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BRYOPHYTA
RESEARCH OF URBANIZED ENVIRONMENT IN VINNYTSYA

Introduction. Briofites are a compulsory part of the biocenosis, which are spread in all continents and are characterized by high morphological and taxonomic varieties. By species diversity, bryophytes occupy second place after angiosperms. As the role of mosses in flora formation is often underestimated, this question remains one of the most urgent in the ecology of higher spore plants to present day. Nowadays, the necessity of bryophytes use as indicators of the environment state is dramatically increasing especially for air pollution control.

The objective of this paper is to determine the bioecological structure of the bryophytes of the urbanized areas in Vinnytsia. To achieve the goal, the following tasks are planned:

1. to determine the species diversity of mosses in Vinnytsia;
2. to establish the patterns of mosses distribution in urban area;
3. to identify ecological groups of bryophytes according to the type of substrate;
4. to determine ecobiomorphs of mosses in urban areas.

Results of research. The study of the diversity of mosses in the Vinnytsia region is associated with the names of prominent scientists: Zerov D.K., Lazarenko A.S., Balkovsky B.Ye., Bachurin G.F., Boyko M.F., Partyka L.Ya., Vyrchenko V.M. and Gapon Y.V. [1-8].

Various ecotops within the boundaries of the city of Vinnytsia were analyzed to study the species composition of the mosses. The collection and study of bryophytes were conducted by route study and field gathering methods during 2016. Cameral processing and experimental studies were carried out on the basis of laboratory of Botany and Ecology Department on the Biological Faculty in Vasyl` Stus Donetsk National University. The fixed material was determined by the standard comparative-morphological method and after that it was herbarised [4-10]. The systematic analysis of the bryophytes was conducted according to the adopted system of Hill M.O. and co-authors and M. F. Boyko' additions [3].

The study of species diversity and mosslike bryophytes occurred not only on residential territories but also on industrial grounds in Vinnytsia with different load levels on the environment: OJSC "Sperco Ukraine"; PJSC "ViOil Industrial Complex"; LLC "Vinnytskii krupozavod"; OJSC "WinCup"; OJSC "Vinnytsia Confectionery Factory ROSHEN"; OJSC "Vinnytsia Plant of Fruit Concentrates and Wines"; OJSC "Vinina"; OJSC "Vinnytsia-Crystal"; LLC "Vinnytsia Experimental Mechanical Plant"; OJSC "Vinnytsia Bearing Plant"; OJSC "45 Experimental

Mechanical Plant"; OJSC Vinnytsia factory "Pneumatics"; OJSC Vinnytsia factory "Budmash".

During the study, 70 samples were collected. There were 26 mosslike species of bryophytes among them, which belonged to 1 division of *Bryophyta*, 2 classes (*Bryopsida*, *Polytrichopsida*), 4 orders, 8 families and 12 genera. It should be noted that a certain number of species of bryophytes in the city of Vinnytsia, at this stage of the research, is insufficient and needs further analysis [2-6, 9].

For the chosen territory, the species which have not been mentioned before in literary resources were identified for the first time: *Hygroamblystegium humile* (P.Beauv.) Vanderp., Goffined & Hedenas (*Amblystegium humile* (P.Beauv.) Crundw., *A. kochii* Bruch & Schimp., *Leptodictyum humile* (P. Beauv.) Ochyra, *Leptodictyum kochii* (Schimp.) Warnst.), *Homomallium incurvatum* (Schrad. Ex Brid.) Loeske., *Homalothecium philippeanum* (Spruce) Schimp., *H. lutescens* (Hedw.) Robins. (*Camptothecium lutescens* (Hedw.) Schimp.).

Analyzing the herbarium material, we have determined the correspondence of mosses species to diverse types of substrate, among which epiphytes and epiphylls predominate (the root zone of the tree, the stem zone of the tree, the fallen tree - 20 species), the rest are epilates and epigenes.

During the study, the following life forms were established: turf, pillow and carpet. Among them, most of mosses belong to the last biomorph (15 species). It is characteristic of bryophytes in an urbanized area, which is caused by their ability to store and use moisture, as well as to adapt in a short period of time for existence in difficult urban conditions.

Conclusion. According to the results of the research, it was found that most of the identified types of bryophytes belong to epiphytes and epiphylls carpet forms. This dependence is caused by the nature and type of substrate, the density of vegetation cover, the degree of anthropogenic loading and the specific conditions of the microclimate on the studied territories. A further prospect of research is substantiated by insufficient illustration of distribution, species composition and morphological characteristics of brioflora in Vinnytsia.

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II. PHYSICS, CHEMICAL AND MATHEMATICAL SCIENCES

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THE ROLE OF ORGANIC CHEMISTRY IN PEOPLE'S LIVES

Introduction. Chemistry is one of the oldest sciences which has an incredible impact on our lives. It plays a vital role in modern world helping to understand scientific facts, having a great influence on different processes and discoveries in various fields: medical, industrial, commercial and others.

The aim of the paper is to consider organic chemistry as a science, organic compounds, properties of organic compounds, role of organic chemistry in industry.

Results of research. Nobody draws their attention to the fact that every second our eyes are using organic compounds – retinal, which converts light energy into nerve impulses; while sitting in a comfortable position, back muscles maintain good posture through chemical breakdown of glucose to release energy.

Chemistry as a science emerged in the late nineteenth century. It has different aims from receiving food to treating millions of people who even do not understand of the role of chemistry in their lives. Organic chemistry is a study of organic compounds which has the ability to create new substances, structures and matters.

As for organic compounds, they can be got either from living organisms or from fossil materials. For examples, substances from natural sources are essential oils - menthol (mint flavor) and cis-jasmone (fragrance of jasmine flowers).

In the 20th century the chemical industry was divided into mass and thin. The first is engaged in the production of paints, polymers - substances that do not have a complex structure, however, produced in huge quantities. A thin organic synthesis deals with the production of medicines, flavors and in much smaller amounts.

At present, about 16 million organic compounds are known. It must be noted that in this field, organic synthesis has no limitations. There are a lot of ways to create the longest alkyl chain by adding more than carbon atom. This process is endless. But it should be said that all these millions of compounds aren't the same.

Describing properties of organic compounds, we paid attention to the fact that they can be a crystalline like sugar, or plastic like paraffin, explosive as isooctane, volatile as acetone. However organic substances have a smell that helps them