

**STAGES OF DEVELOPMENT OF THE COLLECTION
OF TREE PLANTS OF THE BOTANICAL GARDEN
OF VSU NAMED AFTER P.M. MASHEROV**

Nadezhda Moskaleva

VSU named after P.M. Masherov, Vitebsk, Belarus

Keywords: landscape gardening, exotics, decorative species, collection, arboretum, nursery, reconstruction.

Collection of woody plants in open ground of the Botanical Garden of VSU named after P.M. Masherov was created throughout the history of the garden. The garden was founded in 1919 on the basis of a private park, where fruit and ornamental crops have been planted since the middle of the 19th century. The relatively small territory of the garden (about 7 hectares, of which 4 hectares are the steep slopes of the floodplain of the Vitba River), as well as the very rugged terrain, did not allow to have a lot of tree species here. The collection has six stages associated with different periods in the history of the garden.

Purpose of the work: to analyze, in historical terms, the creation and development of a collection of woody plants of the Botanical Garden of VSU named after P.M. Masherov.

Material and methods. The object of the research is the collection of woody plants of the Botanical Garden of the VSU named after P.M. Masherov.

The work was carried out in 2021. We analyzed a number of materials from the archive of the botanical garden, as well as printed sources with an analysis of the history of the development of the botanical garden [1; 2]. The result of the analysis formed the basis of this work.

Findings and their discussion. We have identified the VI stages of the formation of the collection of woody vegetation on the territory of the botanical garden.

Stage I. H. Gurevich's garden and Slepsa park (mid-19th century - 1917). There was a small assortment of aboriginal and exotic breeds, widespread and fashionable in the landscape gardening of that era, and a set of species and varieties of fruit crops characteristic of that time. The exact composition of the plantings is unknown, no archives have survived. Until now, three species have survived: an alley from the Norway maple and a clump of White Poplar in the floodplain of the river Vitba (now outside the garden) and a row of 13 small-leaved linden trees along the upper edge of the floodplain along the garden fence.

Stage II. School garden (1919–1941). In 1924, a Biostation was opened on the territory of the Botanical Garden of the Veterinary Institute, where the first circle of young naturalists began to work. The director of the biological station and the head of the botanical garden are one person. Most of the work on the introduction of plants in the garden was carried out by the forces of young naturalists, therefore in 1939 the Botanical Garden of the Veterinary Institute was reorganized into the Regional School Botanical Garden.

During this period, the introduction of new fruit crops was intensively going on in the garden, and also, since 1928, work was carried out on the selection of White Mulberry. Documents on the assortment of plantings have not survived, the archive of the garden was lost during the war years. Until now, individual plants of 5 species have survived: Hanging birch (three trees at the service entrance), Fragile willow (one tree on the collection site), Norway maple (one tree in the plant taxonomy area), Small-leaved linden (one tree in a two-storey building). All other plantations were destroyed during the war.

Stage III. Post-war restoration of the garden (1944 - 53). During this period, a nursery for decorative breeds and fruit crops was founded, an arboretum and an orchard were planted.

In the post-war period, the garden took a course towards creating an extensive collection of fruit crops. In the fall of 1948, the collection of woody plants consisted of 158 species and varieties, of which 76 were fruit and berry crops. In 1949, 22 new crops were brought for variety testing from the Loshitsa Experimental Station. In 1950 – 51 146 species and varieties of fruit crops were sown. In 1951 a collection of grapes from Michurinsk and Tambov was brought for variety testing.

In 1950, coniferous seedlings were brought in, which were planted in the alley on both sides of the central parterre. In the spring of 1952, the seedlings from the nursery were planted in permanent places according to the dendroplan. The arboretum was divided into 4 blocks geographically. The list of planted rocks has not been preserved.

Stage IV. Agrobiostation (1954 - 78). In 1954, the Vitebsk Regional School Botanical Garden was reorganized into the Agrobiostation of the Pedagogical Institute). The agrobiostation did not become the successor of the garden in his work on the introduction of plants and only supported the collections of the departments of vegetable growing and fruit growing. On the site of the collection site of decorative and floral plants, a new palm garden was laid on medium-sized apple stocks, and the old garden was also compacted. Now, on the former territory of the botanical garden, there were three orchards on an area of 1.5 hectares, the arboretum occupied 0.5 hectares. There is a list of the inventory of the arboretum for 1972. It includes 135 species of tree species.

Stage V. The period of restoration of the botanical garden (1979 – 84). In order to prevent the destruction of the remains of valuable collections, the Ministry of Education of the BSSR made a decision to recreate the botanical garden in 1979 as a teaching unit of the pedagogical institute.

A nursery for ornamental tree crops was founded, where seedlings were brought from Minsk and Moscow to replenish the arboretum. The introduction nursery was sowed with seeds sent from other gardens, as well as from their own mother plants. In 1979, six exotic species were sown from their seeds (Manchurian Apricot, Amur Barkhat, Horse Chestnut, Buckthorn Buckthorn, Manchurian Walnut, Maaka Bird cherry). From the Central Botanical Garden of the Academy of Sciences of the BSSR, they were brought and planted in the nursery: in 1979 – 10 breeds, in 1980 – 70 breeds, in 1981 another 29 breeds

were brought. In 1982, the collection includes 200 species and varieties of woody plants, in 1984 – 216, of which 44 species and varieties of mountain ash.

Stage VI. The period of the garden reconstruction (from 1985 to the present). In 1985, they began to carry out the reconstruction of the garden on a household basis, at the expense of income from the sale of planting material.

A new master plan was developed and a complete redevelopment of the territory was carried out. For several years, sanitary felling has been carried out in the garden: thinning of the arboretum has been done, old fruit trees have been demolished. All low-value and weedy tree species that interfered with the normal development of especially valuable introduced species were removed.

The garden is located in the city center in a very picturesque place on the slopes of the river Vitba with different expositions, therefore, the concept of building a botanical garden as a landscape park of a landscape type was adopted. 10 hectares have been allocated for the landscape park on the slopes of the right and left banks of the river Vitba. in 1990 – 97 sanitary and landscape felling was made. By the 2000s, the territory of the garden was reduced to 3 hectares, which created its own problems for the development of a collection of woody plants. But, nevertheless, as of 2021, the collection of the garden has 380 species and varieties of woody plants of different life forms.

Conclusion. Thus, we can state the complex history of the development of the collection of woody plants on the territory of the Botanical Garden of Vitebsk State University named after P.M. Masherov. There were some ups (stage II of the school garden, stage III of the post-war restoration of the garden, stage V of the period of restoration of the botanical garden, stage VI of the period of reconstruction of the garden). But there were also periods associated with the destruction of a greater or lesser part of the collection (the period of occupation by the Nazi invaders and stage IV of the agrobiological station).

1. Vysotsky, Yu.I. Botanical Garden of Vitebsk State University named after P.M. Masherov / Yu.I. Vysotsky, I.M. Morozov, V.L. Volkov. – Vitebsk: UO "VSU im. P.M. Masherov", 2004. – 40 p.
2. Report on the work of the Regional School Botanical Garden for 1949, sheet 10 (Vitebsk State Regional Archives, f. 2797, op. 1, d. 133)

THE CURRENT STATE OF THE MERCURY-CONTAINING WASTE MANAGEMENT SYSTEM IN THE REPUBLIC OF BELARUS

Alexandra Naumenko
BSU, Minsk, Belarus

Keywords: mercury-containing waste, waste management, hazardous waste, demercurization, collection of mercury-containing waste.

Mercury-containing waste belongs to the first hazard class, since mercury is a super-toxicant that poses a danger to human health and the natural environ-