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Contribution to the lichen flora of Western Ukraine

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ABSTRACT: The paper gives a checklist of 143 lichen species collected from 10 localities in the western part of the Podilya Upland (W Ukraine) during the Podilya 2000 botanical excursion. Eight species are given for the first time for Ukraine: *Chromatochlamys muscorum* (Fr.) H. Mayrhofer & Poelt, *Leproloma diffusum* Laundon, *Thelidium zwackhii* (Hepp) A. Massal., *Verrucaria papillosa* Ach., *Verrucaria procopii* Servit, *Verrucaria subfuscella* Nyl., *Verrucaria sylvatica* (Arnold) Zschacke, *Verrucaria velana* (A. Massal.) Zahlbr. Some other species are reported for the first time for the particular regions. The checklist consists mainly of calciphilous species of limestone and gypsum, growing on rocks and their weathering products. The most conspicuous include the xerothermic species forming the lichen association *Toninio-Psoretum decipientis* Stodieck 1937: *Psora decipiens* (Hedw.) Hoffm., *Fulgensia bracteata* (Hoffm.), *F. fulgens* (Sw.) Elenkin, *Endocarpon pusillum* Hedw., *Catapyrenium squmulosum* (Ach.) Breuss and *Toninia sedifolia* (Scop.) Timdal.

KEY WORDS: lichens, steppe localities, Podilya Upland, W Ukraine

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INTRODUCTION

This paper is a result of the Podilya 2000 botanical excursion of June 3–9, 2000, and it is a contribution to the lichen flora of western part of the Podilya Upland (W Ukraine). The excursion, inspired by Professor Kazimierz Zarzycki of the W. Szafer Institute of Botany, Polish Academy of Sciences in Cracow, continued a tradition of botanical excursions organized to these territories in the nineteenth and twentieth centuries by M. Raciborski and W. Szafer in the company of their students and collaborators. The route through the Lviv, Ternopil, Khmelnytski and Ivano-Frankivsk regions encompasses the following geomorphological units: Woronyaki, Holohory, Medobory-Tovtry, Dniester ravines, Pokuttya and Opilya. One of the main aims of the excursion was to extend knowledge of lichen species diversity at xerothermic stations, representing the steppe vegetation of northern and southern Podilya and Opilya (Zarzycki 2000). These regions are characterized by hilly relief sometimes cut by gullies, and also by a dense river network formed on Tertiary deposits. Carbonate sedimentary rocks, mainly limestone and gypsum, and their weather-

ing products, create suitable sites for lichens. Many interesting terricolous lichens occur mainly on shallow skeletal soils on slopes and hilltops.

Detailed lichenological field studies have not been carried out yet in this region, except in the Medobory Reserve (Kondratyuk 1995; Kondratyuk & Kolomiyets 1997). The data published previously (e.g., Boberski 1885, 1889, 1892) are only of historical significance.

This paper gives a checklist of 143 lichen species collected from 10 visited localities (Fig. 1). Many of these places are sites of especially interesting lichen flora of thermophilous character. The checklist includes 8 lichen species new to Ukraine. Many other species from the checklist are rare even on the scale of the whole of Ukraine (Kondratyuk *et al.* 1998). They grow at very specific sites, and their area is shrinking continuously under the impact of human intervention. Many of them are becoming endangered species.

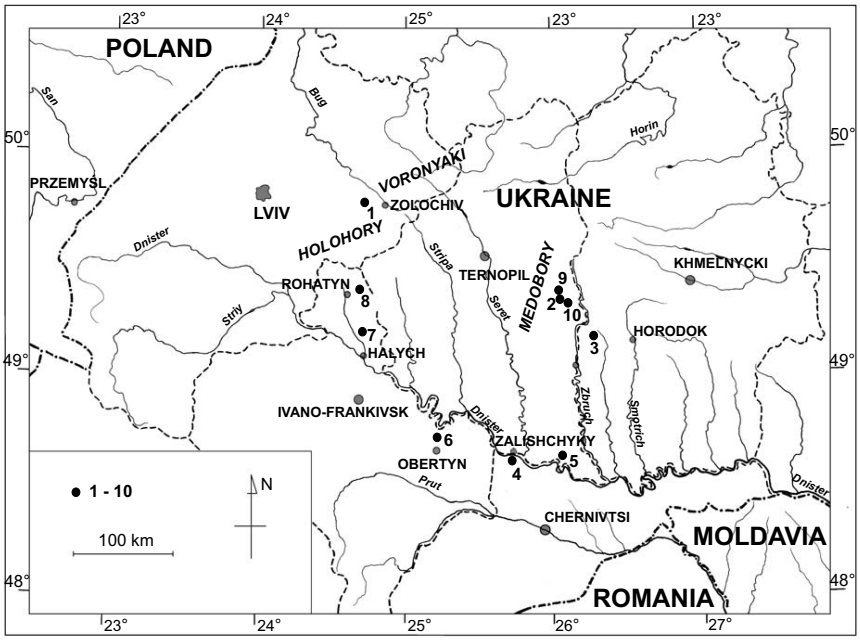

Fig. 1. Distribution of localities investigated (1–10).

List of localities

1. **Holohory**. Lysa Hora, 2 km E Vilshanytsya, Lviv region, Zolochiv district, 49°48′N, 24°43′E, 5.06.2000.

2. **Medobory**. Ostra Skelya near Vikno village, 7 km NE of Hrymayliv, Ternopil region, Husyatyn district, 49°21′N, 26°04′E, 6.06.2000.

3. **Medobory**. Vuz'ka Tovtra near Sataniv, 7 km SE of Sataniv, Khmelnytski region, Horodotsky district, 49°12′N, 26°18′E, 6.06.2000.

4. **Dniester Ravines**. Kryshchatyk, 0.5 km S of Zalishchyky, Chernivtsi region, Zastavnin district, 48°38′N, 25°44′E, 7.06.2000.

5. **Dniester Ravines**. Between Kolodribka and Ustya villages, 10 km NE of Melnytsya Podylska, Ternopil region, Zalishchyky district, 48°39′N, 26°04′E, 7.06.2000.

6. **Pokuttya "stepposa"**. Lysa Hora, village Hrasymiv-Zhabokruky, 7 km Ne of Obertyn, Ivano-Frankivsk region, Tlumach district, 48°45′N, 25°12′E, 8.06.2000.

7. **Opilya**. Kosova Hora near Burshtyn, 11 km N of Halych, Ivano-Frankivsk region, Halych district, 49°13′N, 24°42′E, 8.06.2000.

8. **Opilya**. Chortova Hora, 4 km E Pyratyn near Pukiv, Ivano-Frankivsk region, Rohatyn district, 49°24′N, 24°40′E, 8.06.2000.

9. **Medobory**. Beech wood near Hrymajliv-Sataniv road – 8.5 km SE of Hrymajliv, Ternopil region, Husyatyn district, 49°22′N, 26°05′E, 6.06.2000.

10. **Medobory**. Oak-hornbeam forest near old orchard near Hrymajliv-Sataniv road – 8 km SE of Hrymajliv, Ternopil region, Husyatyn district, 49°20′N, 26°07′E, 6.06.2000.

According to the geobotanical and administrative divisions of Ukraine adopted in the checklist of lichens in Ukraine (Kondratyuk *et al.*, 1998), the above localities belong to the following units: 1 – A5:Lv; 2 – B1:T; 3 – B1:Khm; 4 – B1:Cvi; 5 – B1:T; 6 – A5:I; 7 – A5:I; 8 – A5:I; 9 – B1:T; 10 – B1:T.

List of species

The lichen species are listed in alphabetical order. Nomenclature follows Vězda and Liška (2000); in some cases synonyms are given according to the checklist of lichens in Ukraine (Kondratyuk *et al*. 1998). Each species is characterized by substratum type and locality number. Species new to the particular region are indicated by symbols from the checklist of lichens in Ukraine (Kondryatuk *et al*. 1998). Voucher material is deposited in the herbarium of the W. Szafer Institute of Botany, Polish Academy of Sciences, Cracow (KRAM). Species new to Ukraine are marked "!".

Acarospora cervina A. Massal. – on exposed calcareous rocks: 2, 3.

Acarospora glaucocarpa (Ach.) Koerb. – on exposed limestones: 2, 3; new to B1: Khm, T.

Acrocordia gemmata (Ach.) A. Massal. – as epiphyte on rough bark of trees: 1, 10; new to B1:T.

Amandinea punctata (Hoffm.) Coppins & Scheid. – on bark and wood: 2, 8, 10; new to B1:T.

Arthonia lapidicola (Taylor) Branth & Rostrup – on calcareous rocks: 3, 4; new to B1:Cvi, Khm.

Arthonia spadicea Leight. – as epiphyte on bark of coniferous trees: 1; new to A5:Lv.

Arthothelium ruanum (A. Massal.) Koerb. – as epiphyte on smooth bark of deciduous trees: 1, 9, 10; new to A5:Lv, B1:T.

Aspicilia calcarea (L.) Mudd – on more or less horizontal faces of calcareous rocks: 2, 4, 5, 10; new to B1:Cvi, T.

Aspicilia cinerea (L.) Koerb. – on exposed sandstone rocks: 4; new to B1:(Cvi).

Aspicilia contorta (Hoffm.) Kremp. – on calcareous rocks: 2, 3, 4; new to B1:(Cvi).

Aspicilia moenium (Vain.) Thor & Timdal – on mortar and on steep faces of limestone: 2, 3, 4; new to B1:(Cvi).

Bacidia bagliettoana (A. Massal. & de Not. *in* A. Massal.) Jatta – on mosses and plant debris on calcareous ground: 1, 6, 7; new to A5:I, Lv.

Bacidia rubella (Hoffm.) A. Massal. – as epiphyte on trunks of mature trees with nutrient-rich bark: 1, 10; new to A5:Lv, B1:(T).

Bacidina arnoldiana (Koerb.) V. Wirth & Vezda [*Bacidia arnoldiana* Koerb.] – as epiphyte on bark of *Sambucus nigra*: 1; new to A5:Lv.

Bacidina inundata (Fr.) Vězda – on sandstone rocks; 1, 6; new to A5:I, Lv.

Bacidina phacodes (Koerb.) Vězda – as epiphyte on trunks of mature trees with nutrient-rich bark: 1; new to A5:Lv.

Bagliettoa parmigera (J. Steiner) Vězda & Poelt – on calcareous rocks: 2, 6; new to A5:I, B1:T.

Buellia alboatra (Hoffm.) Th. Fr. [*Buellia epipolia* (Ach.) Mong.] – on calcareous rocks: 2, 3, 4, 5; new to B1:Cvi, Khm, T.

Buellia griseovirens (Turner & Borrer *ex* Sm.) Almb. – corticolous, on smooth bark of deciduous trees: 1, 10; new to A5:Lv, B1:T.

Caloplaca aurantia (Pers.) Hellb. – on exposed calcareous rocks: 2; new to B1:T.

Caloplaca cerina (Ehrh. *ex* Hedw.) Th. Fr. – as epiphyte on nutrient-rich bark of *Fraxinus* sp.: 8; new to A5:I.

Caloplaca citrina (Hoffm.) Th. Fr. – on limestone and gypsum: 2, 4, 6, 10; new to A5:I, B1(Cvi).

Caloplaca coronata (Kremp. *ex* Koerb.) J. Steiner – on calcareous rocks: 2, 3, 4, 5; new to B1(Cvi,T).

Caloplaca decipiens (Arnold) Blomb. & Forssell – on limestone and gypsum: 2, 4; new to B1(Cvi).

Caloplaca holocarpa (Hoffm. *ex* Ach.) A. E. Wade – on limestone and gypsum: 2, 3, 4, 5, 6, 7; new to A5:I, B1(Cvi).

Caloplaca lactea (A. Massal.) Zahlbr. – on exposed limestone and gypsum: 2, 7: new to A5:I, B1:(T).

Caloplaca saxicola (Hoffm.) Nordin – on exposed limestone and gypsum: 2, 3, 5, 6; new to A5:I, B1(T).

Caloplaca teicholyta (Ach.) J. Steiner – on calcareous rocks and mortar: 4, 5; new to B1(Cvi, T).

Caloplaca variabilis (Pers.) Müll. Arg. – on exposed calcareous rocks: 2, 3, 4, 5; new to B1(Cvi, T).

Caloplaca velana (A. Massal.) Du Rietz [*Caloplaca dolomiticola* (Hue) Zahlbr.] – on limestone and gypsum: 2, 3, 4, 5, 6, 7; new to A5:I, B1: Cvi,Khm, T.

Caloplaca xantholyta (Nyl.) Jatta – on exposed limestone and gypsum: 4; new to B1(Cvi).

Candelaria concolor (Dicks.) Stein – as epiphyte on nutrient-rich bark of trees: 6; new to A5:I.

Candelariella aurella (Hoffm.) Zahlbr. – on limestone and gypsum: 2, 3, 4, 5, 6, 7, 8; new to A5:I, B1(Cvi).

Candelariella medians (Nyl.) A. L. Sm. – on calcareous rocks: 2, 3, 6; new to A5:I.

Candelariella xanthostigma (Ach.) Lettau – as epiphyte on bark of deciduous trees: 8, 10; new to A5:(I), B1:(T).

Catapyrenium squamulosum (Ach.) Breuss – on soil on calcareous ground and humus: 1, 4, 5, 7; new to A5:I, Lv, B1:Cvi, T.

Catillaria chalybeia (Borrer) A. Massal. – on calcareous rocks: 4; new to B1:Cvi.

Catillaria nigroclavata (Nyl.) Schuler – as epiphyte on bark of *Quercus* sp.: 10; new to B1:T.

! ***Chromatochlamys muscorum*** (Fr.) H. Mayrhofer & Poelt – on terricolous mosses: 7; new to Ukraine.

Cladonia chlorophaea (Flörke *ex* Sommerf.) Spreng [*Cladonia pyxidata* (L.) Hoffm. subsp. *chlorophaea* (Flörke *ex* Sommerf.) Spreng.] – on soil and bark of trees: 6; new to A5:I.

Cladonia coniocraea auct. – on decaying wood and soil rich in humus: 1, 10; new to A5:Lv, B1:T.

Cladonia fimbriata (L.) Fr. – on rotten wood and bark of trees: 6, 10; new to A5:I.

Cladonia furcata (Huds.) Schrad. – on soil over calcareous rock: 8; new to A5:I.

Cladonia glauca Flörke – on soil: 8; new to A5:I.

Cladonia pyxidata (L.) Hoffm. – on soil over calcareous rocks: 1, 3, 4, 6, 7, 8; new to A5:I, Lv, B1:(Cvi).

Cladonia rangiformis Hoffm. – on calcareous soil: 8; new to A5:I.

Cladonia subulata (L.) Weber *in* F. H. Wigg. – on mineral soil: 6; new to A5:I.

Clauzadea immersa (Hoffm.) Hafellner & Bellem. – on exposed calcareous rocks: 3; new to B1:Khm.

Clauzadea monticola (Schaerer) Hafellner & Bellem. – on exposed calcareous rocks: 4; new to B1:Cvi.

Collema cristatum (L.) Weber *ex* F. H. Wigg. – on calcareous rocks: 3.

Collema fuscovirens (With.) J. R. Laundon – on calcareous rocks: 1, 2, 3, 4; new to A5:Lv, B1:Cvi, Khm, T.

Collema tenax (Sw.) Ach. *em.* Degel. – on calcareous soil: 1, 4: new to A5:Lv, B1:(Cvi).

Dimerella pineti (Ach.) Vězda as epiphyte on bark of *Pinus sylvestris*: 1; new to A5:Lv.

Diploschistes muscorum (Scop.) R. Sant. – on soil over calcareous rock: 7; new to A5:I.

Endocarpon pusillum Hedw. – on calcareous soil: 3, 4, 5, 6, 7; new to A5:I, B1:(Cvi, Khm, T).

Evernia prunastri (L.) Ach. – as epiphyte on low shrubs: 2, 10.

Fulgensia bracteata (Hoffm.) Räsänen – on calcareous and gypsaceous soil and rocks: 4, 5, 6; new to A5:I, B1:Cvi,T.

Fulgensia fulgens (Sw.) Elenkin – on mosses and on soil on calcareous rocks: 6; new to A5:(I).

Graphis scripta (L.) Ach. – as epiphyte on smooth bark of *Fagus sylvatica*: 1, 9, 10; new to A5: Lv.

Hypogymnia farinacea Zopf – as epiphyte on bark of *Pinus sylvestris*: 3; new to B1:Khm.

Hypogymnia physodes (L.) Nyl. – as epiphyte on bark of trees: 2, 3, 6, 10; new to A5:I, B1:(Khm).

Lecania cyrtella (Ach.) Th. Fr. – as epiphyte on bark of *Fraxinus excelsior*: 1, 8; new to A5:I,Lv.

Lecania inundata (Hepp *ex* Koerb.) M. Mayrhofer – on exposed and moist calcareous rocks: 2, 3, 6; new to A5:I, B1:Khm,T.

Lecania naegelii (Hepp) Diederich & P. Boom [*Bacidia naegelii* (Hepp) Zahlbr.] – corticolous on deciduous trees: 2, 8; new to A5:I, B1:(T).

Lecania cfr. ***rabenhorstii*** (Hepp) Arnold – on gypsaceous boulders: 5; new to B1:T.

Lecanora albescens (Hoffm.) Branth. & Rostr. – on exposed limestone and gypsum: 2, 3, 4, 5, 6, 7; new to A5:I, B1:Cvi, Khm, T.

Lecanora carpinea (L.) Vain. – as epiphyte on bark of trees: 2.

Lecanora chlarotera Nyl. – as epiphyte on bark of trees: 8, 10; new to A5:I, B1:T.

Lecanora conizaeoides Nyl. *ex.* Cromb. – as epiphyte on bark of trees: 1, 10; new to A5:Lv, B1:T.

Lecanora crenulata Hook – on limestone and gypsum: 2, 3, 5, 6; new to A5:I.

Lecanora dispersa (Pers.) Sommerf. – on limestone and gypsum: 2, 3, 4, 10; new to B1:(Cvi).

Lecanora expallens Ach. – as epiphyte on bark of trees: 10; new to B1:T.

Lecanora hagenii (Ach.) Ach. – on bark of trees and calcareous and gypsaceous rocks: 5, 7; new to A5:I.

Lecanora muralis (Schreb.) Rabenh. – on limestone and gypsum: 2, 3, 4; new to B1:Cvi.

Lecanora pulicaris (Pers.) Ach. – as epiphyte on bark of trees: 1, 10; new to A5:Lv, B1:T.

Lecanora saligna (Schrad.) Zahlbr. – as epiphyte on bark of *Pinus silvestris*: 1, 2, 3; new to A5:Lv, B1:Khm,T.

Lecanora subrugosa Nyl. – as epiphyte on bark of trees: 8; new to A5:I.

Lecanora symmicta (Ach.) Ach. – as epiphyte on bark of trees: 6; new to A5:I.

Lecidella elaeochroma (Ach.) Choisy – as epiphyte on bark of trees: 1, 2, 8, 9; new to A5:I, Lv.

Lepraria eburnea Laundon – (*det. M. Kukwa*), on calcareous and gypsaceous soil: 7; new to A5:I.

Lepraria elobata Tonsb. – (*det. M. Kukwa*), as epiphyte on bark of trees: 9; new to B1:T.

Lepraria lobificans Nyl. – (*det. M. Kukwa*), on bark of trees, calcareous and gypsaceous soil and on sandstone: 1, 4, 6, 9; new to A5:I, Lv, B1:T.

! ***Leproloma diffusum*** var. cfr. ***diffusum*** Laundon – (*det. M. Kukwa*), on gypsaceous soil: 9; new to Ukraine.

Leproloma diffusum var. ***chrysodetoides*** Laundon – (*det. M. Kukwa*), on gypsaceous soil: 9; new to Ukraine.

! ***Leptogium plicatile*** (Ach.) Leight. – on calcareous rocks: 3; new to B1:Khm.

Lobothallia radiosa (Hoffm.) Hafellner – on calcareous rocks: 2, 3, 4, 5; new to B1:(Cvi).

Melanelia exasperatula (Nyl.) Essl. – as epiphyte on bark of trees: 2, 3, 10.

Melanelia fuliginosa (Fr. *ex* Duby) Essl. [*Melanelia glabratula* (Lamy) Essl. subsp. *fuliginosa* (Duby) J. R. Laundon] – as epiphyte on bark of trees: 1, 9; new to A5:Lv, B1:T.

Melanelia subargentifera (Nyl.) Essl. – as epiphyte on bark of trees: 10.

Melanelia subaurifera (Nyl.) Essl. – as epiphyte on bark of trees: 3.

Micarea peliocarpa (Anzi) Coppins & R. Sant. – on moribund epiphytic bryophytes: 6, 7; new to A5:I.

Mycobilimbia fusca (A. Massal.) Hafellner & V. Wirth – on mosses and on plant debris over calcareous and rocks: 4, 5, 7; new to A5:I, B1:Cvi, T.

Mycobilimbia sabuletorum (Schreb.) Hafellner – on mosses and on plant debris over calcareous and gypsaceous rocks: 2, 4, 5, 9; new to B1:(Cvi).

Opegrapha rufescens Pers. *in* Usteri – as epiphyte on bark of trees: 1; A5:Lv.

Parmelia sulcata Taylor – as epiphyte on trunk and branches of various trees: 2, 6, 7, 8, 10; new to A5:I.

Peltigera didactyla (With.) J. R. Laundon – on mineral soil: 4; new to B1:(Cvi).

Peltigera rufescens (Weiss.) Humb. – on calcareous and gypsaceous soil: 3, 4, 6, 7, 8; new to A5:I, B1:(Cvi).

Phaeophyscia nigricans (Harm.) Moberg – on bark of trees and on limestone and gypsum: 1, 4, 5, 6, 7; new to A5:I, Lv, B1:(Cvi).

Phaeophyscia orbicularis (Neck.) Moberg – on bark of trees and on limestone and gypsum: 1, 2, 3, 4, 5, 6, 7, 8, 10; new to A5:I,Lv, B1:Cvi,Khm,T.

Phlyctis argena (Spreng.) Flot. – as epiphyte on trunk of various trees: 1, 9, 10; new to A5:Lv.

Physcia adscendens (Fr.) H. Oliv. – as epiphyte on trunk and branches of various trees: 2, 6, 7, 8, 10; new to A5:I.

Physcia caesia (Hoffm.) Fürnr. – on limestone and gypsum: 2, 3, 6, 7; new to A5:I, B1:Khm, T.

Physcia dimidiata (Arnold) Nyl. – on calcareous rocks: 6; new to A5:I.

Physcia stellaris (L.) Nyl. – as epiphyte on trunk and branches of various trees: 2, 8; new to A5:I.

Physcia tenella (Scop.) DC. *in* Lam. & DC. – as epiphyte on trunk and branches of various trees: 2, 3, 10; new to B1:(Khm).

Physconia detersa (Nyl.) Poelt – as epiphyte on trunk and branches of various trees: 10; new to B1:T.

Physconia distorta (With.) J. R. Laundon – as epiphyte on trunk and branches of various trees: 10; new to B1:T.

Physconia grisea (Lam.) Poelt – as epiphyte on trunk and branches of various trees: 6; new to A5:I.

Placocarpus schaereri (Fr.) Breuss – on calcareous rocks: 2, 3; new to B1:(T).

Placynthiella icmalea (Ach.) Coppins & P. James [*Saccomorpha icmalea* (Ach.) Clauzade & Cl. Roux] – on soil, plant debris and decaying lignum: 7; new to A5:I.

Placynthiella uliginosa (Schrad.) Coppins & P. James [*Saccomorpha uliginosa* (Schrad.) Hafellner] – on soil, decaying wood and plant debris: 6; new to A5:I.

Placynthium nigrum (Huds.) Gray – on soil and adjacent limestone: 3, 4, 10; new to B1:(Cvi, T).

Placynthium tremniacum (A. Massal.) Jatta [*Placynthium nigrum* (Huds.) Gray] – on calcareous rocks: 2, 6; new to A5:I, B1:(T).

Protoblastenia rupestris (Scop.) J. Steiner – on calcareous rocks: 4, 6; new to A5:I, B1:Cvi.

Pseudevernia furfuracea (L.) Zopf – as epiphyte on trunks and branches of various trees: 1, 3, 9, 10; new to B1:Khm.

Psora decipiens (Hedw.) Hoffm. – on gypsaceous soil: 6; new to A5:I.

Pyrenula nitida (Weigel) Ach. – as epiphyte on bark of *Fagus sylvatica*: 1, 9; new to A5:Lv, B1:T.

Rinodina bischoffii (Hepp) A. Massal. – on calcareous rocks: 2, 3, 4; new to B1:Cvi, Khm, T.

Rinodina pyrina (Ach.) Arnold – as epiphyte on smooth bark of deciduous trees: 2, 7; new to A5:I, B1:T.

Rinodina sophodes (Ach.) A. Massal. – as epiphyte on bark of *Populus tremula*: 10.

Sarcogyne regularis Koerb. – on calcareous rocks: 1, 2, 3, 4, 5, 6, 7, 10; new to A5:I, Lv, B1:Cvi, T.

Scoliciosporum chlorococcum (Graewe *ex* Stenh.) Vězda – as epiphyte on trunks and branches of various trees: 1, 2, 7, 10; new to A5:I, Lv, B1:T.

Staurothele frustulenta Vain. – on calcareous rocks: 4; new to B1:Cvi.

Staurothele rufa (A. Massal.) Zschacke – on gypsum: 7; new to A5:I.

Thelidium decipiens (Nyl.) Kremp. – on calcareous rocks: 4; new to B1:Cvi.

! ***Thelidium zwackhii*** (Hepp) A. Massal. – on calcareous sandstone: 7.

Toninia sedifolia (Scop.) Timdal – saxicolous and muscicolous on calcareous rocks and on calcareous soil: 1, 6; new to A5:I, Lv.

Verrucaria aethiobola Wahlenb. *in* Ach. – on calcareous rocks: 1, 2, 3, 4, 5, 6; new to A5:I, Lv, B1:Cvi,Khm,T.

Verrucaria calciseda DC. – on calcareous rocks: 2, 3, 4, 5, 6; new to A5:I, B1:(Cvi, T).

Verrucaria dolosa Hepp – on calcareous sandstone: 6; new to A5:I.

Verrucaria glaucovirens Grummann – on calcareous rocks: 6; new to A5:I.

Verrucaria muralis Ach. – on calcareous rocks: 1, 2, 3, 4, 5, 6, 7, 10; new to A5:I, Lv, B1:Cvi, Khm, T.

! ***Verrucaria nigrescens*** Pers. – on limestone and gypsum: 1, 3, 4, 5, 6, 10; new to A5:I,Lv, B1:(Cvi).

! ***Verrucaria papillosa*** Ach. var. ***terrestris*** Arnold – on calcareous soil: 1; new to Ukraine.

! ***Verrucaria procopii*** Servit – on calcareous rocks: 2, 3, 4, 5; new to Ukraine.

! ***Verrucaria subfuscella*** Nyl. – on calcareous rocks: 2, 3, 4, 5, 6, 10; new to Ukraine.

! ***Verrucaria sylvatica*** (Arnold) Zschacke – on calcareous rocks: 3; new to Ukraine.

! ***Verrucaria velana*** (A. Massal.) Zahlbr. – on calcareous rocks; 6; new to Ukraine.

Verrucaria viridula (Schrad.) Ach. – on calcareous rocks: 4; new to B1:Cvi.

Xanthoria elegans (Link) Th. Fr. – on limestone and gypsum: 2, 7; new to A5:I.

Xanthoria fallax (Hepp) Arnold – as epiphyte on bark of trees: 6; new to A5:(I).

Xanthoria papillifera (Vain.) Poelt – on calcareous rocks: 2, 3.

Xanthoria parietina (L.) Th. Fr. – on bark of trees and on limestone and gypsum: 1, 2, 3, 6, 7, 8, 10; new to A5:I, Lv.

Xanthoria polycarpa (Hoffm.) Rieber – as epiphyte on bark of trees: 1, 2, 3, 7; new to A5:(I).

Discussion

Of the 143 lichen species found in the western part of the Podilya Upland, 8 were new to Ukraine: *Chromatochlamys muscorum, Leproloma diffusum, Thelidium zwackhii, Verrucaria papillosa, Verrucaria procopii, Verrucaria subfuscella, Verrucaria sylvatica, Verrucaria velana*. The checklist includes taxa new to particular regions, including some of the rarest in Ukraine. They include, for example, *Acarospora glaucocarpa, Arthonia lapidicola, Bacidina inundata, Bagliettoa parmigera, Catapyrenium squamulosum, Clauzadea immersa, C. monticola, Collema fuscovirens, Endocarpon pusillum, Fulgensia bracteata, F. fulgens, Lecania rabenhorstii, Leptogium plicatile, Mycobilimbia fusca, Placocarpus schaereri, Placynthium tremniacum, Psora decipiens, Staurothele frustulenta, S. rufa, Thelidium decipiens, Toninia sedifolia, Verrucaria aetiobola, V. glaucovirens, V. viridula* and *Xanthoria papillifera*.

Undoubtedly the calciphilous species form the biggest group, growing on limestone and gypsum. Various plant communities develop here, depending on slope inclination, exposure, insolation and soil moisture. The group of epilithic, calciphilous lichens occurring here includes, for example, *Acarospora glaucocarpa, Bagliettoa parmigera, Caloplaca auranthia, C. coronata, C. decipiens, C. lactea, Clauzadea immersa, C. monticola, C. teicholyta, C. variabilis, Lobothallia radiosa, Leproloma diffusum, Leptogium plicatile, Placocarpus schaereri, Placynthium tremniacum, Sarcogyne regularis, Staurothele frustulenta, S. rufa, Thelidium decipiens, Verrucaria glaucovirens, V. sylvatica, V. viridula, Xanthoria elegans* and *X. papillifera*. Ubiquitous species including *Candelariella aurella, Lecanora albescens, L. muralis, Lepraria lobificans, Physcia caesia, P. dimidiata, Placynthium nigrum* and *Xanthoria parietina* may be found growing on siliceous rocks, limestone, tree bark or wood.

A significant group is formed of calciphilous terricolous lichens growing on soil and weathered rocks, and also on mosses and plant debris. These include *Bacidia bagliettoana, Cladonia pyxidata,*

Collema tenax, Diploschistes muscorum, Lepraria eburnea, Leproloma diffusum, Peltigera didactyla and *P. rufescens*.

A group of xerothermic lichen species growing on shallow skeletal soils or on gravelly limestone or gypsum form the lichen association *Toninio-Psoretum decipientis* Stodieck 1937. Here belong lichens inhabiting the most xerothermic sites: *Psora decypiens, Fulgensia bracteata, F. fulgens, Endocarpon pusillum, Catapyrenium squamulosum* and *Toninia sedifolia*. Typically developed stations of this association were observed on Pokuttya "stepposa" in Horodysche (station no. 6), where they occurred in mosaics in various xerothermic grassland associations.

Fruticose lichens also grow on limestone and gypsum soils within the xerothermic grassland associations: *Cladonia chlorophaea, C. coniocraea, C. fimbriata, C. furcata, C. glauca, C. pyxidata, C. rangiformis, C. subulata* and others.

Epiphytic lichens were observed in an oak-hornbeam forest (station no. 9), including *Arthotelium ruanum, Graphis scripta, Lecidella elaeochroma, Lepraria elobata, L. lobificans* and *Pyrenula nitida.* A great number of epilithic lichens were found in an old orchard (station no. 10). Here grow *Acrocordia gemmata, Amandinea punctata, Bacidia rubella, Catillaria nigroclavata, Evernia prunastri, Phaeophyscia orbicularis, Physcia tenella, Physconia detersa, P. distorta, Rinodina sophodes* and others. Scattered lichen species such as *Bacidia naegeli, Bacidina arnoldiana, B. phacodes, Dimerella pineti, Hypogymnia farinacea, Lecania cyrtella, Lecanora subrugosa, Melanelia exasperatula, M. suaurifera, Opegrapha rufescens, Pseudevernia furfuracea* and *Rinodina pyrina* were also noted on trees and shrubs growing in the vicinity of xerothermic grasslands and on roadside trees.

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