Теоретичні та прикладні питання

Contribution to lichen flora of Ukrainian Carpathians

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COPPINS B.J., KONDRATYUK S.YA., KHODOSOVTSEV A.YE., ZELENKO S.D., WOLSELEY P.A.. 2005: **Contribution to lichen flora of Ukrainian Carpathians**. *Chornomor. Botan. Journ.*, vol. 1, № 2: 05-23.

Data on 55 lichen species (namely *Absconditella lignicola* Vězda & Pišut, *Agonimia tristicula* (Nyl.) Zahlbr., *Anisomeridium polypori* (Ellix et Everh.) M.E. Barr, *Arthopyrenia salicis* A. Massal., *Arthonia ilicina* Taylor, *A. vinosa* Leight., *Bacidia circumspecta* (Nyl. ex Vainio) Malme, *Biatora chrysantha* (Zahlbr.) Printzen, *B. epixanthoides* (Nyl.) Diederich, *Catillaria alba* Coppins & Vězda, *C. erysiboides* (Nyl.) Th. Fr., *Cladonia norvegica* Tønsberg & Holien, *Diploschistes gypsaceus* (Ach.) Zahlbr., *Eopyrenula avellanae* Coppins, *Fellhanera subtilis* (Vězda) Diederich & Sérusiaux, *Fuscidea arboricola* Coppins & Tønsberg, *F. cyatoides* (Ach.) V. Wirth & Vězda var. corticola (Fr.) Kalb, *F. pusilla* Tønsberg, *Ropalospora viridis* (Tønsberg) Tønsberg, *Jamesiella anastomosans* (P. James & Vězda) Lücking, Sérusiaux & Vězda, *Hypocenomice caradocensis* (Leighton ex Nyl.) P. James & G. Schned., *H. xanthococca* (Sommerf.) P. James & G. Schneider, *Lecania cyrtellina* (Ach.) Th. Fr., *Lecanora cinereofusca* Magnusson, *L. farinaria* Borrer in Hook., *Lecidea swartzioidea* Nyl., *Lepraria lobificans* Nyl., *L. rigidula* (B. de Lesd.) Tønsberg, *Leproloma vouauxii* (Hue) J.R. Laundon, *Leptogium teretiusculum* (Wallr.) J.R. Laundon, *Leptorhaphis maggiana* (A. Massal.) Korber, *Megalaria pulverea* (Borrer) Hafellner & E. Schreiner, *Micarea adnata* Coppins, *M. hedlundii* Coppins, *M. melaeniza* Hedl., *M. nigella* Coppins, *M. peliocarpa* (Anzi) Coppins & R. Sant., *Mycoblastus sterilis* Coppins & P. James, *Microcalicium ahlneri* Tibell, *Ochrolechia szatalensis* Verseghy, *Pertusaria pupillaris* (Nyl.) Th. Fr., *Phaeophyscia endophoenicea* (Harm.) Moberg, *Ph. hirsuta* (Mereschk.) Moberg, *Physcia vitii* Nadv., *Porina leptalea* (Durieu & Mont.) A.L. Sm., *Ramonia chrisophaea* (Pers.) Vězda, *Reichlingia leopoldii* Diederich & Scheidegger, *Rinodina griseosoralifera* Coppins, *R. efflorescens* Malme, *Telocarpon strasseri* Zahlbr., *Shismatomma ricasolii* (A. Massal.) Egea, *Trapelia corticola* Coppins & P. James, *Trapeliopsis pseudogranulosa* Coppins & P. James, *Vezdaea aestivalis* (Ohl.) Tsch.-Woess & Poelt, *Zamenhofia hibernica* (P. James & Swinscow) Clauz. & Roux) found in the territory of the recently created Uzhansky National Nature Park, Ukrainian part of the 'Eastern Carpathian' Trilateral Biosphere Reserve, which for the first time recorded for the whole Ukraine or Eastern Carpathians, are provided. Each taxon is provided by references on papers where full diagnosis is published, list of localities, taxonomical remarks and data on general distribution.

Keywords: lichens, distribution, Ukrainian Carpathians
Ключові слова: лишайники, поширення, Українські Карпати

Introduction

Within three-year special study of the lichen-forming, lichenicolous and allied fungi of the recently created Uzhansky National Nature Park (N.N.P.), Ukrainian part of the 'Eastern Carpathian' Trilateral Biosphere Reserve (TBR), 503 species belonging to 145 genera and 61 families are found. Totally more than 300 lichen species were for the first time recorded for the territory of the Uzhansky N.N.P. [КОНДРАТЮК та ін. 1998; COPPINS et al. 1998; KONDRATYUK et al., 1998; KONDRATYUK & COPPINS 1999 a, b; KONDRATYUK, COPPINS, 2000]. Totally about 18% of them, i.e. 93 species are for the first time recorded for the whole

Чорномор. ботан. журн., 2005, Т. 1, № 2: 05-23.

Ukraine. The aim of this paper is to provide data on 55 lichen species newly recorded for the whole or Eastern Carpathians (see also KONDRATYUK et al. 2003) Ukraine. Each taxon is provided by references on papers where full diagnosis is published, list of localities, taxonomical remarks and data on general distribution.

The peculiarity of the situation with Uzhansky N.N.P. is connected with that it is one of the best studied in lichenological respect protected territory of the Eastern Carpathians while it is one of the most recent formation among territories mentioned of this region (created only in 1999). In this connection the Uzhansky N.N.P. has favourable conditions for organizing of monitoring on its territory [KONDRATYUK, COPPINS, 2000].

Survey area

Uzhansky National Nature Park (NNP) is situated in the Eastern Beskydy Mts. on the border of Ukraine with Poland and Slovakia. It was created with its present borders in 1999. The park covers the right-bank part of the Uzh river basin, from village Zabrod' to Uzhok pass. On the west the park border lies as the frontier with Slovakia (28 km) passes. on the north – as the frontier with Poland (30 km). The park area lies between 208 m and 1304 m a.s.l. [STOYKO et al., 1998]. The geological basis of the park area is made up+ of the Upper Cretaceous and Palaeogenic Flysch deposits. The relief of mountains ridges was formed mainly by denudation of local geological structures. Its most striking feature is steep-sided slopes. Within the borders of the park four denudational levels can be considered namely: lower riverside, upper riverside, subpolonyny and polonyny. On the polonyny denudation level the highest summits lie – Kremenetz' (1221 m), Ravka (1304 m), Stinka (1212 m). The park area lies within two thermal zones: moderate humid (350-800 m) where the sum of active temperatures is higher than 10 is 1800-2000°C; fresh humid (800-1300 m), where such amount is equal to 1400-1800°C [АНДРИАНОВ, 1968]. Uzhansky NNP lies in the drainage area of the Uzh river. Vegetation of the park is typical for the Beskydy Mts., within altitudes 350-1100 m a broad vegetational belt of beech forests prevail – *Fagetum sylvaticae, Acereto-Fagetum, Sorbeto-Aceretum*. Above the belts of the beech forests and green alder shrubs till the highest tops the vegetations belt of subalpine meadows is spreaded [STOYKO et al., 1998].

Materials and Methods

Seven Darwin Expeditions to the Uzhansky NNP were carried out in June, July-August, and September-October 1997 as well as May-June, July-August and September 1998 respectively. The lichen-forming, lichenicolous fungi and allied fungi species associated with the Red Data Book lichen species *Lobaria pulmonaria* (L.) Hoffm. were collected and registered during excursions to the territory of Novostuzhytsia, Zornava, Stavne and Kostryno forestris, and the Velyky Berezny collective farm forestry. The specimens of a reported species kept in E and KW.

Abbreviations to the collectors are the following: BJC – B.J. Coppins, CA – A. Coppins, CS – C. Scheidegger, JH – J. Hermannson, IK – I. Kaprusj, KA – A.Ye. Khodosovtsev, KNS – N.S. Kondratyuk, KS – S.Ya. Kondratyuk, LAA – A.A. Levanetz, MOG – O.G. Maryskevich, PAW – P.A. Wolseley, RAA – O.O. Redchenko, TLO – L.O. Tasenkevich, ZSD – Zelenko S.D.

List of taxa

1. **Absconditella lignicola** Vězda & Pišut

Description: VĚZDA, PIŠUT, 1984.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, S of Kostrino village, 'Yasynny' ridge, a. 1000 m alt., 26.09.1997, *KS, KA, ZSD* (9834) (KW).

Distinguished from *Dimerella pinetii* by the absence of *Trentepohlia* as photobiont, etc.

General distribution: Europe (from British Isles, France, and Portugal to Estonia, Lithuania, Slovakia) and North America.

2. **Agonimia tristicula** (Nyl.) Zahlbr.

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry (the former Stavne forestry) distr. 5, area 3, Mt Cheremkha, a. 1060 m alt., 49°02'N, 22°41'E, old beech forest at NE slope to village Lyuta side with *Lobaria,* on bark of *Fagus sylvatyca,* 4.08.1997, *KS, BJC et al.,* (SW of tag 2056) (E); Novostuzhytzia forestry, ridge unnamed between 'Sukha Potochyna' and 'Husariv' Sreams, distr. 15 (13), over mosses on old *Fagus sylvatyca*, 2.10.1997, *KS, KA, ZSD,* (tag 2106) (KW); Velykoberezny collective farm forestry, Mt Stinka, 1057 m alt., 49°00'N, 22°31'E, near the border with Slovakia, on sandstone, 5.08.1997, *BJC, AC, KA* (loc. 9757) (KW). AR Crimea [ХОДОСОВЦЕВ, 2002а,б, 2003; ХОДОСОВЦЕВ, РЕДЧЕНКО, 2002].

This species distinguished from *Agonimia allobata* by minutely squamulose thallus (0,1-1,0 x 0,1-0,3 (-0,5) mm across), 1-2 spores per ascus and their much larger size (60-) 80 – 120 (-150) μm. All specimens studied were sterile.

General distribution: This lichen is widespread in central, western and southern Europe, and is also known from Macaronesia, North America and the Philippines; it also occurs in the Alps, and has a mainly western distribution in Europe [DEGELIUS, 1992; NIMIS, 1993].

3. **Anisomeridium polypori** (Ellix et Everh.) M.E. Barr

Syn. *Anisomeridium nyssaegenum* (Ellis & Everh.) R.G. Harris

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Kostrino forestry, distr. 21, area 2, botanical reserve, 'German' Stream, at the bottom of valley, on bark of *Corylus avellanae*, 48°55'N, 22°34'E, alt. 350 m, *KS, BJC*, 29.07.1997 (loc. 9742) (E, KW); areas 20 and 23, 11.07.1998 KS (tag 2249); Bystrytske forestry, between villages Chornoholovka and Lyuta, 7-8 km NE from village Chornoholovka, valley of Lyutyanka River, distr. 22, a. 350 m alt., on bark of *Acer platanoides*, 6.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (KW) (tag 2191); distr. 19, a. 290 m alt., on bark of *Fraxinus,* 6.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (tag 2195) (KW); Lyutyanske forestry, SW of Lyuta village, distr. 15, 'Shyroky' Stream, on bark of *Acer pseudoplatanus,* 5.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (tag 2182) (KW).

The species of the genus *Anisomeridium* related to *Arthopyrenia*, but first genus has cellular perithecial wall which not containing bark cells, ascospores without perispore, etc. Some specimens of the genus *Anisomeridium* are in need of the further studying because they were found with pycnidia only.

General distribution: It is known in Europe (Norway, England, Denmark, Austria, Lithuania) Macaronesia, North Ameria Asia (Japan), and Australia.

4. **Arthonia ilicina** Taylor

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, at the bottom of the valley, 'Semeniv'-'Sokoliv' Stream, 49°03'N, 22°35'E, a. 470 m alt., on bark of *Fraxinus*, 30.07.1997, *KA, CA, ZSD* (E).

This species is characterized by (4-)5-6(-7) – septate spores, 26-36 x 10-13 μm, concolorous hypothecium and red-brown epithecium (K+ greenish).

General distribution: Europe, North America, Macaronesia, South Africa and Tasmania.

5. **Arthonia vinosa** Leight.

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Lyutyanske forestry, 'Rakivska yama', SW of Lyuta village, distr. 20, 1050 m alt., on bark of *Acer pceudoplatanus*, 4.06.1998, *KS, BJC, ZSD, RAA, LAA* (tag 2171, loc. 9841); to E of 'Rakivska yama', SW of Lyuta village, distr. 20, 1050-1150 m alt., N, NNE slopes, beech-sycamore forest, on bark of *Fagus*, 4.06.1998, *KS* (loc. 9843); Lyutyanske forestry, SW of Lyuta village, distr. 18, 'Mashyn' Stream, 615-620 m alt., on bark of *Fagus*, 5.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (tag 2178).

From *Arthonia didyma* with fleck-like apothecia and growing mainly on smooth bark this species differs in the convex apothecia up to 140 μm tall and habitat on rough bark.

General distribution: Europe, Asia (Japan), North America and New Zealand.

6. **Arthopyrenia salicis** A. Massal.

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Kostrino forestry, distr. 21, area 2, botanical reserve, 'German' Stream, at the bottom of valley, on *Fagus* branch, 48°55'N, 22°34'E, alt. 350 m, *KS, BJC* et al., 29.07.1997, (loc. 9742) (E, KW); Novostuzhytzia forestry (the former Stavne forestry) distr. 5, area 3, Mt Cheremkha, a. 1060 m alt., 49°02'N, 22°41'E, old beech forest at NE slope to village Lyuta side with *Lobaria,* on bark of *Fagus* branch*,* 4.08.1997, *KS, BJC et al.* (E).

The facultatively lichenized species related with *Naetrocymbe punctiformis* but differ by lacking pseudoparaphyses and possessing unbranched periphysoids 7-15 x 1-1,5 μm.

General distribution: Europe (British Isles, France, Iberian Peninsula and Balearic Islands) and North America.

7. **Bacidia circumspecta** (Nyl. ex Vainio) Malme

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, ridge 'Yasynny', distr. 4 (20), on bark of *Fagus*, 26.09.1997, *KS, KA, ZSD* (KW); Velyky Berezny collective farm forestry, Mt Stinka, at the bottom of Mt, on bark of *Fagus*, 5.08.1997, *BJC, CA, KA* (loc. 9757).

It differs from *Bacidia subincomta* by much shorter ascospores 20-30 x 2-2,5 μm, pale coloured to colourless hypothecium and from other species by K+ green epithecium and non-acicular short ascospores.

General distribution: It is rarely collected species: Europe (Great Bretain, Austria), Asia (Turkey), North Africa (Morocco), and North America.

8. **Biatora chrysantha** (Zahlbr.) Printzen

Syn.: *Lecidea gyrophorica* Tønsberg

Description: TØNSBERG, 1992; PRINTZEN, 1995.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry (the former Stavne forestry) distr. 5, area 3, Mt Cheremkha, alt. 1060 m alt., 49°02'N, 22°41'E, old beech forest at NE slope to Lyuta village with *Lobaria,* on *Fagus,* 4.08.1997, *KS, BJC et al.,* (tag 2039) (E, KW); Novostuzhytzia forestry, ridge unnamed between 'Sukha Potochyna' and 'Husariv' Sreams, distr. 15 (13), on *Fagus,* 27.09.1997, *BJC, KS et al.* (tags 2066, 2072) (KW); on *Fagus*, 2.10.1997, *KS, KA, ZSD* (tags 2105, 2113) (KW); distr. 14 (15), 1000 m alt., on *Fagus*, 30.05.1998, *KS, BJC, PAW, CS, JH, KA, ZSD* et al. (tag 2150; loc. 9833); Novostuzhytzia forestry, distr. 2 area 10, near Mt Semenova, sycamore-beech forest with *Lobaria*, on *Acer pseudoplatanus*, 28.07.1997, *KS* et al. (loc. 9741, tag 2008); Lyutyanske forestry, 'Rakivska yama', SW of Lyuta village, distr. 20, 1050 m alt., on *Acer pseudoplatanus*, 4.06.1998, *KS, BJC, ZSD, RAA, LAA* (tag 2171; loc. 9841).

The specimens collected were sterile. The pale greenish soralia with C+ red reaction distinguish this species from the other (see note to *Bacidia epixantoides*).

General distribution: This species is hitherto known from northern and northwestern Europe and North America.

9. **Biatora epixanthoides** (Nyl.) Diederich

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry (the former Stavne forestry) distr. 5, area 3, Mt Cheremkha, a. 1060 m alt., 49°02'N, 22°41'E, old beech forest at NE slope to village Lyuta with *Lobaria,* on *Fagus,* 4.08.1997, *KS, BJC et al.* (tag 2047) (E); Novostuzhytzia forestry, ridge unnamed between 'Sukha Potochyna' and 'Husariv' Sreams, distr. 15 (13), on old stamp of *Fagus*, 2.10.1997, *KS, KA, ZSD* (KW); Novostuzhytzia forestry, ridge unnamed between 'Sukha Potochyna' and 'Husariv' Streams, distr. 14 (15), on *Acer platanoides*, 6.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (9833; tag 2152); Lyutyanske forestry, SW of Lyuta village, distr. 18, 'Mashyn' Stream, 615-620 m alt., on *Acer psevoplatanus*, 5.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (loc. 9844); Bystrytske forestry, between villages Chornoholovka and Lyuta, 3-5 km NE from village Chornoholovka, valley of Lyutyanka River, distr. 19, a. 290 m alt., on *Acer pseudoplatanus*, 6.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (9846; 2187).

Fertile specimens of this sorediate species were collected during our study. The grey-green thallus with effuse, often confluent, pale buff soralia with negative test on chemical examination are main characters of this species. Morphologically similar species *Lecidea efflorescens* has soralia Pd+ red reaction and *Biatora chrysantha* has soralia C+ red.

General distribution: Europe (Luxembourg, Slovakia) and North America.

10. **Catillaria alba** Coppins & Vězda

Description: VĚZDA, 1993.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, between willages Stavne an Lubnya, Stavne forestry, distr. 26, area 1, in the upper part of ridge near Lyskovets Stream, on *Abies,* 3.08.97, *BJC, KS, ZSD & PAW* (loc. 9749) (KW, E); Novostuzhytzia forestry, distr. 17, area 19, 'Senychiv' Stream, in the upper part of mountain, old beech forest with *Lobaria* near areas 11 and 15, on *Abies*, 24.06.1997, *KS* (KW) (loc. 9729).

It is very characteristic species with thin grey green continuous thallus in contrast white small dispersed apothecia to 0,1 mm diam. in cracks of *Abies*.

General distribution: It was recently described species and hitherto known from Great Britain, Germany, Austria, Italy, Czech Republic, Poland and Slovakia.

11. **Catillaria erysiboides** (Nyl.) Th. Fr.

Description: COPPINS, 1983.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Volosyanske forestry, 'Adamiv Forest', distr. 22 (area 1), SW of Tykhy village, plantation of *Abies*, 600-850 m alt., on *Abies*, 2.06.1998, *KS, BJC, PAW, JH, RAA, LAA* (loc. 9836) (E); S of Kostrino village, 'Yasynny' ridge, a. 1000 m alt., 26.09.1997, *KS, KA, ZSD* (9834) (KW).

It is very similar to *Micarea prasina*, but *Catillaria erysiboides* has non-micareoid photobiont. It has small, plane to convex, reddish brown apothecia that are marginate when young, the exipulum is composed of much-branched, radiating hyphae which are distinct in K but still tightly bound by the gel matrix, and the spores are ovoid and often constricted at the septum, 1-septate with the upper cell usually enlarged and globose, 8-9,5 x 3-5 μm [COPPINS, 1983].

General distribution: In Europe it has dispersed distribution with limited by few locations from Norway, Finland, and Portugal, Italy to Russia.

12. **Cladonia norvegica** Tønsberg & Holien

Description: TØNSBERG, HOLIEN, 1984.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Volosyanske forestry, 'Adamiv Forest', distr. 22 (area 1), SW of Tykhy village, plantation of *Abies*, 600-850 m alt., on wood, 2.06.1998, *KS, BJC, PAW, JH, RAA, LAA* (9836) (KW).

This species is closely related to *Cladonia macilenta* and differs by thalli with finely divided basal squamules with a reddish medulla and superficial red spots, K+ purpule [PURVIS et al., 1992].

General distribution: Europe (Norway, Sweden, Finland, Great Britain, Austria, Switzerland, Italy, Czech Republic, Poland, Lithuania, and Slovenia), Madeira, Asia (Russia, Japan), North America (Alaska, Washington, British Columbia, Newfoundland).

13. **Diploschistes gypsaceus** (Ach.) Zahlbr.

Description: LUMBSCH, 1989.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Velykoberezny collective farm forestry, Mt Stinka, 1057 m alt., 49°00N', 22°31E', near the border with Slovakia, at the forest edge, on sandstone, 5.08.1997, *BJC, CA, KA* (loc. 9757) (KW). AR Crimea [ХОДОСОВЦЕВ,1999].

This species grows in shaded situation on vertical calciferous rocks and is characterized by densely pruinose greyish white thallus with urceolate apothecia and colourless hypothecium.

General distribution: It has cosmopolite distribution.

14. **Eopyrenula avellanae** Coppins

Description: COPPINS et al. 1992

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Kostrino forestry, distr. 21, area 2, botanical reserve, 'German' Stream, at the bottom of valley, on *Corylus avellanae*, 48º55'N, 22º34'E, alt. 350 m, *BJC*, *KS* et al., 29.07.1997 (loc. 9742) (E).

Recently described species with involucrellum outwardly spreading and 3-septate spores. Easily mistaken in the field for *Arthopyrenia* species or *Pyrenula coryli*. The latter has ascospores with markedly lens-shaped lumina [PURVIS et al., 1992].

General distribution: In Europe was hitherto collected from W. Britain, N. Ireland and France.

15. **Fellhanera subtilis** (Vězda) Diederich & Sérusiaux

Description: VĚZDA, 1986.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, 'Yasynny' ridge, 1060 m alt., 49º05N', 22º34E', old sycamore-beech forest with *Lobaria,* on *Fagus*, 1.08.1997, *BJC, KS, PAW & ZSD* (tag 2029) (E, KW).

The species was collected with picnidia only. Differs from sterile *Bacidia* species by picnidia with gapping ostiole and pyriform conidia 3-4 x 1,3-1,7 µm. It was collected together with *Fellhanera gyrophorica* with K+ (purple) picnidia [SÉRUSIAUX et al., 2001].

General distribution: Europe (Norway, Finland, Denmark, Belgium, Netherlands, Poland, Lithuania, Italy), North America).

16. **Fuscidea arboricola** Coppins & Tønsberg

Description: TØNSBERG, 1992; PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Kostrino forestry, distr. 21, area 2, botanical reserve, 'German' Stream, at the bottom of valley, on *Abies*, on *Fagus*, 48°55'N, 22°34'E, c. 350 m, 29.07.1997, *KS*, *BJC et al.* (loc. 9742) (E); Novostuzhytzia forestry, 'Kamyanysty' ridge, 910-960 m alt., 49°04'N, 22°36'E, sycamore-beech forest with *Lobaria,* on *Acer pseudoplatanus,* 30.07.1997, *KS, BJC, PAW* (loc. 9744,

tag 2022) (E); Stavne forestry, distr. 26, area 1, in the upper part of ridge near Lyskovets Stream, on *Fagus,* 3.08.97, *KA, CA, ZSD* (loc. 9749) (E); Novostuzhytzia forestry, ridge unnamed between 'Sukha Potochyna' and 'Husariv' Sreams, distr. 15 (13), on *Fagus,* 27.09.1997, *BJC, KS et al.* (tags 2072) (KW). AR Crimea [COPPINS et al., 2001].

This sorediate species has discrete and delimited soralia at thallus edges, which from Pd+ becoming red.

General distribution: The species was hitherto collected from Europe (Scandinavia, Iceland, North Scotland, Switzerland, Austria, Slovenia, Slovakia, Lithuania), North America.

17. **Fuscidea cyatoides** (Ach.) V. Wirth & Vězda var. **corticola** (Fr.) Kalb

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, 'Kamyanysty' stream, distr. 4 (?), 580 m alt., on *Fagus*, 6.10.1997, *KS, ZSD* (loc. 97107) (KW).

It differs from *Fuscidea arboricola* by the rimose-cracked, rarely sorediate thallus with apothecia.

General distribution: Europe (Norway, Denmark, Spain, Czech Republic), Asia (Turkey, Japan).

18. **Fuscidea pusilla** Tønsberg

Description: TØNSBERG, 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, distr. 2, area 10, near Mt Semenova, sycamore-beech forest with *Lobaria*, on *Fagus*, 28.07.1997, *KS, BJC et al.* (tag. 2002, loc. 9741) (E, KW); distr. 5, area 3, Mt Cheremkha, alt. 1060 m alt., 49°02'N, 22°41'E, old beech forest at NE slope to village Lyuta side with *Lobaria*, on *Fagus,* 4.08.1997*, KS, BJC et al.* (E, KW); vicinity of village Zhornava, 'Parashynsky' Stream, Zhornava forestry, distr. 4, on *Fagus*, 1.10.1997, KS, KA, ZSD (2092) (KW); Stavne forestry, distr. 26, area 1, in the upper part of ridge near Lyskovets stream, on *Fagus*, 3.08.97, *KS, BJC, ZSD, PAW* (E).

This is sterile sorediate crustose lichen with similar morphology to *Ropalospora viridis*, but this species is usually much lager and more intensely green [TØNSBERG, 1992]. The TLC need for correct identification. There is divaricatic acid present in *Fuscidea pusilla*, in contrast to perlatolic acid in *Ropalospora viridis*.

General distribution: Europe (Spain, Switzerland, Austria, Slovenia, Poland, Estonia, Lithuania), North America.

19. **Ropalospora viridis** (Tønsberg) Tønsberg

Syn.: *Fuscidea viridis* Tønsberg

Description: TØNSBERG, 1992; PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Uzhok pass, near the border with Lviv oblast, *Picea* forest with young *Carpinus betulus,* alt. 900 m, on *Fagus sylvatyca*, 27.07.1997, *KS, BJC et al.* (loc. 9737) (KW); Novostuzhytzia forestry (the former Stavne forestry) distr. 5, area 3, Mt Cheremkha, 1060 m alt., 49°02N', 22°41E', old beech forest at NE slope to village Lyuta with *Lobaria*, on *Fagus*, 4.08.1997, *KS, BJC et al.* (tag 2031) (KW); vicinity of Stuzhytzia village, 'Zhyduvsky' Stream, Velykoberezny collective farm forestry, distr. 7, on *Fagus*, 29.09.1997, *KS, BJC et al.* (tag 2084) (KW); vicinity of village Zhornava, 'Parashynsky' Stream, Zhornava forestry, distr. 4, on *Fagus*, 1.10.1997, *KS, KA, ZSD* (tag 2092); vicinity of village Zhornava, location 'Holanya', Zhornava forestry, distr. 10, on *Fagus*, 4.10.1997, *KS, BJC et al.* (KW) (tag 2127); Vicinity of village Zhornava, 'Parashynsky' Stream, Zhornava forestry, distr. 4, 375 m alt. 1.10.1997, *KS, KA, ZSD* (tag 2092) (KW); Stuzhansky ridge, frontier posts 68 and 69, 1070-1160 m alt., 25.06.1998, *KS, MOG, TLO, IK* (9856, tag 2217) (KW).

Material collected in Ukraine was sterile. This is very characteristic species with greyish green thallus (10-20 mm diam.), distinct brown prothallus, green soralia and negative chemical tests (Pd-, K-, C, -, KC-).

General distribution: Europe (Norway, Sweden, Netherlands, Germany, Portugal, Poland, Lithuania, Estonia, Slovenia), North America.

20. **Hypocenomice caradocensis** (Leighton ex Nyl.) P. James & G. Schned.

Description: TIMDAL, 1984.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Uzhok pass, near the border with Lviv oblast, *Picea* forest with young *Carpinus betulus*, on stump, 27.07.1997, *KS, BJC et al.* (loc. 9737) (KW); Kostrino forestry, distr. 21, 'Yavornyk' ridge, at the upper timberline, sycamore-beech forest with *Lobaria*, on stump, 26.09.1997, *KS, KA, ZSD* (KW).

This is a esorediate crustose sterile lichen. It differs from the non-sorediate *Hypocenomice praestabilis* by squamulose thallus and negative tests on K, C and Pd.

General distribution: It is known from atlantic-subatlantic Europe (Portugal, Spain, Germany, Lithuania), Alps (Slovenia) and Carpathians (Czech Republic, Slovakia).

21. **Hypocenomyce xanthococca** (Sommerf.) P. James & G. Schneider

Description: TIMDAL, 1984.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Uzhok pass, near the border with Lviv oblast, *Picea* forest with young *Carpinus betulus*, on stump, 27.07.1997, *KS, BJC et al.* (KW).

General distribution: Europe.

22. **Jamesiella anastomosans** (P. James & Vězda) Lücking, Sérusiaux & Vězda

Syn.: *Gyalideopsis anastomosans* P. James & Vězda

Description: PURVIS et al., 1992, LÜCKING et al., 2005.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Kostrino forestry, distr. 21, area 2, botanical reserve, 'German' Stream, at the bottom of valley, on young trees by stream, 48°55'N, 22°34'E, c. 350 m, 29.07.1997, *KS, BJC et al.* (loc. 9742) (E).

The presence a thin hyphophores to 0,1 mm long on filmy, continuous, skin-like thallus are main distinguishing characters from other European species.

General distribution: Europe (British Isles, Spain, France, Belgium, Norway, Lithuania), Canary Islands.

23. **Lecania cyrtellina** (Ach.) Th. Fr.

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, 'Kamyanysty' ridge, 910-960 m alt., 49°04'N, 22°36'E, sycamore-beech forest with *Lobaria*, on *Acer pseudoplatanus*, 30.07.1997, *KS, BJC, PAW* (E, KW) (loc. 9744, tag 2021); Novostuzhytzia forestry, 'Yasynny' ridge, 1060 m alt., 49°05'N, 22°34'E, old sycamore-beech forest with *Lobaria*, on *Acer*, 1.08.1997, *KS, BJC, PAW, ZSD* (E, KW); near Stavne village, 48°59'N, 22°43'E, alt. 350 m, on *Acer pseudoplatanus*, 27.07.1997, *KS, BJC et al.* (E).

The species is closely related to *Lecania cyrtella*, but distinguishing by much narrower ascospores and not association with *Xanthorion* communities.

General distribution: It has local distribution in Europe (Belgium, Poland, Slovakia, Slovenia, Majorca), Canary Islands and North America.

24. **Lecanora cinereofusca** Magnusson

Non *Lecanora cinereofusca* Motyka

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, at the bottom of the valley, Streams 'Bystry' et 'Kamyanysty', distr. 5/6, on *Fagus,* 01.08.1997, *CA, KA* (KW) (near tag 2041).

This species can often be separated from *L. pulicaris* by the more orange apothecial discs and Pd + orange-red epithecium.

General distribution: Europe (Norway, Italy, Slovakia), Caucasus (Russia), Asia (Turkey, India [as *Lecanora cinereofusca* var. *hymalayensis*]) and North America (as *Lecanora cinereofusc*a var. *appalachensis*).

25. **Lecanora farinaria** Borrer in Hook.

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, S of Kostrino village, 'Yasynny' ridge, a. 1000 m alt., 26.09.1997, *KS, KA, ZSD* (9834) (KW).

This sorediate species characteristic by blackish apothecial discs, thick, sorediate exiple and thallus with soralia K+ yellow.

General distribution: Europe (Norway, Austria, Italy), North America, Asia (Hong Kong).

26. **Lecidea swartzioidea** Nyl.

Description: BRODO 1995.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry distr. 5, Mt Cheremkha, on siliceous rock, 2.08.1997, *BJC, KS* et al. (9752) (E).

General distribution: Europe, North America and New Zealand.

27. **Lepraria lobificans** Nyl.

Description: LAUNDON, 1992; TØNSBERG, 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry (the former Stavne forestry) distr. 5, area 3, Mt Cheremkha, a. 1060 m alt., 49°02N', 22°41E', old beech forest at NE slope to village Lyuta side with *Lobaria,* on bark of *Fagus sylvatyca,* 4.08.1997, *KS, BJC et al.* (tags 2032, 2039) (SW of tag 2056) (E); Novostuzhytzia forestry, 'Yasynny' ridge, 1060 m alt., 49°05N', 22°34'E, old sycamore-beech forest with *Lobaria*, on *Fagus*, 1.08.1997, *KS, BJC, WP, ZSD* (SW of 2036); Kostrino forestry, distr. 21, area 2, botanical reserve, "German" Stream, at the bottom of valley, on bark of *Corylus avellanae*, 48°55'N, 22°34'E, alt. 350 m, 29.07.1997, *KS, BJC* (loc. 9742) (E, KW); areas 20 and 23, 11.07.1998, *KS* (tag 2249); Bystrytske forestry, between villages Chornoholovka and Lyuta, 7-8 km NE from village Chornoholovka, valley of Lyutyanka River, distr. 22, a. 350 m alt., on bark of *Acer platanoides*, 6.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (KW) (tag 2191); distr. 19, a. 290 m alt., on bark of *Fraxinus,* 6.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (tag 2195) (KW); Lyutyanske forestry, SW of Lyuta village, distr. 15, 'Shyroky' Stream, on bark of *Acer pseudoplatanus,* 5.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (tag 2182) (KW); Lyutyanske forestry, 'Rakivska yama', SW of Lyuta village, distr. 20, 1050 m alt., on bark of *Acer pceudoplatanus*, 4.06.1998, *KS, BJC, ZSD, RAA, LAA* (tag 2171, loc. 9841); to E of 'Rakivska yama', SW of Lyuta village, distr. 20, 1050-1150 m alt., N, NNE slopes, beech-sycamore forest, on bark of *Fagus*, 4.06.1998, *KS* (loc. 9843); Lyutyanske forestry, SW of Lyuta village, distr. 18, 'Mashyn' Stream, 615-620 m alt., on bark of *Fagus*, 5.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (tag 2178); Novostuzhytzia forestry, ridge unnamed between 'Sukha Potochyna' and 'Husariv' Sreams, distr. 15 (13), on *Fagus,* 27.09.1997, *BJC, KS et al.* (tags 2066, 2072) (KW); on *Fagus*, 2.10.1997, *KS, KA, ZSD* (tags 2105, 2113) (KW); distr. 14 (15), 1000 m alt., on *Fagus*, 30.05.1998, *KS, BJC, PAW, CS, JH, KA, ZSD* et al. (tag 2150; loc. 9833); Novostuzhytzia forestry, distr. 2, area 10, near Mt Semenova, sycamore-beech forest with Lobaria, on *Acer pseudoplatanus*, 28.07.1997, *KS* et al. (loc. 9741, tag 2008).

Rather common within area studied species. AR Crimea [ХОДОСОВЦЕВ, 1999, 2000, 2003; ХОДОСОВЦЕВ, РЕДЧЕНКО, 2002, БОГДАН, 2002; ХОДОСОВЦЕВ, БОГДАН, 2005].

The bright, pale green colour of the thallus (Pd + orange, K- or + yellow, C-) is distinctive for this species. *Leproloma vouauxii* differs by whitish to pale yellowish-grey thallus (Pd- to + reddish orange, K-, C-).

General distribution: It has cosmopolite distribution. Europe (from Portugal, Denmark, Germany, Italy to Estonia, Croatia and Greece), North America (Canada – British Columbia), Asia (India).

28. **Lepraria rigidula** (B. de Lesd.) Tønsberg

Description: TØNSBERG, 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Kostrino forestry, distr. 21, area 2, botanical reserve, 'German' Stream, at the bottom of valley, *Lobaria*, on *Sorbus*, 29.07.1997, *KS, BJC et al.* (loc. 9742) (E); Novostuzhytzia forestry, 'Yasynny' ridge, 1060 m alt., 49°05N', 22°34E', old sycamore-beech forest with *Lobaria*, on *Fagus,* 1.08.1997, *KS, BJC, PAW, ZSD* (loc 9745 tag 2025, loc. 9746, tag. 2029) (E); Novostuzhytzia forestry, at the bottom of the valley, Streams 'Bystry' and 'Kamyanysty', distr. 5, 6, 12, 490-555 m alt. (loc. 9754); Novostuzhytzia forestry, ridge unnamed between 'Sukha Potochyna' and 'Husariv' Sreams, distr. 15 (13), on *Fagus*, 2.10.1997, *KS, KA, ZSD* (tag 2109, 2110) (KW); vicinity of Stuzhytzia village, 'Zhyduvsky' Stream, Velykoberezny collective farm forestry, distr. 7, on *Fagus*, 29.09.1997, *KS, KA & ZSD* (KW); distr. 1, 420 m alt., on *Fagus*, 3.10.1997, *KS, KA, ZSD* (tag 2116). AR Crimea [ХОДОСОВЦЕВ, БОГДАН, 2005].

It differs from *Lepraria lobificans* by whitish thallus and negative reaction of thallus with Pd.

General distribution: Europe (from Iceland, Norway and Sweden to southern European countries, Russia, and Bulgaria), Asia (Turkey), North Africa (Morocco), and North America.

29. **Leproloma vouauxii** (Hue) J.R. Laundon

Description: LAUNDON, 1989.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, 'Yasynny' ridge, 1060 m alt., 49°05N', 22°34E', old sycamore-beech forest with *Lobaria, on Acer pseudoplatanus,* 1.08.1997, *KS, BJC, PAW, ZSD* (E, KW); Novostuzhytzia forestry, distr. 8, area 10, not far from forestry house, beech forest with *Lobaria*, 19.06.1997, *KS* (9706); Novostuzhytzia forestry, distr. 2, area 10, near Mt Semenova, sycamore-beech forest with *Lobaria*, on *Acer pseudoplatanus,* 28.07.1997, *KS, BJC* et al. (02001) (E); Novostuzhytzia forestry, ridge unnamed between 'Sukha Potochyna' and 'Husariv' Sreams, distr. 14 (15) or distr. 15 (13), on *Fagus*, 27.09.1997, *KS, KA, ZSD* (loc. 9793, tag 2064) (KW). AR Crimea [ХОДОСОВЦЕВ, 2003].

It is cosmopolitic species, which differs from *Leproloma membranacea* by obscurely lobed and whitish colour of the thallus.

General distribution: It has sparse localities in Europe (Atlantic part of Europe, Finland, Russia, Estonia, Lithuania).

30. **Leptogium teretiusculum** (Wallr.) J.R. Laundon

Description: JØRGENSEN, JAMES, 1983.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, 'Yasynny' ridge, 1060 m alt., 49°05'N, 22°34'E, old sycamore-beech forest with *Lobaria*, on *Fagus*, 1.08.1997, *KS, BJC, WP, ZSD* (SW of 2036); Novostuzhytzia forestry (the former Stavne forestry) distr. 5, area 3, Mt Cheremkha, 1060 m alt., 49°02N', 22°41E', old beech forest, on *Fagus*, 04.08.97, *KS, BJC et al.* (E) (SW of 2056, 9752). AR Crimea [ХОДОСОВЦЕВ, РЕДЧЕНКО, 2002].

The species is related to *Leptogium subtile* but differs by thallus consisting erect, crowded, minute cylindrical to coralloid branchlets and rare with apothecia.

General distribution: Europe (from Norway to Estonia and Slovenia), Asia (Eastern Siberia), North America.

31. **Leptorhaphis maggiana** (A. Massal.) Korber

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Velykoberezny collective farm forestry, Mt Stinka, 1057 m alt., 49°00'N, 22°31'E, near the border with Slovakia, at the forest edge, on *Corylus avellanae,* 5.08.1997, *BJC, CA & KA* (E) (9757).

It is non-lichenized fungus which differs from *Leptorhaphis epidermalis* by 3-septate ascospores, (25-)25-30 x 1,5-2,5 μm and I+ yellowish hymenial gelatine.

General distribution: It is known from several European countries (Great Britain, Belgium, Luxembourg, Germany, Switzerland, Austria, Italy).

32. **Megalaria pulverea** (Borrer) Hafellner & E. Schreiner

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Kostrino forestry, distr. 21, area 2, botanical reserve, 'German' Stream, at the bottom of valley, *Lobaria*, on *Alnus*, 29.07.1997, *KS, BJC* et al. (KW, E) (loc. 9742); areas 20 and 23, 11.07.1998, KS (tag 2249); Novostuzhytzia forestry, at the bottom of the valley, Streams 'Bystry' and 'Kamyanysty', distr. 5/6, on *Fagus,* 01.08.97, *CA, KA* (KW) (near tag 2041); distr. 5, area 3, Mt Cheremkha, a. 1060 m alt., 49°02'N, 22°41'E, old beech forest at NE slope to village Lyuta side with Lobaria, 970 m alt., on *Fagus*, 4.08.1997, *KS* et al. (02032) (KW); between Stuzhytzia and Zhornava villages, between 'Chorni Mlaky' and 'Divcha' Ridges, Zhornavsky forestry, distr. 25 (29) in the upper part of ridge, 1020 m alt., on *Fagus*, 28.09.1997, *KS, KA, ZSD* (02076). AR Crimea [ХОДОСОВЦЕВ, БОГДАН, 2005].

The sterile specimens of this species superficially can be confused with *Mycoblastus sterilis*, but distinguished by much thicker grey to glaucous thallus and large soredia (40-100 μm diam.).

General distribution: Europe, Macaronesia, South America (Chile), Australia (Tasmania).

33. **Micarea adnata** Coppins

Description: COPPINS, 1983.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, vicinity of village Zhornava, 'Zhornavsky' Stream, Zhornava forestry, distr. 9 or distr. 5 (?) 4.10.1997, on old stump, 4.10.1997, *KS, ZSD* (97103).

It is species easily recognised by presence of white or pallid sporodochia, which resemble small apothecia.

General distribution: The distribution in Europe (Norway, Great Britain, France, Spain, Netherlands, Germany, Switzerland, Austria, Poland, Czech Republic) and Asia (Siberia) close related with high annual precipitation more them 1000 per year.

34. **Micarea hedlundii** Coppins

Description: COPPINS, 1983.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Volosyanske forestry, 'Adamiv Forest', distr. 22 (area 1), SW of Tykhy village, plantation of *Abies*, on coniferous stump, 600-850 m alt. 2.06.1998, *KS, BJC, PAW, JH, RAA, LAA* (9836) (E).

This species is closely related with *Micarea prasina* agg., but it is easily recognized by distinctly stalked, pinkish brown, tomentose pycnidia.

General distribution: It is known from scattered localities in Europe (Norway, Sweden, Germany, Czech Republic, Switzerland, Austria, Slovenia, Lithuania, Poland, Slovakia), and North America.

35. **Micarea melaeniza** Hedl.

Description: COPPINS, 1983.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Volosyanske forestry, 'Adamiv Forest', distr. 22 (area 1), SW of Tykhy village, plantation of *Abies*, 600-850 m alt., on coniferous trunk, 2.06.1998, *KS, BJC, PAW, JH, RAA, LAA* (9836) (E).

This is difficult for identification species, which can be recognized by black, subglobose to tuberculate apithecia, black, stalked pycnidia, inconspicuous thallus, and occurence on lignum. It is closely related with *Micarea nigella*, *M. misella, M. botryoides* and *M. muhrii*. The other characters of these species see in COPPINS [1983].

General distribution: *Micarea melaniza* was hitherto known only from Sweden and Austria.

36. **Micarea nigella** Coppins

Description: COPPINS, 1983.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Volosyanske forestry, 'Adamiv Forest', distr. 22 (area 1), SW of Tykhy village, plantation of Abies, on conifeous lignum, 600-850 m alt. 2.06.1998, *KS, BJC, PAW, JH, RAA, LAA* (9836) (E).

This lignicolous species is characterized by the purple-brown K+ green pigment in the hymenium, hypothecium and pycnidial tissues, simple spores and stalked pycnidia [COPPINS, 1983].

General distribution: Distribution of this species is limited by Scotland, England, Denmark, Belgium, Luxembourg, France, Czech Republic, Poland and Lithuania.

37. **Micarea peliocarpa** (Anzi) Coppins & R. Sant.

Description: COPPINS, 1983.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, vicinity of the village Stavne, old beech forest, alt. 350, 48°66'N, 22°43'E, on *Acer campestre*, 27.07.1997, *KS, BJC et al.* (E); between villages Stavne and Lubnya, Stavne forestry, distr. 12, 'Ertashy' Stream, 680 m alt., on *Acer*, 5.10.1997, *KS, ZSD* (97105); Novostuzhytzia forestry, 'Kamyanysty' stream, distr. 4 (?), 580 m alt. 6.10.1997, *KS, ZSD* (97102); Kostrino forestry, distr. 21, area 2, botanical reserve, 'German' Stream, at the bottom of valley, *Lobaria* on sycamore, on *Fagus*, 29.06.1997, *KS, BJC* (9742).

This species closely related with *Micarea cinerea* and superficially can be mistaken with *Micaria leprosula*, *Micarea nitschkeana* and *Bacidia naegelii* [COPPINS, 1983].

General distribution: Europe (from Iceland to Estonia, Lithuania), Azores, Canary Islands, North America (north-eastern USA, eastern Canada), Asia (Turkey, Hong Kong) and New Zealand.

38. **Mycoblastus sterilis** Coppins & P. James

Description: COPPINS, JAMES, 1979.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Uzhok pass, near the border with Lviv oblast, Picea forest with young *Carpinus betulus,* 900 m., on *Fagus*, parasitized by *Tremella lichenicola*, 27.07.1997 *KS, BJC* et al. (loc. 9737) (KW); Kostrino forestry, distr. 21, area 2, botanical reserve, 'German' Stream, at the bottom of valley, *Lobaria* on sycamore, 800 m alt., on *Fagus,* 29.07.1997, *KS, BJC et al.* (loc. 9742, near tag 2014) (E); Lyutyanske forestry, SW of Lyuta village, distr. 18, 'Mashyn' Stream, 615-620 m alt., *Acer pseudoplatanus*, 5.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (tag 2179); Stuzhansky ridge, frontier posts 68 and 69, 1070-1160 m alt., 25.06.1998, *KS, MOG, TLO, IK* (tag 2217)

(KW); Novostuzhytzia forestry (the former Stavne forestry) distr. 5, area 3, Mt Cheremkha, a. 1060 m alt., 49°02'N, 22°41'E, old beech forest at NE slope to village Lyuta side with *Lobaria*, on *Fagus*, 970 m alt., 4.08.1997, *KS* et al. (KW) (9752).

It is closely related to *Mycoblastus fucatus*, but distinguished by well-developed prothallus, more or less convex soralia and growing on bark.

General distribution: Northern, Western and Central Europe.

39. **Microcalicium ahlneri** Tibell

Description: TIBELL, 1978.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Volosyanske forestry, 'Adamiv Forest', distr. 22 (area 1), SW of Tykhy village, plantation of *Abies*, 600-850 m alt., 2.06.1998, *KS, BJC, PAW, JH, RAA, LAA* (9836) (KW).

General distribution: Europe (Germany, Czech Republic, Italy), Asia (Russia – Kuril Islands, China).

40. **Ochrolechia szatalensis** Verseghy

Description: PURVIS et al., 1992.

Distribution in Ukraine: Lyuta, without details on locality (E).

This species connected with *Ochrolechia parella*, but distinguished by apothecial disc pruina C+ yellow, in contrast *O. parella* has C+ red reactions.

General distribution: It is known from Great Britain, Italy and Norway.

General distribution: Europe, North Africa (Morocco).

41. **Pertusaria pupillaris** (Nyl.) Th. Fr.

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, 'Kamyanysty' ridge, 910-960 m alt., 49°04'N, 22°36'E, sycamore-beech forest with *Lobaria*, on *Corylus avellanae*, 30.07.1997, *KS, BJC, WP* (KW); Between Stuzhytzia and Zhornava villages, between 'Chorni Mlaky' and 'Divcha' Ridges, Zhornavsky forestry, distr. 25 (29) in the upper part of ridge, 1020 m alt., on *Fagus*, 28.09.1997, *KS, KA, ZSD* (02076). AR Crimea [ХОДОСОВЦЕВ, БОГДАН, 2005].

It superficially resembles young thalli of *Phlyctis*, but distinguished by small, punctiform Pd+ orange-red soralia, K+ dirty reddish thallus and *Lecanora*-like apothecia if it's fertile.

General distribution: Europe (from Fennoscandia, British Islands and Pyrenees to Czech Republic, Lithuania and Slovenia), North America.

42. **Phaeophyscia endophoenicea** (Harm.) Moberg

Description: MOBERG, 1977.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, vicinity of village Zhornava, near farm building on NE vicinity of the village (from Stavne side), on *Acer*, 27.07.1997, *KS, BJC et al.* (9740) (KW); Novostuzhytzia forestry (the former Stavne forestry) distr. 5, area 3, Mt Cheremkha, a. 1060 m alt., 49°02'N, 22°41'E, old beech forest at NE slope to village Lyuta side with *Lobaria,* on *Fagus,* 4.08.1997, *KS*, *BJC* et al. (loc. 9752, tag 2032, 2033, 2037) (E, KW); Novostuzhytzia forestry, at the bottom of the valley, Stream 'Semeniv-Sokoliv', 49°03'N, 22°35'E, a. 470 m alt., on *Fraxinus,* 30.07.1997, *CA et al.* (loc. 9744); on *Carpinus betulis* by stream, *CA et al.,* and on *Fagus,* 30.07.1997, *BJC et al.* (loc. 9743, tag 2015) (E, KW); Novostuzhytzia forestry, 'Yasynny' ridge, 1020 m alt., old beech tree with *Lobaria* in young beech forest, on *Fagus*, 1.08.1997, *BJC, BJC* et al. (loc. 9745, tag 2025) (KW); 'Yasynny' ridge, 1060 m alt., 49°05N', 22°34'E, old sycamore-beech forest with *Lobaria*, on *Fagus,* 1.08.1997, *KS, BJC, PAW, ZSD* (loc 9745 tag 2025, loc. 9746, tag. 2029) (E); Novostuzhytzia forestry, ridge unnamed between 'Sukha Potochyna' and 'Husariv'

Sreams, distr. 14 (15) or distr. 15 (13), on *Fagus*, 27.09.1997, *KS, KA, ZSD* (loc. 9793, tag 2064) (KW); 1000 m alt., on *Acer platanoides*, 30.05.1998, *KS, BJC, PAW, CS, JH, KA, ZSD* et al. (tag 2152). AR Crimea [ХОДОСОВЦЕВ, 2000].

A medulla of this species is orange, K+ purple, while related *Phaeophyscia orbicularis* usually has white medulla, but sometimes yellow to orange only in uppermost part of cortex.

General distribution: Europe (from Central and North countries to Lithuania and Bulgaria), Asia (Turkey).

43. **Phaeophyscia hirsuta** (Mereschk.) Moberg

Description: MOBERG, 1977; NOWAK, 1994.

Distribution in Ukraine: vicinity of the village Kostrino, on *Cerasus vulgaris*, 4.06.1998, CS (KW).

The hyaline hairs on upper cortex and terminal lip-shaped soredia are distinguished from *Phaeophyscia orbicularis.*

General distribution: Europe, Asia (Mongolia), North (Morocco), East (Kenya) and South Africa, North (Canada, USA, Mexico), and South America (Argentina).

44. **Physcia vitii** Nadv.

Description: NOWAK, 1994.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, vicinity of the village Kostrino, on *Cerasus vulgaris*, 4.06.1998, CS (KW).

The pseudoparenchimatous lower cortex, lip-like soralia and lake cilia are characteristic and distinguished from *Physcia dubia* and *Physcia adscendens* agg. The closely related *Physcia tribacia* has marginal soralia and grows mostly on rock.

General distribution: The distribution of *Physcia vitii* is unstudied and it is hitherto known only from Italy, Switzerland, Slovakia and Poland.

45. **Porina leptalea** (Durieu & Mont.) A.L. Sm

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Kostrino forestry, distr. 21, area 2, botanical reserve, 'German' Stream, at the bottom of valley, *Lobaria* on sycamore, on *Fagus* by stream crossing, 48°55'N, 22°34'E, c. 350 m, 29.07.1997, *KS*, *BJC* (loc. 9742) (KW).

The orange to red-brown perithecia are the main characters of this species.

General distribution: This species has a southern and western distribution in Europe, extending as far north as Finland, and has also been reported from North America [NIMIS, 1993].

46. **Ramonia chrysophaea** (Pers.) Vězda

Description: COPPINS, 1987 b.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, distr. 2, area 10, near Mt Semenova, sycamore-beech forest with *Lobaria*, *Acer pseudoplatanus,* 28.07.1997*, KS, BJC* (loc. 9741, tag 2001) (KW).

This genus differs from *Gyalecta* or *Pachyphiale* in having a true exciple composed of narrow, never distinctly angular, cells and lacking periphyses [PURVIS et al., 1992]. *Ramonia chrisophaea* has needle-shaped ascospores mostly more 45 μm long 8- to 14-septate. The specimen was with one apothecium only which was destroyed during identification.

General distribution: It is known from British Isles, Denmark, France and Spain.

47. **Reichlingia leopoldii** Diederich & Scheidegger

Description: DIEDERICH, SCHEIDEGGER, 1996.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Kostrino forestry, distr. 21, area 2, botanical reserve, 'German' Stream, at the bottom of valley, *Lobaria* on sycamore, on *Acer pseudoplatanus,* 29.07.1997, *KS, BJC et al.* (loc. 9742, tag 2013) (E, KW); areas 20 and 23, 11.07.1998, KS (tag 2249); vicinity of Stuzhytzia village, 'Zhyduvsky' Stream, Velykoberezny collective farm forestry, distr. 7, on *Acer pseudoplatanus*, 29.09.1997, *KS et al.* (loc. 9795, 9796, tags 2083, 2087) (KW); vicinity of village Zhornava, 'Parashynsky' Stream, Zhornava forestry, distr. 4, on *Carpinus betulus*, 1.10.1997, *KS et al.* (loc. 9799, tag 2102) (KW); vicinity of Stuzhytzia village, 'Chorny' Stream, Velykoberezny collective farm forestry, distr. 1, on *Fagus*, 3.10.1997, *KS et al.* (loc. 97102, tag 2116) (KW); Lyutyanske forestry, SW of Lyuta village, distr. 15, 'Shyroky' Stream, on *Fraxinus*, 5.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (02186); Novostuzhytzia forestry, ridge 'unnamed' between 'Sukha Potochyna' and 'Husariv' Streams, distr. 14 (15) or distr. 15 (13), 1050 m alt., on *Acer pseudoplatanus*, 27.09.1997, *KS, KA, ZSD* (02080).

The genus resembles some species *Taeniolella* with a verrucose conidial wall, but is easily distinguished by the branched conidia and the tendency of the conidiophore to form sporodochia [DIEDERICH, SCHEIDEGGER, 1996]. *Reichlingia leopoldii* was described as lichenicolous fungi, but appears to be hyphomycetes *Trenthepohlia* containing lichenized fungus.

General distribution: British Isles, Central Europe, Poland, and Lithuania.

48. **Rinodina griseosoralifera** Coppins

Description: COPPINS, 1989.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, 'Yasynny' ridge, 1060 m alt., 49°05'N, 22°34'E, old sycamore-beech forest with *Lobaria,* on *Fagus*, 1.08.1997, *KS, BJC et al.* (near tag 2026) (KW); Novostuzhytzia forestry, ridge unnamed between 'Sukha Potochyna' and 'Husariv' Streams, distr. 14 (15), 1000 m alt., on *Acer platanoides*, 30.05.1998, *KS, BJC, PAW, CS, JH, KA, ZSD* et al. (tag 2152).

It is sorediate species with blue-grey soredia, which is in Pd negative or yellowish. *R. efflorescens* is closely related to *R. griseosoralifera,* but has Pd + (orange) soredia reaction.

General distribution: Europe (Norway, Scotland, England, Wales, Austria, Switzerland, Czech Republic), Africa (Canary Islands), and North America.

49. **Rinodina efflorescens** Malme

Description: PURVIS et al., 1992.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, 'Yasynny' ridge, 1170 m alt., 49°05'N, 22°34'E, old sycamore-beech forest with *Lobaria,* on *Acer pseudoplatanus,* 1.08.1997, *BJC* (loc. 9746) (E), on *Fagus,* 1.08.1997, *KS, BJC, PAW, ZSD* (loc 9745) (KW); Novostuzhytzia forestry, at the bottom of the valley, Streams 'Bystry' and 'Kamyanysty', distr. 5, 6, 12, 490-555 m alt., 1.08.1997, *KA, CA* (9754).

It is separated from *R. griseosoralifera* with its Pd+ yellow but never Pd+ (orange) reaction [PURVIS et al., 1992].

General distribution: Europe (Norway, Sweden, British Isles, Belgium, Germany, Poland, Lithuania, Estonia, Portugal), Asia (Turkey) and North America (Canada).

50. **Telocarpon strasseri** Zahlbr.

Description: POELT, 1969.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Kostrino forestry, distr. 21, area 2, botanical reserve, 'German' Stream, at the bottom of valley, on pebbles, 29.07.1997, *KS, BJC* et al. (KW).

General distribution: Europe (Belgium, Luxembourg, Netherlands).

51. **Shismatomma ricasolii** (A. Massal.) Egea & Torrente

Description: TORRENTE, EGEA, 1989; TEHLER, 1994.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Lyuta forestry, area 12, N slopes to Lyuta Stream, 635-700 m, on *Acer pseudoplatanus*, 1.08.1998, *KS, KA, ZSD, LAA, KNS, KOO* (9897, 2315).

General distribution: Europe.

52. **Trapelia corticola** Coppins & P. James

Description: COPPINS, JAMES, 1984.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Stavne forestry, distr. 26, area 1, Lyskovets Sream, at the bottom of valley, on woods, 3.08.1997, *CA* (KW); Velyky Berezny collective farm forestry, Mt Stinka, 1057 m alt., 49°00'N, 22°31'E, near the border with Slovakia, at the forest edge, on *Fagus*, 5.08.1997, *KS, WP, ZSD* (9753) (KW); Vicinity of village Zhornava, 'Zhornavsky' Stream, Zhornava forestry, distr. 9 or distr. 5 (?), 380-440 m alt., on *Fagus*, 4.10.1997, *KS, ZSD* (97103); Novostuzhytzia forestry, ridge unnamed between 'Sukha Potochyna' and 'Husariv' Streams, distr. 14 (15), 1000 m alt., on *Fagus*, 30.05.1998, *KS, BJC, PAW, CS, JH, KA, ZSD* et al. (02150); Lyutyanske forestry, SW of Lyuta village, distr. 18, 'Mashyn' Stream, 615-620 m alt., on *Fagus*, 5.06.1998 *KS, BJC, PAW, ZSD, RAA, LAA* (02177); Volosyanske forestry, 'Adamiv Forest', distr. 22 (area 1), SW of Tykhy village, plantation of *Abies*, on woods, 600-850 m alt., 2.06.1998, *KS, BJC, PAW, JH, RAA, LAA* (9836). AR Crimea [РЕДЧЕНКО, 2001].

Whole collection is sterile. The inconspicuous, greenish or brownish areoles, numerous, small, punctiform soralia (C+ red) suggest *T. corticola* is related to *T. obtegens*, but these species have different ecology.

General distribution: Atlantic Europe (British Isles, Spain), Tuscany, Azores, Macaronesia, North America (British Columbia), and South America (Chile).

53. **Trapeliopsis pseudogranulosa** Coppins & P. James

Description: COPPINS, JAMES, 1984.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Kostrino forestry, distr. 21, area 2, botanical reserve, 'German' Stream, at the bottom of valley, on woods, 48°55'N, 22°34'E, c. 350 m, 25.06.1997, *KS, BJC* (loc. 9742) (KW); Volosyanske forestry, 'Adamiv Forest', distr. 22 (area 1), SW of Tykhy village, plantation of *Abies*, on woods, 600-850 m alt., 2.06.1998, *KS, BJC, PAW, JH, RAA, LAA* (9836).

It is characterized by its minutely granular thallus, C+ red soralia and irregular, patchy coloration (K+ purple) due to the presence of an antraquinone [COPPINS, JAMES, 1984].

General distribution: This species is hitherto common and widely distributed in Europe (from the British Isles, Portugal to Czech Republic, Poland, Estonia), Madeira, Canary Islands, North America, South America (Chile), New Zealand.

54. **Vezdaea aestivalis** (Ohl.) Tsch.-Woess & Poelt

Description: TSCHERMAK-WOESS, POELT, 1976; COPPINS, 1987 a.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry, at the bottom of the valley, Streams 'Bystry' and 'Kamyanysty', distr. 5, 49°05'N, 22°34'E, on mousses on *Fraxinus*, 1.08.1997, *KS, CA et al.* (E); at the bottom of the valley, Streams 'Bystry' and 'Kamyanysty', distr. 5, 6, 12, 490-555 m alt., 1.08.1997, *KA, CA* (loc. 9754); Lyutyanske forestry, SW of Lyuta village, distr. 18, 'Mashyn' Stream, 615-620 m alt., on *Acer platanoides*, 5.06.1998, *KS, BJC, PAW, ZSD, RAA, LAA* (tags 02176, 2182); Novostuzhytzia forestry (the former Stavne forestry) distr. 5, area 3, Mt Cheremkha, 1060 m alt., 49°02'N, 22°41'E, old beech forest at NE slope to village Lyuta with *Lobaria*, on *Fagus*, 4.08.1997, *KS, BJC et al.* (tag 2031) (KW);

This species resembles superficially *Micarea*, but short-lived convex tomentose apothecia without exiple and hypothecium are diagnostical characters.

General distribution: Europe (from Denmark and Spain to Poland, Estonia, Russia, Lithuania).

55. **Zamenhofia hibernica** (P. James & Swinscow) Clauz. & Cl. Roux

Description: SWINSCOW, 1962, JAMES, 1971.

Distribution in Ukraine: Zakarpatska oblast, Velykoberezny district, Novostuzhytzia forestry (the former Stavne forestry) distr. 5, area 3, Mt Cheremkha, a. 1060 m alt., 49°02'N, 22°41'E, old beech forest at NE slope to village Lyuta side with *Lobaria,* on *Fagus,* 4.08.1997, *BJC et al.* (loc. 9752, tags 2032, 2033, 2037) (E, KW); Novostuzhytzia forestry, at the bottom of the valley, Stream 'Semeniv-Sokoliv', 49°03'N, 22°35'E, a. 470 m alt., on *Carpinus betulis* by stream, *CA et al.,* and on *Fagus,* 30.07.1997, *BJC et al.* (loc. 9743, tag 2015) (E, KW); Novostuzhytzia forestry, ridge unnamed between 'Sukha Potochyna' and 'Husariv' Sreams, distr. 15 (13), on *Fagus,* 2.10.1997, *KS et al.* (loc. 97100, tag 2105) (KW).

The specimens studied were sterile. Morphologically it is related to sterile *Saccomorpha icmalea*, but *Z. hibernica* has *Trentepohlia* algae in coralloid isidia.

General distribution: It grows on sheltered trunks of old ancient woodland in Europe (England, Denmark, Italy, France and Spain).

Acknowledgements

We are grateful to Director of the Uzhansky N.N.P. Mr Vasyl O. Kopach (Velyky Berezny); Head of Novostuzhytzia forestry Mrs Ganna Yu. Genyuta (Zhornava) for substantial help during field work; to Mrs Lyudmyla Popova and Ms Natalya G. Beznis (Kiev) for support of all kinds during treatment of material collected and preparation of this paper.

The financial support of Darwin Initiative is gratefully acknowledged.

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Отримано 15.11.2005 р.

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