

THE HISTORY OF TWO BOTANIC GARDENS – 45 YEARS OF THE NATIONAL BOTANIC GARDEN OF LATVIA AND 40 YEARS OF THE TALLINN BOTANIC GARDEN IN ESTONIA

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INTRODUCTION

The mission of a botanic garden states its overall purpose, and guides subsequent decision. At this level the likely collection type and themes should be identified. For example taxonomic versus conservation collections, and generic, geographic, or ecological themes.

Development of mission should presuppose evaluation by stating a purpose that is in tune with the likely values of the landscape. These may be biological (life support, ecosystem and species conservation) or human (visual, historic, recreational, cultural and social). If botanic gardens are underfunded it will be difficult to achieve a mission that is counter to their basic characteristics (MacKay, Chalmers 1996).

In Europe, most of the older botanic gardens have been established under universities, which had the required scientific potential and needed a research base. Similarly, the first botanic gardens in Estonia and its neighboring territories were connected with universities: the botanic gardens established in Turku in 1670, in Tartu in 1803, in Helsinki in 1830, in Riga and Vilnius in 1922, and in Kaunas in 1923 were institutions subordinated to the local universities. A different case was the establishment of the National Botanic Garden in Salaspils, Latvia, and the Tallinn Botanic Garden in Tallinn, Estonia. These were founded in 1956 and 1961 under the Academy of Sciences of the Latvian SSR and the Academy of Sciences of the Estonian SSR, respectively, and developed into scientific institutes.

All republics of the former Soviet Union had their own Botanic Gardens (BG) of the Academies of Science (AS). Moscow BG had been conferred the status of “Main garden”, thanks to the obstinacy of leadership of Kazakhstan as similar status was conferred on the garden of Alma-Ata, as they were of the opinion that they should have a Main Garden too. Where some of republics which had several BG, one of them was placed in the metropolis and called the Central (in Minsk, Kiev and other). Estonia, Latvia and Lithuania called “new republics” had no such Gardens so directions to establish BG came from Moscow (Cinovskis 2001).

There are currently seven botanic gardens in the Baltic countries: the Botanic Garden of the University of Tartu and the Tallinn Botanic Garden in Estonia, the Botanic Garden of the University of Latvia in Riga and the National Botanic Garden in Salaspils in Latvia, and the Botanic Garden of Klaipeda University, the Botanic Garden of the University of Vilnius and the Botanic Garden of Vytautas Magnus University in Kaunas in Lithuania. Of these, the National Botanic Garden and the Tallinn Botanic Garden are the only ones not subordinated to a university.

After Latvia and Estonia regained independence, the National Botanic Garden and the Tallinn Botanic Garden developed along somewhat different lines. Below we examine the development and the current activity of these two institutions.

LOCATION

The National Botanic Garden (NBG) is located in the town of Salaspils, 18 km southeast of Riga, near the Salaspils railway station (on the Riga-Ogre-Aizkraukle railway line) and 2 km north of the Riga-Daugavpils highway. Its geographical coordinates are 56°53' north latitude and 24°21' east longitude. The premises of the Botanic Garden are intersected by a small stream, around which a complex of ponds and hillocks has been developed. The average yearly temperature is +5°C, with the average temperature in January being -4.6°C and in July +17.5°C. The average annual duration of soil frost is 70 days. The record low temperature is -41°C. Snow cover lasts about 90 days and the vegetation period 170 days. The annual amount of sunshine is approximately 1,840 hours. Precipitation totals 560 mm per year and 320 mm per vegetation period (Spuris 1986).

The Tallinn Botanic Garden (TBG) is located in the northeast part of the city of Tallinn – the garden town of Pirita. It lies within 9.1 km from the city center and 3 km from the Pirita yachting and recreation center. The territory accommodating the Botanic Garden is known as Kloostrimetsa (Convent Forest), since it once belonged to the medieval St. Brigitte's Convent. The bulk of the Botanic Garden is situated on the flat of the ancient Pirita River valley, within the precincts of the local landscape protection zone founded in 1957. The territory of the Botanic Garden is divided by the Pirita River and bordered by a large area of sandy pine forests. The cemeteries of Metsakalmistu (Forest Cemetery) and Pärnamäe are situated nearby. The Tallinn TV tower is standing right next to the Botanic garden. At its height of 170 m, the TV-tower's cafe offers a panoramic view of its surroundings.

The geographical coordinates of the TBG are 59°28' north latitude and 24°53' east longitude. The average annual air temperature is +4.7°C. The average daily minimum temperature of the coldest month (February) is -9.2°C and the average daily maximum temperature of the warmest month (July) is +20.9°C. The record low air temperature is -34.4°C while the record high is +32.3°C. The average annual amount of precipitation is 559 mm (Paivel 1996).

Another thing in common with the two botanic gardens is that they are comprehensive landscape parks attracting their visitors with diverse growth sites and sundry sights.

HISTORY

National Botanic Garden

The foundations of the Botanic Garden in Salaspils can be traced back to 1836, when a

gardening company was organized by Christian Wilhelm Schoch, the owner of a seed shop in Riga and a nursery garden near Riga. As the nursery grew in size, it was transferred to Salaspils. The Schoch's company had imported its plants from West European companies, including the famous L. Spaeth Company in Berlin. Before World War I, the Salaspils nursery had sold 50,000-60,000 fruit-trees and a great number of ornamental trees every year to gardeners in Latvia and the European part of Russia. During Latvia's first period of independence, the vast Russian commodity market was cut off from the Salaspils nursery; nevertheless, it continued to be the largest nursery in the Baltic States by its area and plant diversity.

Before the end of World War II, the State Experimental Nursery of Fruit-Trees and Berry-Bushes was organized in the autumn of 1944 (renamed Experimental Gardening Station in 1947), where ornamental plants were also widely cultivated.

The idea of creating a botanic garden on the basis of the Salaspils Experimental Gardening Station was first put forward by academician Pauls Galenieks in 1951. The realization of the idea is largely the initiative of academician Alfreds Ozoliņš (1898–1971), who had been involved in the establishment of the Moscow Main Botanic Garden and was somewhat experienced in organizing botanic gardens. He was the first director of the Institute of Biology (1951-1965). At its session of August 2, 1956, the Presidium of the Academy of Sciences of the Latvian SSR decided to found the BG on the basis of the Salaspils Experimental Gardening Station and to apply to the Council of Ministers of the Latvian SSR for the allocation of 5 million rubles for this purpose. The Council of Ministers granted the application on August 18, after which the president of the Academy of Sciences, P. Valeskalns, decreed the founding of the BG on September 1, 1956 (Pūka, 1992).

Based on the rich plant collections from the nursery (more than 2,000 taxa) and the heritage of gardening traditions, the Botanic Garden of the Academy of Sciences of the Latvian SSR was founded in Salaspils on September 1, 1956. The area of the Botanic Garden comprised 198 ha (today 129 ha).

Upon the establishment, the main tasks of the Botanic Garden were defined as follows: studies on botany and ornamental gardening, greenery stand formation, plant introduction, research in genetics and breeding, and, besides these, the propagation and popularization of investigation results.

After Latvia regained independence in 1992, the Salaspils Botanic Garden was awarded the status of the National Botanic Garden (NBG). Thus, it was legally established as an object of national importance with regard to education, culture and science.

The first director of the NBG (1956–1958) was Dr. hab. Biol. Artūrs Mauriņš, an employee of the Experimental Gardening Station since 1955. He was a dendrologist and a long-serving university professor, heading the Chair of Botany of the Faculty of Biology of the University of Latvia in 1960-1992.

The subsequent directors of the National Botanic Garden were Ilmārs Zunde, M. Agr. (1958-1967), Viktors Ozoliņš (1967–1980), Andris Zvirgzds, Dr. Biol. h.c. (1980-1992) and

Kārlis Buivids, Dr. Biol. (since 1992) (Pūka 1992).

Tallinn Botanic Garden

In the 1860's, the Baltic German amateur scientists, Friedrich Alexander Georg Hoyning-Huene (1843–1921) and his brother Alexander (1848–1924) had an idea of creating a naturalist society in Tallinn (Annuka and Sander 2000). To obtain the required permission, they drafted a letter to Czar Alexander II. The letter was dated March 1, 1868. It stated the need for naturalists to advance their knowledge and to arouse interest in nature among the public as the objectives of the society's activity. However, the authors of the letter considered it unconceivable to found the society without a botanical and zoological garden. The garden was to become a basis for scientific research and to help enlighten the public along naturalist lines. In addition, the proponents of the society promised to build the garden in such a way as to be accessible to the wider public as an ornamental garden. Even though the establishment of the botanic garden was supported by the Tallinn City Council itself and a site for it had already been proposed, it ended in failure that time.

The idea was revived shortly after Estonia gained independence in 1918. Several projects were prepared and discussions held on the best location for the gardens. First raised in 1921, the issue of the establishment of the botanic garden was approved by the Tallinn City Council on February 15, 1922. The plans of the garden were prepared in March 1922 by N. P. Popov, a resident of Tartu and the former acting head of the botanic garden of the University of Tartu (in 1915–1917). In 1922, new plans were drawn by M. Janson. The preparatory works were given another boost in the second half of the 1930s, with plans of establishing a large cultural center to accommodate a botanic garden, a zoo and an open-air museum. However, the botanic garden again failed to be founded.

The establishment of the Tallinn Botanic Garden owes much to the organizational work led by academician Johan Eichfeld (1893-1989), born in Paide, Estonia. Beginning from 1918, J. Eichfeld lived outside Estonia, in the then Soviet Union, being the developer and organizer of agriculture and horticulture in polar regions. He was director of the Polar Department of the All-Union Institute of Field Crop Husbandry in 1923-1940 and director of the said Institute in 1940-1951. When the Academy of Sciences of the Estonian SSR was founded in 1946, J. Eichfeld became its active member, as well as academician-secretary of its Department of Biology and Agricultural Sciences. In 1950, J. Eichfeld was promoted to the post of the president of the Academy of Sciences of the Estonian SSR and moved to Estonia.

An important factor in the establishment of the Botanic Garden was the founding of an experimental gardening farm in the district of Lilleküla in Tallinn in 1950 under the Institute of Agriculture of the Academy of Sciences of the Estonian SSR (launched in 1947). The experimental farm was established on the territory of the nursery and orchard founded in the 1930s by Otto Kramer (1883-1972), a gardener, plant breeder and wine maker. O. Kramer,

born in the village of Öötla, Järva County, Estonia, was one of the most renowned gardeners of his time. After graduating from Paide Municipal School, he studied gardening in Russia, in Žizdras Mihhailov's gardening school in the province of Kaluga. Thereafter, O. Kramer was employed in the field of gardening in Russia, mainly in the Crimea region, until 1921, when he returned to Estonia (Tammoja 1998).

In November 1951, the experimental gardening farm was renamed the Tallinn Experimental Base. On June 6, 1956 (the same year the Salaspils Botanic Garden was founded in Latvia), a botanic garden was decided to be founded in Tallinn.

On July 7, 1956, the Tallinn Experimental Base was transformed into an independent institution titled the Tallinn Experimental Base of Biology. Under the institution, a section of ornamental gardening was established on October 27 that year. The section also started to pave the way to the establishment of the above-mentioned botanic garden. In 1956, J. Eichfeld selected a location for the botanic garden in the primeval valley of the Pirita River at Kloostrimetsa, in the northeastern part of Tallinn. Under his leadership, the structure and tasks of the botanic garden were specified by 1958 (Eichfeld 1958).

It was found that the Botanic Garden of the Academy of Sciences of the Estonian SSR should become the scientific and cultural center for botany and ornamental gardening in the republic. The main tasks of the institution were listed as follows (Eichfeld 1958):

1) To collect specimens of the flora of Estonia and other temperate zone regions and the most important collections of cultivated varieties for the purposes of research as well as for demonstrating the flora of Estonia and the then Soviet Union and creating expositions of them;

2) To propagate information about horticulture and biology among the public;

3) To study plant acclimatization and naturalization;

4) To breed new ornamental plant varieties;

5) To identify the possibilities of actively directing plant development;

6) To collect and research plant species that are new or rare in Estonia for agricultural and silvicultural purposes as well as for enriching green areas with valuable species, forms and varieties;

7) To supply nursery gardens with the seeds and young plants of the valuable species and varieties of ornamental plants.

On the basis of the Tallinn Experimental Base of Biology, the Institute of Experimental Biology of the Academy of Sciences of the Estonian SSR was created in 1957. In the same year, the compilation of *Index Seminum* was started; since 1962, this work has been continued at the Tallinn Botanic Garden. In 1959, the Tallinn Botanic Garden under the Institute of Experimental Biology was created.

By the decree of January 8, 1959, a 126.5 ha tract of land was allocated for the establishment of the Tallinn Botanic Garden at Kloostrimetsa. The tract included the farmland owned by Konstatin Päts (1874-1956), the former President of the Republic of Estonia (1938-1940), and the surrounding plots.

The establishment of K. Päts's farm had been started in 1918. By 1940, the size of the farm had reached 57.1 ha (including a detached plot of marshland), of which approximately seven ha were under buildings, a stone fence, roads, water bodies and a park forest. The farm had two lines of production – livestock farming and gardening. In 1939, the farm accommodated about 1,550 fruit trees, 1,000 berry bushes and 1,000 m² of raspberries and strawberries. The farm also dealt with apiculture and ornamental gardening; to date, several specimens of foreign species have been preserved there. In 1940, K. Päts and his family were deported to Russia (Lees 1994).

In the spring of 1959, the first workers of the Institute of Experimental Biology arrived at Kloostrimetsa to start the establishment of a botanic garden on K. Päts's farmland. By the governmental decree of December 1, 1961, the Tallinn Botanic Garden under the Institute of Experimental Biology, with its sections of ornamental gardening, dendrology and introduction, was declared independent and a new scientific institution under the name of the Tallinn Botanic Garden of the Academy of Sciences of the Estonian SSR was created.

In the late 1980's, the TBG consisted of a botanic garden and a nursery. As a scientific research institution, the TBG comprised the following sections: Department of Dendrology, Department of Ornamental Gardening, Department of Tropical and Subtropical Plants, Department of Applied Ecology, Department of Environmental Research, Department of Bioindication and Laboratory of Phytoimmunology.

The transformations in science that started in 1989 led to changes in the structure of the TBG. The new structure called for the creation of the following 5 laboratories: The Laboratory of Collections of the Botanic Garden, Laboratory of Information Systems, Laboratory of Landscape, Laboratory of Environment, and Laboratory of Bioindication. The employees of the former Laboratory of Phytoimmunology were transferred under the Laboratory of Bioindication.

Following the changes in science introduced after Estonia regained its independence in the early 1990's, researches started to leave the Botanic Garden for other scientific institutes. The first to leave were the employees of the Laboratory of Phytoimmunology, who went over to the now Institute of Ecology. In 1991, Laboratory of Bioindication became an independent scientific institution. In 1993, the employees of the Laboratory of Landscape also left for the Institute of Ecology. The "drain of employees" did not stop in subsequent years, either; some of them had to be dismissed due to lack of work.

During the scientific and educational reforms in Estonia, the Tallinn Botanic Garden was subordinated to the Tallinn City Council in June 1, 1995. The Academy of Sciences terminated the financing of research projects, which led to a reduction in the number of employees at the TBG. Research work fell into a decline and more attention was paid to educating the visitors and maintaining the collections (Paivel 1996).

The number of staff has seen drastic decrease. In 1990, it was 152; of these, 61 were employed at the nursery. Of the 91 employed at the TBG, 25 were researchers. In 1992, the number of staff had dropped to 106. In 1993, the nursery of the TBG terminated its activity

and part of its employees was transferred under the TBG. In 1994, the TBG had 82 employees; in 1997, it had 63 (Annual... 1991; Tallinn Botanic Garden 1997, 1998); and at the end of 2001 it had 46.

Today, the Botanic Garden consists of Accountancy Department, Administrative Department, Marketing and Sales Department, Department of Woody and Herbaceous Plants (headed by Olev Abner), Department of Tropical and Subtropical Plants (Eevi Siibak), Department of Environmental Education (PhD Siiri Liiv) and Department of Researches (researcher Jüri Elliku).

The recent activity of the TBG present has also suffered from the fact that for the last 10 years the institution has lacked a spiritual leader and thus been unable to fully adapt to the transformations. Therefore, science is no longer the spiritual flagship of the TBG.

In 1961, collectioning of tropical and subtropical plants were started in two hothouses (600 m²). In 1971, five new greenhouses were built, including the 9 m high palmhouse, and the total covered area under the glass expanded to 2100 m² (Paivel 1996).

In 1994, the greenhouse of succulent plants was rebuilt using modern construction methods to accommodate computerized climate control. In 1998-1999, a new palm house was completed and its surroundings cleaned, and a new boiler house and hot water pipeline were built. The new palm house is a glass structure for palms and other subtropical plants with an area of 500 m², the maximum height of 20 m, a conference hall for 120 people, a lecture room for 25 students, a coffee shop and rooms for the staff of the departments of Environmental Education and Subtropical and Tropical Plants (Paivel 1996; Tamm 2000; Jaakson 2001).

In 1997 TBG was connected with Internet, and the WWW-site of TBG was compiled (<http://www.tba.ee/TBGeng.htm>) (Tallinn Botanic Garden 1998).

The first director of the TBG was Arnold Pukk (1961-1978), who started work at the Institute of Experimental Biology in 1957. A. Pukk's scientific interests included rose breeding (Pukk 1958), landscape architecture and Estonian parks.

The subsequent directors of the TBG were Jüri Martin, academician of the Academy of Sciences of the Estonia (1978–1988); Andres Tarand, PhD (1988–1990); Agu Eensaar, PhD, acting director (1990–1991); Heiki Tamm, PhD (1991–1997); Jüri Ott (1997–2000); Kersti Lootus, acting director (2000–2001); and Veiko Lõhmus (since 2001).

PLANT COLLECTIONS

National Botanic Garden

Today, the living plant collections of the NBG total approximately 16,000 taxa. The foundations of the collections were laid through seed and plant exchange with botanic gardens, arboreta and gardening companies and through scientific expeditions to the Baltic region, the Far East, Kazakhstan, Middle Asia, the Caucasus, the Crimea, the Carpathians and

Karelia. Subsequently, a number of interesting samples have been collected from the Near East. The NBG holds national collections of many genera, particularly those of ornamental plants. (Cinovskis 1983).

About 60% of the territory of the NBG is under permanent plant expositions, such as an arboretum, a rosary, ornamental herbaceous perennials and annuals, medicinal and spice plants and collections for plant breeding and evaluation.

Most of the territory of the expositions (45 ha) is occupied by the Arboretum. The development of the arboretum was started in 1960, and it consists of two parts: the old part, where trees and shrubs have been planted according to the phylogenetic system, and a later one, where plants are arranged according to the geographic principle. An important role in the development and maintenance of the arboretum was played by the Latvian dendrologist Dr. Raimonds Cinovskis (1930–1998). To date, the collections of trees and shrubs (together with the nursery and found-plantings) comprise about 5,000 taxa, which make them the richest dendrological stocks in the Baltic states. From the scientific perspective, the most important part of the arboretum collection are plants bred from seeds and cuttings gathered in their natural habitats during botanical expeditions.

The collection of conifers embraces 1,138 taxa – species, subspecies, varieties and forms – including about 600 short ornamental forms, thus being one of the largest collections of its kind in the world. The collection of hawthorns (*Crataegus*) with its more than 200 taxa, including a number of specimen representing North American as well as Far Eastern species, is of worldwide importance. The collections of the species and ornamental varieties of apple-tree (*Malus*) are extensive and multiform. Many collections of national importance have been developed at the botanic garden, such as *Cotoneaster* – 80 taxa, *Spiraea* – 70, *Betula* – 100, *Sorbus* – 130, *Berberis* – 150, *Salix* – 250, *Populus* – 160, *Rosa* species – 100 and *Ericaceae* 300 (including 150 dwarf shrub species and varieties).

The Old Park was founded in 1935. It includes some interesting woody plants that are rare in Latvia: the drooping birch *Betula pendula* ‘Crispa’, the drooping forms of the elm *Ulmus glabra* ‘Camperdownii’, the common spruce *Picea abies* ‘Inversa’, the white alder *Alnus incana* ‘Pendula’, the rare gleditsia *Gleditsia triacanthos*, and others (Spuris 1986).

The exposition of lilac (*Syringa*) comprises the old cultivars introduced in the previous century from the famous L. Spaeth’s company in Berlin, and, in particular, the varieties bred by the Latvian breeder Pēteris Upītis. On the left side of the main entrance road opposite the *Thuja* alley there is a great variety of juniper (*Juniperus*) species and forms, combined with the varieties of heath (*Erica*), heather (*Calluna*) and potentilla (*Potentilla*) and the short ornamental forms of conifers, which run along both sides of the main road of the arboretum.

The rosary contains 300 rose varieties, which have proved to be the most suitable ones for the Latvian climatic conditions. A separate group is made up by nine park rose varieties (*Rosa rugosa*) developed by Dzidra Rieksta, a breeder of the NBG. These varieties are distinguished by an unusually high degree of hardiness in the changeable circumstances of Latvian winters. In total, the collection of roses comprises 1,000 varieties, constituting a rich

gene bank for breeding.

The magnificently blooming shrubs provide the best view in the central area. The most favorite of them are *Philadelphus*, *Forsythia*, *Spiraea*, *Veigela*, *Physocarpus opulifolius*, *Cerasus glandulosa* 'Alboplena', *Pentaphylloides* a.o.

The plants of perennial and bulbous flowers can be found in various places of the central area. Spring unfolds the colorful blooms of rich bulbous plant collections: tulips (*Tulipa* – 760), narcissuses (*Narcissus*), Juno irises (*Juno* – 170), ornamental onions (part of the internationally renowned collection of *Allium* – 700) and early-blooming rock garden plants; summer is the blooming season of irises, lilies, peonies, day-lilies (*Hemerocallis*), astilbe and clematis; and autumn opens the flowers of the phlox, dahlia and other collections.

Every year new compositions of wonderfully blooming annual flowers are formed, mainly in the parterre of the garden. About 250 species and modern cultivars are shown annually.

Passing the central parterre, the visitor comes up to the collections of medicinal and spice plants and the new fruit-bearing plants. The medicinal plants are represented by 200 plant species. In the collection of berry cultures, or fruit-bearing plants, you can get acquainted with 250 taxa, including North American cranberries (*Vaccinium macrocarpon*), high blueberries (*Vaccinium corymbosum* a.o.), lingonberries (*Vaccinium vitis-idaea*), sea-buckthorns (*Hippophaë rhamnoides*), edible honeysuckles (*Lonicera edulis* a.o.), guelder roses (*Viburnum*), mountain ashes (*Sorbus*), outdoor grapes (*Vitis*) and other varieties and forms. The black currant breeding field, where long-term hybridization and selection has yielded polymorphic forms from six species of the *Ribes* genus, may be considered an entity in its own right. Out of the hybrids, more than 300 forms have been selected for further cultivation to create varieties fit for the Baltic conditions.

Next to the black currant breeding field there are the experimental fields of turf grass collections. They contain more than 500 forms of grasses and an exposition of varieties and variety mixtures fit for various types of lawn. The effects of the various methods of lawn cultivation (mowing, watering, fertilization etc.) on the formation of turf, its hardiness and ornamentality are being tested and demonstrated there.

The exposition of tropical and subtropical plants was started in 1957 and now contains about 1,500 taxa from 335 genera of 71 families. The greatest diversity can be observed among the families of *Agavaceae*, *Araceae*, *Bromeliaceae*, *Liliaceae*, *Orchidaceae*. More than 700 taxa are succulents (*Cactaceae*, *Crassulaceae*). Also represented are ornamental hothouse plants used for food, such as pineapples (*Ananas*), bananas (*Musa*), lemons (*Citrus*), and medicinal plants, such as *Kalanchoë*, *Myrtus*, *Aloe* and *Urginea*, along with more than 180 plant species and varieties used for interior decoration.

The national collection of gerbera (*Gerbera jamesonii*) contains 150 taxa, including 32 varieties bred at the NBG. A vast collection of chrysanthemum (*Dendranthema indicum*) varieties, which was started in 1960, currently comprises more than 300 taxa, including 17 varieties bred at the NBG (NBG. The guide 1999).

Tallinn Botanic Garden

The collections of the TBG have been created through the gathering of live plants and seeds from their natural habitats and other growth sites, such as other plant collections, parks and gardens, and through seed exchange by the medium of *Index seminum*. In addition to seed exchange, much attention has been paid to introduction from natural habitats. Nearly 50 expeditions have been organized to this effect, and plant material has been collected from 30 floristic regions. Other botanic gardens have also been interested in obtaining seeds from natural habitats and we have tried to meet their requests. In 1962-1990, 173,235 seeds were issued and 54,150 received (Paivel 1991).

A comparison of introduction sites of the plants growing in 1996 shows that most of the plants and seeds for planting these specimens (<http://www.tba.ee/Kollektsioonid/FAMA.htm>) have been obtained from Tallinn – 948 taxa (1,779 from the whole of Estonia), followed by Salaspils – 722 taxa, Moscow – 440 taxa, St. Petersburg – 438 taxa and Riga – 209 taxa.

The total number of taxa in the living plant collections was 7,497, including the arboretum – 1,109, the rose garden – 519, the rock garden – 775, the bulb garden – 843, the succulent house – 996, the subtropical house – 440 and the tropical house – 657 (Tamm 2000). In 2000, the collection of living plants consisted of 7,979 taxa, of which 2,261 taxa were in greenhouses. In open air there were 5,718 taxa, of which 2,119 were woody plants. The latter also included 578 rose cultivars (Abner, Sander 2001).

The first master plan for the Botanic Garden embraced 160 ha. It envisaged the zoning of the premises into sites for systematic collections as well as geographical and ecological collections. The open air collection – arboretum – was started on K. Päts's farmland in the spring of 1963. In 1963-1998, that is, during 36 years, approximately 2,000 taxa were tested in the arboretum (Paivel 1999).

To date, the area of the arboretum, together with its roads and water bodies, embraces 17 ha. The first plan of the arboretum was drawn up by landscape architect Aleksander Niine. The arboretum has been based on the systematic principle. The positioning on the landscape of plant families, insofar as deciduous trees and shrubs are concerned, has mainly been based on the system developed by the Soviet Russian academician A. Grossheim whereas plant genera and species have been positioned in accordance with the system of the German scientist Engler. In the process of planting, the initial plan has steadily been improved and, because of the ecological perspective, also slightly modified.

The collections of woody plants have been arranged in individually designed sections, such as the Main Arboretum, the Heather Garden, the Garden of Ornamental Conifers, the Rose Garden, and the Audaku Experimental Station on the island of Saaremaa (<http://www.tba.ee/Kollektsioonid/FAMA.htm>).

The Main Arboretum comprises 1,136 taxa from 157 genera of 54 families. Most of the taxa represent the following genera: *Rosa* – 71, *Salix* – 49, *Acer* – 45, *Lonicera* – 35, *Spiraea* – 35, *Prunus* – 31, etc.

The largest number of foreign species has been introduced from the temperate zones of East Asia and North America, since many of them acclimatize themselves well to the Estonian ecological and climatic conditions. The introduction of woody plants from other regions of the northern temperate zone has been less successful, the least effective being that of plants from the Caucasus and southern Siberian mountains.

The northern part of the Arboretum has been planted with groups of conifers (*Pinaceae*, *Cupressaceae*, *Taxaceae*). Next to these, groups of deciduous trees and shrubs from the families *Oleaceae*, *Ulmaceae*, *Fagaceae* and *Betulaceae* have been planted. The next zone accommodates groups of woody plants from the families *Rosaceae*, *Berberidaceae*, *Aceraceae*, *Caprifoliaceae*, *Juglandaceae*, etc. The peripheral zone is occupied by the families *Fabaceae*, *Celastraceae*, *Anacardiaceae*, *Cornaceae*, *Rhamnaceae*, *Salicaceae*, etc.

The Heather Garden (0.6 ha) is located near the conifers. It was planted in 1970 at a special site under the canopy of a pine and oak stand. It holds 79 identified taxa from the following genera: *Rhododendron* – 46, *Vaccinium* – 13, *Erica* – 7, etc.

In 1989, a new Garden of Ornamental Conifers was founded near the office building of the TBG. The garden features 63 cultivars of ornamental conifers.

The Rose Garden occupies 1 ha of land and is separated from other collections by ponds, a stonewall and the hedges of *Thuja occidentalis*. It consists of a historical exposition of 355 varieties from 14 variety groups as well as the tested varieties of hardy outdoor roses (43 varieties from 5 groups). Beds of climbing roses (43 varieties from 4 groups) border one side of the Rose Garden while those of shrub and park roses (47 varieties from 8 groups) line the other sides. The total number of rose cultivars amounts to 501, representing 30 variety groups.

There is a collection of wild species of *Rosa* (71 species), planted since 1980, between the Main Arboretum and the Rose Garden.

The collection of perennials consists of mountain plants, tall perennials, and the genera *Astilbe*, *Iris* and *Paeonia*, which cover a bed area of 4,080 m² in their five separate expositions. To date, the collection holds 1,800 taxa.

The tall perennials, representing 227 taxa, are exposed on 540 m² of beds alongside a stonewall. The exposition of Peonies (550 m²) contains 209 taxa, the exposition of Irises (500 m²) 327 cultivars and the exposition of Astilbes (130 m²) 58 taxa.

The bulbous plants of the Tallinn Botanic Garden are incorporated into eight outdoor collections, one of which being designed as an exposition. The total number of bulbous plant taxa is about 1,000. Many of the bulbs have been collected from their natural habitats, in particular those of the short plants, the collection of which embraces 175 taxa. The collection of lilies consists of 145 taxa, the collection of tulips of 180 taxa, the collection of daffodils of 157 taxa, the collection of crocuses of 80 taxa, the collection of hyacinths of 58 cultivars, the collection of gladioli of 134 cultivars and the collection of alliums of 56 taxa.

The collection of annuals includes 382 taxa. Most of them belong to the families *Asteraceae*, *Brassicaceae* and *Scrophulariaceae*. Most of the annual taxa represent the

following genera: *Tagetes* – 13, *Zinnia* – 8, *Salvia* – 7, *Helichrysum* – 7, *Agastache* – 5, *Dianthus* – 5, etc. The best areas of introduction for Estonia are the Mediterranean countries, South Africa (Cape Province), Central America (Mexico) and Australia.

The collection of ornamental grasses and sedges was started in 1964. The collection includes 147 taxa from the families *Poaceae*, *Cyperaceae* and *Juncaceae*, of which 123 are annual or perennial grasses. In addition, it harbors 21 species of *Carex* and 3 species of *Luzula*.

The systematic collection of mountain plants comprises in 2000 800 taxa from 253 genera of 57 families. More plentiful is representation of the species in genera *Saxifraga* – 32, *Primula* – 27, *Sedum* – 22, *Geranium* – 18 and *Aster* – 18 (Kirotar 2001). This collection is displayed on a regular limestone terraced mound including a pond, covering an area of 2,400 m². It was created in 1974. The Rock Garden exhibits plants from the mountainous regions of southern and central Europe, eastern Siberia, central Asia and the Caucasus. The introduction of perennials from the mountains of Asia Minor, northern China, Japan and North America has been less successful.

The collections and expositions of greenhouse plants are located in six greenhouses while the seventh is used for propagation and testing purposes. The total area under glass is 2,100 m². The collections of tropical and subtropical plants together include 2261 taxa (Abner, Sander 2001). Therefore, the collection and exposition of plants has been focused mainly on the following:

- Plant groups common in tropical and subtropical regions illustrating the diversity of the plant kingdom;
- Endemic floras (Australia, Madagascar, the Canary Islands, etc.) as well as rare and endangered plants;
- Useful plants well-known for their seeds or fruits but not known in Estonia as living plants (for instance, the plants of coffee, cacao, pineapple, banana, vanilla, etc.);
- Exotic plants used for indoor planting or as cut flowers.

At the present, 661 taxa of vascular plants have been registered outside the collections of TBG, 5 taxa are probably incorrectly determined and 29 taxa have disappeared (Abner, Laansoo 2001).

In 1963, the first 44 taxa of introduced woody plants were planted at the Audaku Experimental Station (Saaremaa Island) of the TBG. Beginning from 1994, 24 new taxa have been introduced from the southern temperate zone. In 2000, there were 221 taxa of woody plants of 40 families and of 98 genera growing on the area of 3 hectares (Paivel 2001).

Inspired by advancement in introduction of woody plants from Southern Hemisphere to botanic gardens and arboreta of Nordic countries, experiments on introduction of plants of the temperate zone of this region to Estonia were made in 1994-1997 in Kloostrimetsa and Audaku. There were 49 species (93 accessions, 831 plants) planted on experimental beds in Kloostrimetsa and 26 species (61 accessions, 561 plants) in Audaku (Tamm 2001).

By 1986, it had been ascertained that the TBG had introduced into Estonia 227 taxa of

trees and shrubs as well as 745 taxa of annual and 962 taxa of perennial ornamental plants (Мартин 1986).

A survey of woody plants introduced into TBG during 32 years (1962-1993) of its existence (2650 taxa, including 1420 cultivars of roses) was completed. Taking into account winter-hardiness, parasite-resistance, longevity and decorativity, 1260 taxa were judged to be recommendable for introduction in Estonia (Annual 1994)

In order to find out the most suitable outdoor rose cultivars for Estonian gardens, 467 cultivars in rose collection of TBG were examined in 1986-1989. By special method, worked out in TBG, ornamental value (general development of plants, growth, blooming, foliage), hardiness (resistance to unfavourable climatic conditions, especially in winter) and degree of disease resistance (to the powdery mildew, to the black spot and to the rose-rust) were determined.

As a result of the investigations 116 cultivars of 8 rose-groups (HT, F, Pol, LCL, K, Hrug, Hspin, S) were judged to be recommendable for wide use in Estonian horticulture (Rumberg 1991).

A survey of introduction of herbaceous ornamental plants (nearly 3400 taxa) studied in TBG during 33 years (1962-1994) was completed. Taking into account the horticultural value of the plants (winter and drought hardiness, parasite-resistance, decorativity, suitability for mass propagation) 461 taxa including annuals, perennials and bulbous plants were judged to be recommendable for widescale use in Estonian horticulture (Annual 1995).

EDUCATION

National Botanic Garden

The National Botanic Garden, together with its specialists, data and expositions, has been employed as a basis for the active teaching of university and school students in biology, particularly in plant taxonomy, physiology, dendrology, floriculture and landscape architecture. At the Botanic Garden, scientists elaborate their bachelor, master and doctor theses.

Since 1967, the Botanic Garden of the Academy of Sciences of the Latvian SSR has taken part in international exhibitions of ornamental gardening (IGA) in Erfurt (Germany) and later also in Czechoslovakia (Flora Olomouc), and has been awarded with medals for flowers of high value and wide assortment, cultivars of original breeding (gerbera, park roses) and collections and compositions of cactuses and other succulents. During 20 years (until 1987), it has been awarded 19 gold, 14 silver and 16 bronze medals at various exhibitions.

The Latvian Breeders' Club, the Association of Lily Breeders "Lilium Balticum" and the School of Young Gardeners have been operating on the premises of the National Botanic Garden for a long time.

The exhibitions of botanic collections organized by the Botanic Garden at the time of the flowering and fruiting of different plants, such as chrysanthemums, bulbous plants, freesias, roses, lilies, hothouse plants and exotic fruit-bearing plants, are enjoying wide popularity.

The garden is a wonderful place for people to have an active rest, walk in the park, the arboretum or the expositions, ride a horse or drive a couch, and fish in the ponds. Different living plants, seeds and garden tools are on sale in the garden shop.

A large number of enthusiasts visit the Botanic Garden every year. In the last years, the annual number of visitors has been about 25,000.

Simultaneously with the foundation of the Botanic Garden in 1957, the first seed catalogue (*Index Seminum*) was published. Since then, it has been issued every year, with the 45th issue being put out in 2001. Seed exchange has grown into a large-scale transaction with 700 correspondents worldwide.

Tallinn Botanic Garden

In 1961-1995, educational efforts on natural sciences were combined with acquainting the visitors with the garden, holding lectures and publishing scientific writings aimed at the general public. Very popular were the traditional days of ornamental gardening and roses as well as the exhibitions of mushrooms, mosses and lichens.

Increasing attention was paid to the publishing activity, with several publications from various years introducing the Botanic Garden and its plant collections being released. A

number of conferences were held, and scientific publications on a wide range of topics were published.

In 1974, the Botanic Garden participated in Expo-74, the world's fair in Spokane (USA), (Martin et al 1974).

To render work in the field of nature and environmental education more effective, the Department of Natural Education was created in 1994 (Tamm 1996). In 1999, it was renamed the Department of Environmental Education.

In addition, the research and educational staff hold lectures on botany, ecology, ornamental gardening, etc. in the lecture hall of the TBG as well as in different colleges, high schools and other venues in Tallinn. The number of attendees increased to 40,158 in 1999 (Tamm 2000).

In the last years, the most crowded botanic exhibitions were "Exotic Fruits", "Irises", "Fragrant Plants and Spices" and "Days of Orchids". Two special courses on plant systematics and plant use in classroom design were organized at the TBG for teachers of biology and geography in Estonia. Herbarium sets of vascular plants, mosses and lichens were prepared and delivered to 16 high schools in Estonia (Tamm 2000; Liiv, Eensaar 2001).

In 1995, the Society of Friends of The Tallinn Botanic Garden was started and the first volunteers engaged themselves in the education work aimed at the general public (Paivel 1996).

A Finnish-Estonian joint exhibition on the Baltic Sea titled "The Same Sea in Us All" drew great crowds in the winter of 2001.

Specialists of TBG participate in the activities of the Estonian Dendrological Society, the Rose Club of Estonia, the Estonian Rhododendron Society and the Orchid Protection Club of Estonia.

After the collapse of the Soviet Union in 1991, many research workers and gardeners got an opportunity to participate in international research projects and training courses in botanic gardens and arboreta of the Nordic and Western European countries.

In addition, the Botanic Garden has organized several conferences and international seminars. The last of them, the international seminar "Urban Forestry in the Nordic and Baltic Countries", took place in Tallinn in December 1997 (Sander 1998).

HERBARIUM

The herbarium of the NBG includes more than 50,000 sheets. The major part of the material was botanized during the studies of the dendroflora of Latvia and the other Baltic countries. The genera most represented are as follows: *Cotoneaster*, *Crataegus*, *Populus*, *Rosa*, *Salix*, *Spiraea*, *Tilia*. The herbarium includes specialized parts, such as *Herbarium Generale*, *Asia Media*, *Caucasus et Tauria*, *Oriens Extremus*, *Regio Kaliningradensis*, which contain material gathered from expeditions. (Cinovskis 1997)

The herbarium of the TBG has been shown to contain 73,500 plant specimens (Tamm

2000), even 80,500 according to one source (<http://www.tba.ee/Kollektsioonid/Ylevaat.html>). Among them are approximately 9,500 sheets of vascular plants, including 6,500 sheets of woody plants and 3,000 sheets of herbaceous plants. The mushroom herbarium contains 6,000 specimens, the moss herbarium 15,000 specimens and the lichen herbarium 50,000 specimens.

LIBRARY AND MUSEUM

The library of the NBG was founded in 1957 and contains publications on botany, dendrology, forestry, floriculture, landscape architecture, fruit growing and other related areas. The files of the library held more than 20,000 printed items, including the classics of the late 19th and early 20th century.

The Museum of the NBG was founded in 1994. The comprehensive information about the history of the Botanic Garden is concentrated into stands and photographs. The main lines of activity and scientific work have also been put on display. One may acquaint oneself with the descriptions of cultivars bred at the Botanic Garden or elsewhere by Latvian breeders, as well as with the results of dendrological studies performed in old rural parks and urban green areas of Latvia. Pictures from expeditions, awards, publications written by scientists of the Botanic Garden and other materials are available for viewing. The history of Latvian ornamental gardening is shown in both pictorial and textual form.

The library of the TBG was founded in the first years of the botanic garden (Gailit 2001). The main objective of the library is to support the garden's work on education and botanic research and to serve as a base for collecting and storing the publications and manuscripts of the TBG. The lists of publications of the TBG have been compiled and published. The library of the TBG cooperates with the Estonian Academic Library (the central library of natural sciences in Estonia) and participates through the latter in the interlibrary lending system. The library has 15 exchange partners in Estonia and abroad.

The primary users of the library are the staff of the TBG, specialists from other institutions and students. However, the library is open to anyone who needs literature on botany, horticulture or the related areas for research and educational purposes. The main collections hold 10,100 items, including 5,000 volumes of books and 4,200 items of periodicals and serials. In addition, it contains manuscripts and abstracts of dissertations, slides and photos. The books are arranged both in alphabetical order and systematically using the Universal Decimal Classification (UDC) system. Both alphabetical and systematical (UDC) catalogues are available on cards.

The library of the Tallinn Botanic Garden belongs to the Section of Special Libraries in Estonia, which started its work in 1999. In 1997, the library joined the European Botanic and Horticultural Libraries Group (EBHL) (see <http://www.ub.gu.se/Gb/ebhl/home.htm>).

COOPERATION BETWEEN THE

TWO BOTANIC GARDENS

Cooperation between the two botanic gardens started even before the TBG was created. As early as in the autumn of 1961, a joint expedition to Russian Far East was organized on the initiative of the then dendrologist of the Institute of Experimental Biology of the Academy of Sciences of the Estonian SSR Aleksei Paivel and the then dendrologist of the Botanic Garden of the Academy of Sciences of the Latvian SSR Andris Zvirgzds. The expedition returned with large number of new plants and seeds for both botanic gardens.

In 1965, the establishment of the Botanic Garden of the Academy of Sciences of Latvia and its collections were given a more detailed coverage in Estonia (Margus 1965).

The establishment of the TBG drew from the experience of the NBG established 5 years previously. In addition, the NBG provided the TBG with a great number of plants and seeds. As mentioned above, a total of 722 representatives of plant taxa in 1962-1999 have been introduced from Salaspils (<http://www.tba.ee>).

The relations between the two botanic gardens continued to be friendly. This fact may particularly be credited to the famous dendrologists of the NBG A. Zvirgzds and Raimonds Cinovskis (1930-1998) (Tamm 1968; Aaspõllu et al 2000). While studying Baltic hawthorns, R. Cinovskis often stayed in Estonia, where close ties of friendship developed between him and several Estonian dendrologists, particularly the TBG dendrologist Jüri Elliku. Thanks to R. Cinovskis, Estonian dendrologists were frequent guests in Salaspils, either to bring home new plants or work at the local comprehensive library. The closeness thus developed has not been entirely lost up to the present.

From 1960 to 1990, the Botanic Garden of the Academy of Sciences of the Latvian SSR was the coordinating institution for the botanic gardens of the Baltic republics and the Kaliningrad Region in scientific research on the introduction and acclimatization of plants.

The Association of Baltic Botanic Gardens was founded in 1992, and since that same year, both botanic gardens are its members.

Cooperation has developed with many associated institutions, particularly in east and west Europe. The National Botanic Garden and the Tallinn Botanic Garden joined the “Botanic Garden Conservation International” in 1994.

Until the establishment of the “Association of the Baltic Botanic Gardens”, the Botanic Garden of the Academy of Sciences of the Latvian SSR (now NBG), being its coordinating institution, launched a regional thematic publication of collected articles, “Baltic Botanic Gardens” (in Russian). It contained works by scientists from the botanic gardens of Latvia, Lithuania, Estonia and the Kaliningrad Region. Seven issues, with the total volume of about 1,800 pages, were put out in 1971-1988 (Ботанические сады Прибалтики 1971, 1977, 1980, 1982, 1987, 1988; Интродукция растений в ботанических садах Прибалтики 1974).

Since 1992, Latvian, Lithuanian and Estonian botanic gardens have published a joint yearbook in English titled “Baltic Botanic Gardens”. To date, six issues of the yearbook have

been released (currently, each issue is edited in rotation by one of the seven member institutions) (Baltic Botanic Gardens ... 1993, 1995, 1996, 1997, 1998, 2000).

SCIENCE

National Botanic Garden

Apart from being a holder of rich plant collections, the NBG is important as a center for botanic, phytophysiological, ecological and genetical research. Scientific work is performed in three main structural units: the Dendroflora Department (headed by Dr. Biol. Ināra Bondare), the Plant Breeding Department (Dr. Biol. Kārlis Buivids) and the Laboratory of Open air Ornamental Plants (Dr. Biol. Arnis Seisums). The primary fields of research are as follows:

- The complex of dendrological studies, conifer defoliation problems, and plant databanks;
- The breeding of ornamental herbaceous and berry plants, plant propagation through tissue cultures, plant banks *in vitro*, and turfs;
- The taxonomy of the genus *Allium*, and the subgenus *Scorpiris* of the genus *Iris*, including karyologic and DNA studies (Buivids 2000).

The first periodical publication of collected articles of the NBG, “Daiļdārzniecība” (Ornamental Gardening), was launched in 1959. It contained studies on dendrology and ornamental gardening performed by scientists of the Botanic Garden of the Latvian Academy of Sciences. Fifteen issues, with the total volume of more than 2,600 pages, were published until 1989.

Another periodical publication, “Tautsaimniecībā derīgie augi” (Economically Useful Plants), was launched in 1962. It contained studies on the breeding and the agrotechnology as well as the physiology and the biochemistry of the different groups of the food, medicinal, fodder and technical plants, which were often new and unusual for Latvian agriculture. Eleven issues, with the total volume of more than 1,700 pages, were published until 1990.

The following is a list of 70 most important books issued by the National Botanic Garden:

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Tautsaimniecībā derīgie augi [Economically useful plants]. Zunde, I. (resp. ed.). **I**, 1962, 99 p.; **II**, 1963, 196 p., LPSR ZA izdevniecība, Rīga; Gūtmanis, K. (resp. ed.). **III**, 1966, 195 p.; Meļehina, A. (resp. ed.). **IV**, 1968, 179 p.; Ripa, A. (resp. ed.). **V**, 1970, 236 p.,

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* - In co-operation with the Botanic Garden of the University of Latvia.

Tallinn Botanic Garden

In 1961-1995, the TBA functioned as a highly comprehensive scientific research institute. Even after that, the more active researchers have pursued to maintain scientific research in its former place of honour. Important in this respect are works on ornamental gardening, plant introduction and acclimatization, and arboreta, parks and urban vegetation. TBG participates also in several monitoring programmes.

The fields of research covered at the TBG before 1995 were very diverse; it is easier to list what was not researched than what was. During 35 years, the TBG engaged itself in the following fields: ornamental gardening; phytopathology and immunology; plant physiology; plant introduction; dendrology; park research; landscape science (research on natural, agricultural and industrial landscapes and islands); landscape architecture; soil science; land amelioration; research on the stoniness of agricultural fields; climatology; hydrology; telmatology; ecology, including urban ecology (research on land use, vegetation, greenery, forests, air pollution, etc.); forestry; genetics; botany (including the flora of vascular plants, lichens and mosses); bioindication and other pollution studies; etc. The research performed at the TBG has even made a contribution to studies of the Antarctic Continent and the Arctic.

In addition, the TBG has provided favourable conditions for poetry making, essay writing and the development of dissident views.

It is also important to note that in 1975-1995 the TBG was the organizer of and host to many conferences encompassing Estonia as well as the then Soviet Union.

The following is a list of 52 most important books with a total volume of 9,917 pages (Gailit et al. 1986; Gailit 1991, 1996, 2001). Of these, 26 are monographs and 26 compilations of various articles, including collections of conference materials.

Veski, V. (ed.). 1962. Scripta Horti Botanici Tallinnensis I. Tallinn, 230 p. (In Estonian).

Niine, A. 1965. Maastikuarhitektuuri probleeme Eesti NSV-s. [Some Issues of Landscape architecture in the Estonian SSR]. Tallinn, 159 p. (In Estonian).

Karis, H. Rumberg, V. 1966. Jahukasteseened dekoratiivtaimedel (*Erysiphaceae*). [Powdery mildews (*Erysiphaceae*) in ornamental plants]. Tallinn, 192 p. (In Estonian).

Margus, M., Tamm, Ü. 1967. Pappelid Eesti NSV-s. [Poplars in the Estonian SSR]. Valgus, Tallinn, 219 p. (In Estonian).

Kildema, K. 1968. Maastikulise uurimise põhisuundi Eestis. [The main trends of landscape research in Estonia]. Tallinn. 146 p. (In Estonian).

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- Veski, V. (comp.). 1974. Iluaianduslikke uurimusi. [Some studies of ornamental gardening]. Tallinn, Valgus, 128 p. (In Estonian).
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- Болезнеустойчивость растений. [The disease resistance of plants]. 1974. Таллин, 188 p. (In Russian).
- Niine, A. 1976. Haljastaja käsiraamat. [A verdant area developer's manual]. Valgus, Tallinn, 432 p. (In Estonian).
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Website: <http://www.tba.ee/TBGeng.htm>

KAHE BOTAANIKAAIA AJALUGU – 45 AASTAT LÄTI RAHVUSLIKKU BOTAANIKAAEDA JA 40 AASTAT TALLINNA BOTAANIKAAEDA EESTIS

Kokkuvõte

Ludmila Vishnevskaja, Heldur Sander

Läti Rahvuslik Botaanikaaed (LRB) asub Salaspilsis, 18 km Riiast. Tänapäeval on see laialdane teadus- ja kultuuriasutus. Botaanikaaia rajamine ulatub tagasi 1836. aastasse, mil Riia lähedale rajati Christian Wilhelm Schochi poolt puukool. Puukooli kasvades viidi see üle Salaspilsi. Idee luua Salaspilsi Eksperimentaalse Aianduse Jaama baasil botaanikaaed kuulub akadeemik Pauls Galenieksile. LRB loomisele aitas palju kaasa akadeemik Alfreds Ozolinsh (1898-1971) ning 2. augustil 1956. aasta 1. septembril see loodigi. Botaanikaaia pindala oli algselt 198 ha, mis tänaseks on vähenenud 129 ha-le.

LRB elustaimede kollektsioon hõlmab tänapäeval umbes 16 000 taksonit. Ainuüksi puude ja põõsaste kollektsioon on 5 000 taksonit, millest okaspuid on 1 138 taksonit. LRB herbaarum hõlmab enam kui 5000 lehte. Enamus neist on herbariseeritud Läti ja teiste Baltimaade uurimise käigus. LRB raamatukogu loodi 1957. aastal ning see sisaldab enam kui 20 000 trükist. LRB muuseum loodi 1994. aastal. Selles on eksponeeritud botaanikaaia ajalugu fotodel, teaduslik ja hariduslik tegevus.

Idee rajada Tallinna botaanikaaed kerkis üles juba 1868. aastatel, realiseerus see alles 1961. aasta 1. detsembril. Tallinna Botaanikaaed (TBA) loodi Eesti NSV TA süsteemis teadusinstituudina ning rajati Kloostrimetsa, põhiliselt endise Eesti Vabariigi presidendi Konstantin Pätsi talu maadele.

Aja jooksul kujunes TBA-st laiahaardeline teadusasutus. Alates 1995. aastast, mil TBA läks Tallinna linna alluvusse, hakati suuremat rõhku panema keskkonnaharidusele ning kollektsioone hooldavale ja tutvustavale tegevusele. Teadusuuringud jätkuvad peamiselt iluaianduse ja kultuurtaimestiku alal ning asutus osaleb ka mitmetes seireprogrammides.

TBA eluskollektsioonid (2000. aastal kokku 7979 taksonit) moodustuvad kasvuhoonete ning avamaa taimedest. Troopiliste ja subtroopiliste taimede kollektsioonid (kokku 2261 taksonit) ja ekspositsioonid paiknevad kuues kasvuhoones, seitsmendas peamiselt paljundatakse ja kasvatatakse noortaimi.

Avamaal on kokku 5718 taksonit, neist 2119 puittaimed. Viimaste seas on ka 578 sorti roose. 1963. aastal rajati väiksem puittaimede kollektsioon (2000. aastal 221 taksonit) Audakule Saaremaal.