

**DATABASE OF VASCULAR PLANTS (EQUSETOPHYTA
AND LYCOPODIOPHYTA)OF BELORUSSIAN LAKELAND OF VSU NAMED
AFTER P.M. MASHEROV HERBARIUM**

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The herbarium of the botanical department of VSU as a scientific collection was started by Martynenko V.P. in 1972. In the end of 1970s and the beginning of 1980s in the topics of rare plant species studying were held in Belarus. Suborova S.F. also studied rare and disappearing plant species. During all the years the members of the botanical circle and lecturers have been active collectors of samples for the herbarium [1].

Today the herbarium of the botanical department of VSU named after P.M. Masherov numbers more than 6 thousand herbarium samples. It consists of scientific and educational parts (the second part also includes moss and lichen species).

The high scientific value of the botanical department herbarium was confirmed by its inclusion into the government list of the botanical collections as the result of the Ministry of nature resources and environment protection board (02.03.2010 № 20-P; the botanical collection certificate № 51).

Nowadays, the development of computer technology gives an opportunity to use reliable databases, which enable to sum up the data of collected plants and to interchange data with other institutions.

In 1998-1999 the project “The botanical collections of Belarus” (IPS BCB) was started. This project was supported by the ministry of nature resources and environment protection and held by the Central botanic garden of National Academy of Sciences of Belarus. The database and the site of the project were worked out for the realization of National strategy for conservation and stable usage of botanic diversity, which was made for conservation and enrichment of the country genetic resources. This project contains the descriptions of different types of collections (including the collections of living plants in botanic gardens), the information about the history of formation, systematic composition, founders, and present curators of the collections.

Data which were used in the creation of the information resource can be either original or previously published. The original information can be collected by a questionnaire poll or can be directly included into the resource. Such information should have the date of the creation. The previously published information should have a link to the primary source.

In IPS BCB the forms for on-line registration of a collection and the creation of a sample list are suggested. The data are checked by a moderator and are put in the database with internet access. While fulfilling on-line form prepared lists of plants and classification of plants other data are used. It is recommended to use international nomenclature and taxonomic site (IPNI) and Plant List during fulfilling the poll lists [2, 3].

The information, stored in the botanical information resources can be a valuable instrument and object of study. Modern management of scientific and educational function of botanical network based on the collections, can be effective only with a parallel development of the collection registration systems and integrated informational-analytic systems (IAS). Such systems are supported by taxonomic resources, image database and geoinformation systems.

Earlier the herbarium of VSU was partly systematized with the help of Microsoft Office Access database, but only one family (Rosaceae) was processed. This fact gives a way for further work. The accurate analysis of all collections of vascular plants of VSU named after P.M. Masherov herbarium gives the possibility to take the information of flora changing, the biotopical preference of plant species.

The aim of the study – to systematize the vascular plants in herbarium of VSU named after P.M. Masherov and to create the information of Equisetophyta and Lycopodiophyta with Microsoft Office Access database.

Material and methods. The objects of study were the herbarium samples of the botanical department and the samples, collected by the author. The work starts from the main window of database « the herbarium of Vitebsk State University named after P.M. Masherov». This window contains the information about taxonomic composition (forms, species, genera, families); the number of samples of each taxonomic category; the list of all samples; the list of the labels sorted by families; the place of collection, the date of collection; the composition dynamic. The database includes the information from the herbarium labels. First go data about the collectors (surname and initials) and the persons who determined the species . Each herbarium sample is given its number. The area for species name contains the list of all Belarussian flora. The necessary species should be chosen from the list if the sought-for species is absent it should be added to the list. The region of the collection should be chosen from the list of the regions. The area “the place of the collection” is fulfilled by the information from the label and so on with other areas. The database also includes the area “note” where all additional information can be put.

Results and discussion. The author analyzed and added in the database the information of of Equisetophyta and Lycopodiophyta, stored in the herbarium of VSU named after P.M. Masherov by 01.09.2014. The herbarium includes 7 species of Equisetaceae family (tab. 1), 2 species of Huperziaceae family, 5 species of Lycopodiaceae family and 1 species of Isoetaceae family (tab. 2).

Table 1 – Equisetophyta of VSU herbarium

Species	Number of samples
<i>Equisetum hyemale</i> L.	15
<i>Equisetum variegatum</i> Schleich. Ex F. Weber et D. Mohr	5
<i>Equisetum palustre</i> L.	13
<i>Equisetum fluviatile</i> L.	13
<i>Equisetum pratense</i> L.	13
<i>Equisetum sylvaticum</i> L.	22
<i>Equisetum arvense</i> L.	14

Table 2 – Lycopodiophyta of VSU herbarium

Species	Number of samples
<i>Huperzia selago</i> (L.) Bernh. Ex Schrank et Mard.	23
<i>Lycopodium annotinum</i> L.	7
<i>Lycopodium clavatum</i> L.	22
<i>Diphasiastrum tristachyum</i> (Pursh) Holub	1
<i>Diphasiastrum x zeilleri</i> (Rouy) Holub	3
<i>Diphasiastrum complanatum</i> (L.)	8
<i>Lycopodiella inundata</i> L.	1
<i>Isoetes lacustris</i> L.	5

Conclusion. The herbarium of VSU named after P.M. Masherov by 01.01.2014, includes 7 species of Equisetophyta (87,5 % of all Belorussian Equisetophyta species) and 8 species of Lycopodiophyta (100 % of all Belorussian Lycopodiophyta species). Total 95 samples of Equisetophyta and 71 samples of Lycopodiophyta are stored in the herbarium.

It is necessary to replenish the database after each expedition season and to add the information of other vascular plant groups from the VSU herbarium.

Reference list:

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