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НАЦІОНАЛЬНИЙ ПРИРОДНИЙ ПАРК «ЧЕРЕМОСЬКИЙ»
НАЦІОНАЛЬНИЙ ПРИРОДНИЙ ПАРК «ХОТИНСЬКИЙ»
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КАФЕДРА БОТАНІКИ, ЛІСОВОГО І САДОВО-ПАРКОВОГО ГОСПОДАРСТВА
ЧЕРНІВЕЦЬКИЙ ОБЛАСНИЙ КРАЄЗНАВЧИЙ МУЗЕЙ
БУКОВИНСЬКЕ ТОВАРИСТВО ПРИРОДОДОСЛІДНИКІВ
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THE FIRST RECORDS OF MYXOMYCETES IN CHEREMOSH AND VERKHOVYNA NATIONAL PARKS

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The territory of the neighboring Cheremosh and Verkhovyna National parks (further NP), situated in Ukrainian Carpathians, is covered by the old native forests, rich of the different types of the dead wood. This substrate is known as a source of microhabitats, suitable for fungi and myxomycetes. Taking into consideration this circumstance, we have carried out the preliminary study of myxomycetes in both conservation areas during the period of 19–28 September 2014 (Verkhovyna NP) and 13–19 August 2015 (Cheremosh NP).

In the Cheremosh NP the deciduous forest with dominance of *Alnus incana* are situated along the right bank of the Perkalab river, while the coniferous forest with dominance of *Picea abies* are located on the slopes of the mountain range Chorny Dil. In the Verkhovyna NP forests with dominance of *Alnus incana* and insignificant admixture of *Populus* sp., *Betula* sp. and *Picea abies* are presented in the valley of the Perkalab river. On the mountain slopes, situated on the left bank of the river, the forests with dominance of *Picea abies* with small addition of *Populus* sp. are situated.

Collections were made using method of the route excursions. Identification of myxomycetes was made using specialized manuals [1; 3; 4].

As a result of the study, 12 of myxomycetes species were collected in the Cheremosh NP. All of them appeared to be the first records for the park. Their checklist is presented in the Table 1. Nomenclature, used in the list, follows Poulain et al. [4].

Table 1

Species composition and substrate distribution of myxomycetes in Cheremosh NP

№	Species	Forest with dominance of <i>Alnus incana</i> ¹	Forest with dominance of <i>Picea abies</i> ²
1	<i>Arcyria cinerea</i> (Bull.) Pers.	wFE	–
2	<i>Ceratiomyxa fruticulosa</i> (O. F. Müll.) T. Macbr. var. <i>fruticulosa</i>	br ⁺	br ⁺ PA, wPA
3	<i>Collaria arcyrionema</i> (Rostaf.) Nann.-Bremek. ex Lado	2wAI	wPA
4	<i>Fuligo septica</i> (L.) F. H. Wigg.	–	wPA
5	<i>Lycogala epidendrum</i> (L.) Fr.	w, 3wAI	–
6	<i>Physarum album</i> (Bull.) Chevall.	wAI	–
7	<i>Stemonitis axifera</i> (Bull.) T. Macbr.	wAI	3wPA
8	<i>Stemonitopsis amoena</i> (Nann.-Bremek.) Nann.-Bremek.	2wAI	–
9	<i>Trichia decipiens</i> (Pers.) T. Macbr. var. <i>olivacea</i> (Meyl.) Meyl.	2wFE	2wPA
10	<i>Trichia favoginea</i> (Batsch) Pers.	–	wPA
11	<i>Tubifera ferruginosa</i> (Batsch) J. F. Gmel. subsp. <i>ferruginosa</i>	2wFE	–
12	<i>Tubifera montana</i> Leontyev, Schnittler et S. L. Stephenson	2wFE	–

Explanations: substrate-forming plants (AI – *Alnus incana*, FE – *Fraxinus excelsior*, PA – *Picea abies*; substrate types (br⁺ – fallen branches, w – dead wood); the numbers near symbols mean the number of collected samples. ¹Forest with dominance of *Alnus incana* – forests consisting of the speckled alder at the right bank of the river Perkalab river. ²Forest with dominance of *Picea abies* – forests mainly consisting of the common spruce on slopes along the path to the mountain range Chorny Dil.

Most of collected species belong to the class Myxomycetes of the phylum Eumycetozoa; only *Ceratiomyxa fruticulosa* var. *fruticulosa* is usually considered as a member of the class Protosteliomycetes or Ceratiomyxomycetes. Within the class Myxomycetes, orders Stemonitales, Trichiales and Liceales are presented by three species each. The order Stemonitales comprises the species of genera *Collaria*, *Stemonitis* and *Stemonitopsis*; Trichiales includes myxomycetes from the

genera *Arcyria* and *Trichia*; Liceales embraces species belonging to genera *Lycogala* and *Tubifera*. The fourth order Physarales includes in our collection only 2 species, which are representatives of genera *Fuligo* and *Physarum* correspondingly.

Among myxomycetes collected in the Cheremosh NP only four species were recorded in both observed forest types: *Ceratiomyxa fruticulosa* var. *fruticulosa*, *Collaria arcyronema*, *Stemonitis axifera* and *Trichia decipiens* var. *olivacea*. It means that substrate distribution of myxomycetes in Cheremosh NP confirms the general regularity concerning the predominant occurrence of these organisms on decaying wood of definite (deciduous or coniferous) type [5]. In total, 16 specimens were found on decaying wood of deciduous trees and nine on *Picea alba*.

On the territory of the Verkhovyna NP eighteen species of myxomycetes were revealed. Among them, only *Lycogala epidendrum* and *Physarum viride* were known earlier in the region of Chivchyno-Gryniavski Carpathians [2]. Sixteen species were found in the Verkhovyna NP for the first time. The checklist of myxomycetes, collected in Verkhovyna NP is given in the Table 2.

Table 2

Species composition and substrate distribution of myxomycetes in the Verkhovyna NP

№	Species	Forest with dominance of <i>Alnus incana</i> ¹	Forest with dominance of <i>Picea abies</i> ²
1	<i>Arcyria incarnata</i> (Pers. ex J. F. Gmel.) Pers.	wPA	–
2	<i>Badhamia panicea</i> (Fr.) Rostaf.	w	–
3	<i>Craterium leucocephalum</i> (Pers. ex J. F. Gmel.) Dilmar	l ⁺	–
4	<i>Cribraria aurantiaca</i> Schrad.	–	wPA
5	<i>Diachea leucopodia</i> (Bull.) Rostaf.	–	sRI
6	<i>Didymium squamulosum</i> (Alb. & Schwein.) Fr. & Palmquist	gr ⁺	–
7	<i>Fuligo septica</i> var. <i>flava</i> (Pers.) Lázaro Ibiza	wAI	wPA
8	<i>Hemitrichia clavata</i> (Pers.) Rostaf.	2wAI	–
9	<i>Lycogala epidendrum</i> (L.) Fr.	wPA	–
10	<i>Perichaena corticalis</i> (Batsch) Rostaf.	b ⁺ Pop	–
11	<i>Physarum album</i> (Bull.) Chevall.	l ⁺ B, wAI	2br ⁺ PA
12	<i>Physarum viride</i> (Bull.) Pers.	–	br ⁺ PA
13	<i>Reticularia lycoperdon</i> Bull.	wAI	wPA
14	<i>Stemonitopsis hyperopta</i> (Meyl.) Nann.-Bremek.	wAI	–
15	<i>Trichia decipiens</i> (Pers.) T. Macbr.	wAI, wPA	wPop
16	<i>Trichia favoginea</i> (Batsch) Pers.	–	wPA
17	<i>Trichia persimilis</i> P. Karst.	2wAI	–
18	<i>Trichia varia</i> (Pers. ex J. F. Gmel.) Pers.	wB	wPop

Explanations: substrate-forming plants (AI – *Alnus incana*, B – *Betula* sp., PA – *Picea abies*; Pop – *Populus* sp., RI – *Rubus idaeus*); substrate types (b⁺ – fallen bark, br⁺ – fallen branches, gr⁺ – grass rests, l⁺ – fallen leaves, s – green shoot of stem, w – dead decaying wood); the numbers near the symbols mean the number of collected samples. ¹Forest with dominance of *Alnus incana* – forests consisting of the speckled alder at the left bank of the river Perkalab river. ²Forest with dominance of *Picea abies* – common spruce forests on the mountain slopes along the path to polonyna Preluchnyi.

All the species, listed in the Table 2, belong to the class Myxomycetes. The order Physarales seems to be richest concerning the number of genera revealed on the studied area (*Badhamia*, *Craterium*, *Didymium*, *Fuligo*, *Physarum*; 6 species), but in species diversity it concedes to the Trichiales (*Arcyria*, *Hemitrichia*, *Perichaena*, *Trichia*; 7 species). The order Liceales is presented by 3 genera: *Cribraria*, *Lycogala*, and *Reticularia* with one species each, while Stemonitales – by the genus *Stemonitopsis* with one species. In Verkhovyna NP, 5 species were collected in both studied forest types: *Fuligo septica* var. *flava*, *Physarum album*, *Reticularia lycoperdon*, *Trichia decipiens* and *T. varia*. Thirteen specimens of myxomycetes were found on wood of deciduous trees: *Alnus incana* (9), *Populus* sp. (3) and *Betula* sp. (1). Almost the same number of specimens (10) was collected on the dead wood of the coniferous tree *Picea alba*.

Differences between species composition and substrate preferences of slime molds in both studied NPs may be related with the different time of collection, different exposure of the mountain slopes and the long rainy period in August 2015, which was very unfavorable for development of myxomycetes in Cheremosh NP.

REFERENCES

1. **Ing B.** The Myxomycetes of Britain and Ireland. An Identification Handbook. – Slough: The Richmond Publishing Co Ltd., 1999. – 374 p.
2. **Krzeminiowska H.** Śluzowce Karpat Wschodnich // Kosmos. – 1934. – R. LIX. – S. 207–223.
3. **Nannenga-Bremekamp N. E.** A Guide to Temperate Myxomycetes. – Bristol: Biopress Ltd, 1991. – 410 p.
4. **Poulain M., Meyer M., Bozonnet J.** Les Myxomycètes. – Sevrier: Federation mycologique et botanique Dauphiné-Savoie, 2011. – 556 p.
5. **Stojanowska W., Panek E.** Myxomycetes of the nature reserve near Walbrzych (SW Poland). Part II. Dependence on the substrate and seasonality // Acta mycol. – 2004. – Vol. 39, № 2. – P. 147–159.

