal syl), 14 (bra Cra mon, cor Que cer)

Parmelina tiliacea (Hoffm.) Hale: 07 (cor Que cer), 11 (cor Jug reg), 13 (cor Fra exc), 15 (lig)

Parmotrema perlatum (Huds.) M.Choisy: 12 (bra Fag syl)

Peltigera collina (Ach.) Schrad.: 12 (mus Fag syl)

Peltigera degenii Gyeln.: 07 (mus Que cer)

Peltigera horizontalis (Huds.) Baumg.: 12 (mus Fag syl)

Peltigera praetextata (Flörke ex Sommerf.) Zopf: 07 (mus Que cer), 10 (mus Fag syl), 12 (mus Fag syl), 16 (lig)

Pertusaria albescens (Huds.) M.Choisy & Werner var. *albescens*: 05 (cor Sal), 07 (cor/mus Que cer), 11 (cor Jug reg), 15 (lig)

Pertusaria albescens var. *corallina* auct.: 16 (cor Fag syl)

Pertusaria amara (Ach.) Nyl.: 07 (cor Que cer), 08 (cor Pic abi)

Pertusaria coccodes (Ach.) Nyl.: 16 (lig)

Pertusaria flavida (DC.) J.R.Laundon: 07 (cor Que cer)

Pertusaria leioplaca DC.: 10 (cor Fag syl)

Pertusaria pertusa (Weigel) Tuck.: 16 (cor Fag syl)

Phaeophyscia chloantha (Ach.) Moberg: 01 (cor Pyr com)

**Phaeophyscia nigricans* (Flörke) Moberg: 01 (cor Pyr com), 03 (cor Pyr pyr), 04 (cor Pyr com)

Phaeophyscia orbicularis (Neck.) Moberg: 01 (cor Pyr com), 02 (cor Pru avi), 03 (cor Pyr com, cor Pyr pyr), 04 (cor Pyr com), 06 (bra Cra mon, bra Pru spi), 13 (cor Fra exc), 14 (cor Que cer)

Phlyctis argena (Spreng.) Flot.: 03 (cor Pyr com), 05 (cor Sal), 07 (cor Que cer), 08 (cor Pic abi)

Physcia adscendens H.Olivier: 01 (cor Pyr com), 02 (cor Pru avi), 03 (cor Pyr com, cor Pyr pyr), 04 (cor Pru avi, cor Pyr com), 06 (bra Cra mon, bra Pru spi), 09 (bra Mal syl), 13 (cor Fra exc), 14 (bra Cra mon)

Physcia aipolia (Ehrh. ex Humb.) Fürnr.: 13 (cor Fra exc)

Physcia leptalea (Ach.) DC.: 06 (bra Cra mon), 17 (bra Que cer)

Physcia stellaris (L.) Nyl.: 01 (bra Pyr com), 02 (bra Pru avi), 07 (bra Que cer), 09 (bra Mal syl), 14 (bra Cra mon, cor Que cer)

Physcia tenella (Scop.) DC.: 03 (cor Pyr pyr)

Note: This common species was previously only known from the environs of Herceg Novi (Servít 1931).

Physconia distorta (With.) J.R.Laundon: 11 (cor Jug reg)

**Physconia enteroxantha* (Nyl.) Poelt: 01 (cor Pyr com, cor Pyr pyr), 03 (cor Pyr com, cor Pyr pyr), 04 (cor Pru avi, cor Pyr com), 05 (cor Sal), 13 (cor Fra exc)

**Physconia grisea* (Lam.) Poelt: 03 (cor Pyr pyr), 13 (cor Ace cam)

Physconia perisidiosa (Erichsen) Moberg: 01 (cor Pyr pyr), 03 (cor Pyr pyr), 04 (cor Pru avi), 13 (cor Fra exc)

Note: Previously only known from Livari on the northern slopes of the Rumija mountain range (Bilovitz et al. 2008).

Placynthiella icmalea (Ach.) Coppins & P.James: 07 (mus Que cer)

Note: This common species was previously only known from the environs of Herceg Novi (Servít 1931, as *Lecidea uliginosa* var. *fuliginea*).

Platismatia glauca (L.) W.L.Culb. & C.F.Culb.: 07 (cor Que cer)

Pseudevernia furfuracea (L.) Zopf var. *furfuracea*: 08 (bra Pic abi), 09 (bra Mal syl), 14 (bra Cra mon, cor Que cer), 16 (bra), 17 (bra Que cer)

Pseudevernia furfuracea var. *ceratea* (Ach.) D.Hawksw.: 07 (cor Que cer), 14 (cor Pin nig)

Note: Variety previously only known from Lovćen mountain (Servít 1931, as *Parmelia f.* var. *c.*).

Punctelia subrudecta (Nyl.) Krog: 15 (lig)

Pyrenula nitida (Weigel) Ach.: 10 (cor Fag syl), 12 (cor Fag syl), 15 (cor Fag syl)

Ramalina farinacea (L.) Ach.: 04 (cor Pru avi), 06 (bra Pru spi), 07 (cor Que cer), 08 (cor Pic abi), 11 (cor Jug reg)

Ramalina fastigiata (Pers.) Ach.: 07 (cor Que cer)

Ramalina fraxinea (L.) Ach. var. *fraxinea*: 07 (cor Que cer)

Ramalina fraxinea var. *calicariformis* (Nyl.) Hue: 07 (cor Que cer)

Note: Variety previously only known from Stabljanskih jezero (Kušan 1933).

Ramalina pollinaria (Westr.) Ach.: 13 (cor Fra exc)

Note: This common species was previously only recorded from the Durmitor National Park (Savić 2001) and from the Skadar lake (Bilovitz et al. 2008).

**Rinodina capensis* Hampe: 14 (bra Cra mon)

**Rinodina polysporoides* Giralt & H.Mayrhofer: 09 (bra Mal syl)

**Rinodina pyrina* (Ach.) Arnold: 02 (bra Pru avi), 14 (bra Cra mon)

Additional record: Valley of the river Lim, Brezjojevica northwest of Plav, near Botanical Garden Velemun, 42°36'59,7"N/19°55'34,7"E, c. 920 m, on fence post, 23.VIII.2009, H. Mayrhofer 18112.

Rinodina sophodes (Ach.) A.Massal.: 14 (bra Cra mon)

**Scoliciosporum umbrinum* (Ach.) Arnold var. *corticolum* (Anzi) Bagl. & Carestia: 02 (cor Pru avi), 08 (bra Pic abi), 09 (bra Mal syl), 14 (bra Cra mon)

Usnea filipendula Stirt.: 07 (cor Que cer)

**Xanthoria candelaria* (L.) Th.Fr.: 14 (cor Pin nig)

Xanthoria fallax (Hepp) Arnold: 13 (cor Ace cam, cor Fra exc)

Note: Previously only known from the Durmitor National Park (Manojlović et al. 2000).

Xanthoria parietina (L.) Th.Fr.: 01 (cor Pyr com), 02 (bra Pru avi), 03 (cor Pyr pyr), 04 (cor Pyr com), 06 (bra Cra mon, bra Pru spi), 09 (bra Mal syl), 11 (cor Jug reg), 13 (cor Ace cam, cor Fra exc), 14 (bra Cra mon, cor Que cer)

* *Xanthoria ulophyllodes* Räsänen: 13 (cor Fra exc)

Xylographa parallela (Ach.: Fr.) Behlen & Desberger: 16 (lig)

Note: Previously only known from the northern slopes of the Vasojevi ki Kom in the Komovi mountain range (Bilovitz et al. 2008) and from Bjelasica (Bilovitz et al. 2009).

Lichenicolous fungi

* *Lichenodiplis lecanorae* (Vouaux) Dyko & D.Hawksw.: 02 (on *Caloplaca pyracea*)

* *Teloggalla olivieri* (Vouaux) Nik.Hoffm. & Hafellner: 06 (on *Xanthoria parietina*)

* *Xanthoriicola physciae* (Kalchbr.) D.Hawksw.: 04 (on *Xanthoria parietina*)

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Fig. 1.
Study area and sampling locations.