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### **The vegetation of Volynian national university's botanical garden "Volyn"**

*The work is carry out at the Department of Botany and Landscape Architecture of VNU named after Lesya Ukrainka*

On the basis of new surveys in the Botanical Garden of Volyn National University "Volyn" a list of vascular \* plants and habitat of rare and endangered species is made. Materials used as the basis of joint project with scientists from Germany for establishing territory botsadu. A placing of territory of the scientific zone is proposed.

**Key words:** Volynian National University's Botanical Garden "Volyn", vegetation, rare and disapered species of plants, conservation.

**Коцун Л. О., Кузьмішина І.І., Войтюк В. П., Кузьмішина С. В. Рослинний покрив ботанічного саду Волинського національного університету "Волинь".** На основі проведених обстежень нової території ботанічного саду ВНУ "Волинь" складено список судинних рослин та виявлено місцезростання рідкісних і зникаючих видів. Матеріали покладено в основу спільного з науковцями Німеччини проекту із облаштування території ботсаду. Запропоновано розміщення наукової зони території.

**Ключові слова:** ботанічний сад ВНУ "Волинь", рослинний покрив, рідкісні та зникаючі види судинних рослин, охорона.

**Коцун Л. О., Кузьмишина И. И., Войтюк В. П., Кузьмишина С. В. Растительный покров ботанического сада Волинского национального университета "Волинь".** На основании проведенных исследований новой территории ботанического сада ВНУ "Волинь" составлен список сосудистых растений и обнаружены места произрастания редких и исчезающих видов. Материалы приняты как базисные для проекта обустройства территории ботсада, разрабатываемого совместно с научными сотрудниками Германии. Предложено размещение научной зоны территории.

**Ключові слова:** ботанический сад ВНУ "Волинь", растительный покров, редкие и исчезающие виды сосудистых растений, охрана.

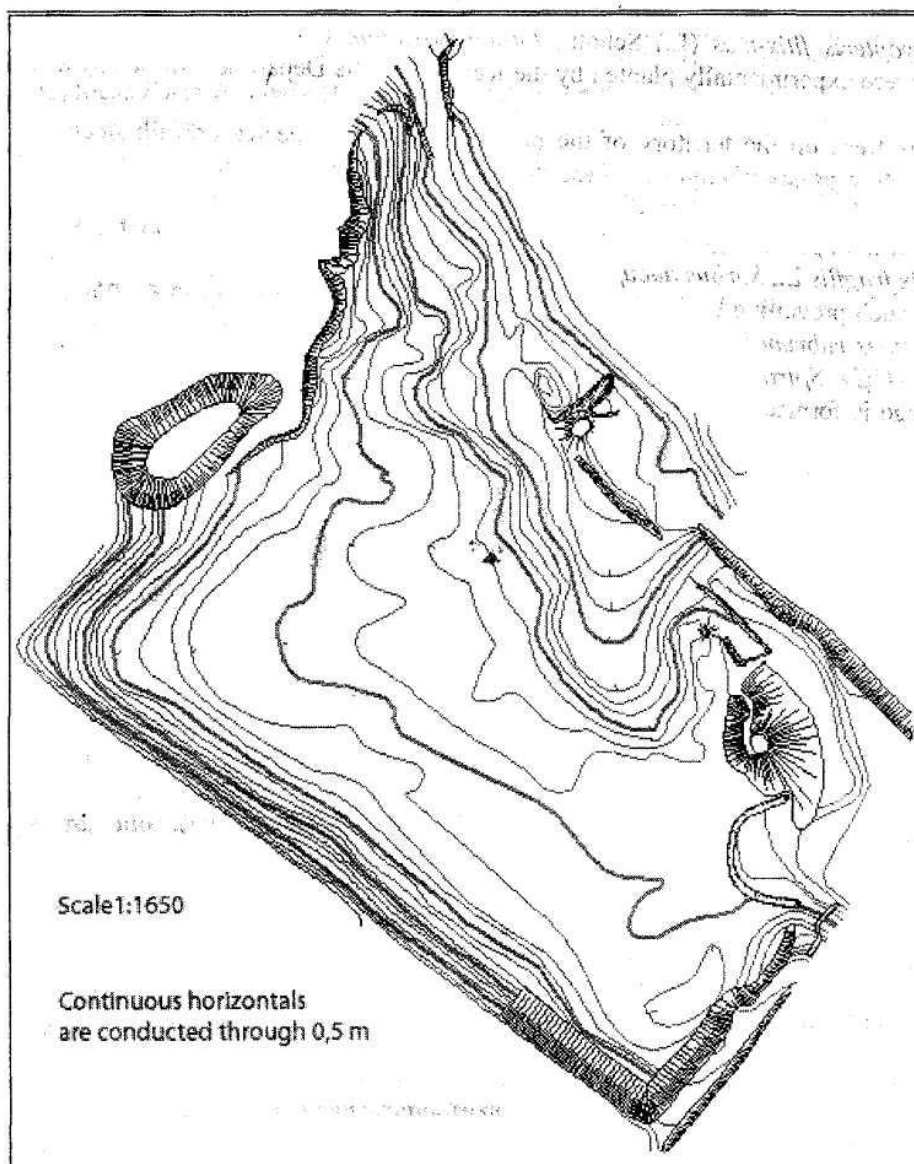
**Formulation of the scientific problem and it's significance.** The Botanical Garden of VNU "Volyn" in 2004 had the new territory on the street Potebni within the city of Lutsk. Today the cooperation with German scientists to draft settlement of the territory started. The study of vegetation which was formed on the site of the former quarry for further development of the arboretum and necessitated the survey.

**Analysis of last research from this problem.** The research didn't conduct at the territory of Botanical Garden "Volyn" last years.

**Purpose and the main tasks.** The aim of this work was to study the current state of vegetation botanical garden. The main task was to compile a list of vascular plants and to identify rare species:

**Materials and methods.** The object of research - the vascular plants of the botanical garden. The methods - the route surveys, processing literature. Latin names of species listed according [2].

**Statements of the main material.** The territory of the botanical garden of VNU "Volyn" is located in the valley of the river Styr, which is a cumulative erosion-formation (pict. 1). The basis of the valley is calcareous rocks, which were formed in Upper Cretaceous age. In the structure of this valley some marks the locations of floodplain and first overflowplain terrace. There is the water-bearing layer of chalk and marl at a depth of 70 meters. Water-bearing complex includes groundwater within the floodplain of Steer and Upper Quaternary formations from the first overflowplain terrace. The groundwater level is about 0,5 m. Sand and loam are the Rocks, which contain water [3].



**Pict. 1.** Orographic plan of Botanical garden of VNU "Volyn"

The soilcreating breeds are yellow perforated loess with iime inclusions and yellow-brown loess. They have many calcium carbonates, which increases the fertility. The stratum of humus is about 0,85 m today. On the park's territory there are such types of soil: 1) typical black soil, shallow with light loams, close to loess; 2) paludal mineral soils; 3) soils with anthropogenic origination (after the recoitivation processes of quarry).

Lutsk is region with sufficient regime of moistening. Average annual number of During precipitation is about 591 mm. Relative humidity of the air in Lutsk is the most in winter. The transfer of air mass from Atlantic causes mild winter with frequent snowbreaks and comparatively cool summer [1].

The character of the vegetation in the botanical garden "Volyn" was formed thanks to the influence of anthropogenic factors. The top part of the garden is an artificial dimple (wallow) (former quarry), where chalk was mined (taken). The lower part is located in the floodplain of the river Steer and retained natural type of vegetation.

At the territory of botanical garden "Volyn" only one species from the Red Book of Ukraine [4] is growing - *Epipactis helleborine* (L.) Crantz. Here there are regionally rare species - *Festuca altissima* All. and *Equisetum telmateia* Ehrh. Some specimens of plants (*Hedera helix*, *Dryopteris carthusiana* (Vill.) H.P.Fuchs, *Dryopteris filix-mas* (L.) Schorl., *Lilium martagon* L., *Hydrocotyle vulgaris* L., *Aldrovanda vesiculosa* L.) were experimentally planted by the lecturers of the Department of botany and Horticulture in 2005.

Among the trees on the territory of the park the following species prevail: *Acer negundo* L., *Acer platanoides* L., *Acer pseudoplatanus* L., *Aesculus hippocastanum* L., *Betula pendula* Roth., *Cerasus avium* (L.) Moench., *Padus serotina* (Ehrh.) Ag., *Picea abies* (L.) Karst., *Populus alba* L., *Populus italica* (Du Roi) Moench, *Populus nigra* L., *Quercus robur* L., *Robinia pseudoacacia* L., *Salix alba* L., *Salix caprea* L., *Salix fragilis* L., *Sorbus aucuparia* L.

There are such prevailing bush: *Corylus avellana* L., *Crataegus monogyna* L., *Physocarpus opulifolius* (L.) Maxim., *Ribes rubrum* L., *Rubus caesius* L., *Sambucus nigra* L., *Symphoricarpus rivularis* Suksdorf. *Swida alba* (L.) Opiz, *Spiraea vanhouttii*.

The herbage is formed by *Apium graveolens* L., *Bellis perennis* L., *Calamagrostis epigeios* (L.) Roth., *Conyza canadensis* (L.) Cronq., *Dactylis glomerata* L., *Filipendula denudata* (J.et C.Presl) Fritsch (F.ulmaria (L.) Maxim.), *Fragaria vesca* L., *Phragmites australis* (Cov.) Trin. ex Steud.), *Potentilla reptans* L., *Rumex acetosa* L., *Trifolium pralense* L., *Vicia tetrasperma* (L.) Schreb.

There are such weed-plants among herbage: *Achillea millefolium* L., *Aegopodium podagraria* L., *Arctium lappa* L., *Artemisia annua* L., *Artemisia vulgaris* L., *Carduus crispus* L., *Cichorium intybus* L., *Clinopodium vulgare* L., *Euphorbia cyparissias* L., *Galinsoga parviflora* Cav., *Geum urbanum* L., *Plantago major* L., *Plantago media* L., *Potentilla anserina* L., *Ranunculus repens* L., *Stenactis annua* (L.) Nees.. *Taraxacum officinale* Wigg., *Trifolium repens* L., *Urtica dioica* L.

**Conclusions and perspectives of the following researches.** The survey may be the basis for the formation of various exhibits of the arboretum, in the case of modern sanitary felling trees. A significant value of natural places found of rare plants that require the allocation of research to establish monitoring.

The herbarium specimens of rare species are kept at the Department of Botany and Landscape Architecture of Volyn National University named after Lesya Ukrainka (LUU).

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