

THE STUDY OF THE MORPHOLOGY OF LICHENS ON HERBARIUM SPECIMENS

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Introduction. There are more than 26,000 species of lichen worldwide. Lichens in forest Biogeocenoses play a protective role for trees, increase soil fertility. Also some lichens are the main food for the reindeer. Certain species are edible and are used as human food. As producers of a variety of biologically active substances lichens are used in the pharmaceutical industry, perfumery and for medicinal purposes. In Ukraine 380 species of lichens were found. They can be meet in all regions of Ukraine, usually grow on rocks or tree trunks, sometimes on the soil. The main area of lichens use in Ukraine is lichenoidication - an assessment of the atmospheric environment pollution degree, because they are not tolerate the presence of sulfur-containing gases in the atmosphere, nitrogen oxide and other pollutants.

Aim. The aim of our study was the lichen species identification and their morphology studying by a herbarium specimens collection using.

Materials and methods. Studies performed on lichens collected in different geographical regions of Ukraine and Western Europe. During lichen identification we studied the thallus morphology, fruiting bodies, substrate attached organs. For some lichens biochemical tests were performed to determine which substances are present in their thallus that is important to consider as systematic position.

Results and discussion. Objects of research were different by the thallus structure, color and size. They belonged to three different main morphological groups and the transitional forms also. The lichens morphology study could assign them to the division Ascomycota class Lecanoromycetes. We have identified lichens of the following types: crustaceous lichen - *Haematomma ventosum*, *Rhizocarpon geographicum*; foliose lichen *Cetraria islandica*, *Hypogymnia physodes*, *Lobaria verrucosa*, *Xanthoria parietina*; fruticose lichens: *Cladonia bacillaris*, *Cl. deformis*, *Cl. fimbriata*, *Cl. rangiferina*, *Usnea dasypoga*; foliated bushy-: *Pseudevernia furfuracea*. After species identification were decorated lichen herbarium specimens.

Conclusion. Collection of lichens in nature and their subsequent identification based on external, internal structure and biochemical properties, allow us to conclude pollution lichen habitat. The results can be used to environmental prediction and methods for environmental clean development. The collection of lichens herbarium specimens established at the Department of Biotechnology NUPh will be used in the educational process, in the courses of biology producers of biologically active substances, microbiology, ecobiotechnology and other.