Conference article

Thaiszia - J. Bot., Košice, 31 (1): 003-028, 2021
https://doi.org/10.33542/TJB2021-1-01

THAISZIA
JOURNAL OF BOTANY

Seventy unique years of the Botanical Garden of Pavol Jozef Šafárik University in Košice

Pavol Mártonfi[1,2]

[1] Botanical Garden of Pavol Jozef Šafárik University, Mánesova 23, 043 52 Košice, Slovakia
[2] Institute of Biology and Ecology, Faculty of Science, Pavol Jozef Šafárik University, Mánesova 23, 041 54 Košice, Slovakia; pavol.martonfi@upjs.sk

Mártonfi P. (2021): Seventy unique years of the Botanical Garden of P. J. Šafárik University in Košice. – Thaiszia – J. Bot. 31 (1): 003-028.

Abstract: The Botanical Garden in Košice (BG) was established owing to the initiative of Dr. Jozef Rácz on 5th May 1950 as the Botanical Institute of the University of Agricultural and Forest Engineering (VŠPLI). Later it belonged to the Slovak Academy of Sciences and the Pedagogical Institute, until it became a part of Pavol Jozef Šafárik University in Košice (UPJŠ) in 1964. From its beginning it has played a role of a scientific and pedagogical institution. A lot of plants were planted in the originally almost bare area, greenhouses were built, which were open on 14th October 1958. At that time, they belonged among the largest ones in Central Europe. In 1969, the administrative building was completed. At present, the BG is a protected area with a total of 30 ha, greenhouses on an area of 3,200 m^2 and more than 4,000 species, subspecies, and cultivars of plants. It is thus the largest BG in Slovakia with the richest collection of cacti and cycads in Slovakia, as well as with various unique plant species from around the world. The main scope of the activities of the BG is the scientific research aimed at the concentrating and studying of the gene pool of endangered and common species. Further important activities comprise direct support of higher education and various activities within the framework of education at primary and secondary schools, as well as the support of natural history, ecological and cultural knowledge of all visitors.

Keywords: Botanical Garden of Pavol Jozef Šafárik University, history, 70 years, Košice, Slovakia.

Introduction

In 2020, the Botanical Garden of Pavol Jozef Šafárik University in Košice commemorated the 70th anniversary of its establishment. This paper represents a modified version of the main lecture of the director of the Botanical Garden of P. J. Šafárik University, prof. Pavol Mártonfi, at a conference held on the occasion of this anniversary. Since the history of the Botanical Garden until the year 2000 was dealt in detail in several works (Antoš 1964; Eliáš 1991; Mochnacký 2000, 2013), in this paper only on the most important events and lesser-known documents from older history are mentioned and we focus on the last 20-30 years.

Basic Facts and Mission of the Botanic Garden of P. J. Šafárik University

The Botanic Garden (BG) is a research and teaching unit of Pavol Jozef Šafárik University (UPJŠ) in Košice, in a broader sense being an educational and cultural establishment of the region of East Slovakia of both national and international significance. Extending on an area of 30 hectares, with its greenhouses covering an area of 3,200 square metres and a collection of over 4,000 species, subspecies, and cultivars of plants, it is the largest botanic garden in Slovakia (Fig. 1 and 2). These plants are a part of the natural plant communities in the botanic garden, or they are cultivated in the greenhouses and in the decorative areas. Plant communities in the Botanic Garden are complemented by rare and endangered species of animals that have found their home here. There are several remarkable collections in the Botanic Garden - the largest collection of cacti and cycads in Slovakia; very rare specimens of various tropical and subtropical plants, such as unique orchids, as well as "living fossils", such as wolemia, ginkgo or redwood. In accordance with the International Convention on Biological Diversity (CBD), the main focus of the Botanic Garden activities is on scientific research aimed at concentrating and studying the gene pool of endangered and common species from around the globe with a special focus on endangered species in the Carpathian-Pannonian region. In synergy with the Faculty of Science of P. J. Šafárik University, the Botanic Garden participates in higher education in the region through teaching by experts based in the BG and provides a background for the teaching of botanical and other biological disciplines. The main mission of the Botanic Garden in the field of educational and popularisation activities is aimed at supporting education and training at primary and secondary schools through permanent exhibitions and shows, as well as contests for primary schools; these activities also play a significant role in the education and development of cultural awareness of adult population.

Natural conditions and fauna

The area of the Botanic Garden of Pavol Jozef Šafárik University currently extends on an area of approximately 30 hectares, in the unit of the Košice Basin, in the subunit of the Medzevská pahorkatina Uplands from the geomorphological viewpoint. The north-western part of the BG area follows a steep slope to the

adjacent geomorphological unit of Volovské vrchy Mountains, which is part of the Slovak Ore Mountains. According to current more accurate measurements, the coordinates of the main entrance to the Botanic Garden of P. J. Šafárik University can be determined at 48°44'07"N and 21°14'20" E, while the altitude ranges from 218 to 370 metres above sea level.

The geological substrate consists of pyroclastic shales and phyllites (Mochnacký 2000). The soil in the Botanic Garden is deep, medium-heavy, slightly gravelly at the bottom. Above it, there are deep heavier soils with islets of very shallow soils on ventilated slate glass, the other part consists of medium-deep, very gravelly to stony soils, among which there are also very shallow, skeletal soils (Antoš 1964).

Climatically, according to Quitt (1971) this area belongs to the T1 and T3 areas, a warm area with summers being long to very long, medium to very warm and dry, winters being short, mild to moderately cold, dry to very dry (Antoš 1964, sec. Mochnacký 2000) give an average annual temperature of 8.4°C (the data should be for the last 40 years until 1964), January with an average temperature of -3.4°C, the average annual total precipitation being 643 mm. New measurements (Suvák, unpubl.) in the Botanic Garden in the years 2008-2011 showed a tendency to increasing average temperatures. The average annual temperature was 10.8°C (the difference of +2.4°C), the average temperature in January -1.1°C (the difference of +2.3°C). The average temperature in July was 21.3°C and the average annual rainfall was only 531 mm, which is just less than 84 % compared to the period in the mid-20th century. The North-South direction of the wind prevails in the Botanic Garden (Mochnacký 2000). Rising average temperatures and lower precipitation indicate a gradual drying-off of the area. The Slovak Hydro Meteorological Institute registers for Košice Airport show the average temperature deviation for the years 2013-2019 compared to the long-term average (1951-1980) at +2.7°C for the whole year, +2.3°C for January. The differences in precipitation are more significant, for Košice Airport the annual total precipitation (average for the years 2009-2019) is 640 mm, which is even an increase of 15 mm compared to the average in the years 1961-1990. However, this may be related to the fact that in recent years, there has been a lot of precipitation in summer during storms, when local differences in precipitation totals are very significant even in a small area.

According to the phytogeographical classification of Slovakia (Futák 1980), the entire Botanic Garden lies in the easternmost part of the 15th phytogeographical district of the Slovak Ore Mountains. The original vegetation in this area was oak-hornbeam forests (Michalko et al. 1986; Mochnacký 2000). Nothing has been preserved from the original vegetation; in the 1950s, the slopes of the Botanic Garden were practically without any tree vegetation (Fig. 3). During the existence of the Botanic Garden, afforestation of these slopes began with both native and various alien woody plants, which are part of the Botanic Garden exhibition collections.

The territory of the Botanic Garden of P. J. Šafárik University provides suitable conditions for a wide range of wild species of animals. Over 100 species of birds, 25 species of mammals, 8 species of amphibians, and 3 species of reptiles have been

Fig. 1 Main part of the Botanic Garden with greenhouses (Photo: Ján Kaňuk, 2020).

Fig. 2 Ortomap of almost the entire area of the botanical garden with adjacent streets (Author: Ján Kaňuk, 2019).

Tab. 1 Important milestones in the history of the UPJŠ Botanic Garden in Košice.

- 5th May 1950 - Establishment of the Botanic Garden (BG) as the Institute of Botany of the Agricultural and Forestry Engineering College with Dr. Jozef Rácz being its interim director.
- Spring 1951 - Construction of greenhouses commenced according to the design by the company Hontsch of Děčín, the highest greenhouse will be 12 metres high.
- 1st January 1953 – Transfer of the BG under the planned Slovak Academy of Sciences.
- 1953 - The oldest building built in the BG was Rozhľadňa (Lookout Tower) (also called Strážna veža (Watchtower) or Strážny domček (Gatehouse) with a height of 6 metres offering a beautiful view of the Košice Basin with the River Hornád.
- 12th December 1954 - the Botanic Gard started participating in the international seed exchange and publishing its Index Seminum, the first seed exchange list.
- 1955 - The Botanic Garden of the Slovak Academy of Sciences in Košice became the only one in Czechoslovakia to have its own Department of Biochemistry.
- 1956 - The Botanic Garden covered an area of 56 hectares.
- 1957 and onwards - Mutation cultivation research was being carried out using our own gamma field.
- 1958 - The BG land shrank with the construction of the Research Institute of Mining and Metallurgy of the Slovak Academy of Sciences.
- 14th October 1958 - Grand opening of the Botanic Garden greenhouses (three large and seven connected smaller ones).
- 31st December 1959 - Delimitation of the BG to the emerging Teacher Training College of Košice.
- 1960 - Attendance of the BG amounted to 8,700 visitors from Czechoslovakia and the neighbouring countries.
- 1st January 1964 - The BG affiliated to Pavol Jozef Šafárik University in Košice.
- 1964 - Definite concrete steam sites and overhaul of the catch well built.
- 1965 - The "Kamenoružiak Červený" (Rockrose Red) wine from the Botanic Garden was awarded the 3rd prize and an honourable mention at the Regional Wine Fair in Sobrance.
- 1965 - The UPJŠ BG participated in the national exhibition of ornamental horticulture in Olomouc for the first time.
- February 1969 - Full completion of the BG administrative building, part of the premises with lecture halls, laboratories and offices belonging to the UPJŠ Faculty of Science.
- 1971 - Breeding of the 'Dargov' *Trifolium pratense* variety by the UPJŠ BG staff.
- 1982 - The first *Enumeratio Plantarum* published, a list of the UPJŠ BG collections, later renamed to the Catalogue of Plant Collections.
- 1989 - The catalogue of the collection, Catalogue of Plant Collections No. 2 was published.
- 1990 - Reconstruction of the BG entrance hall.

- 1990-1991 - Requirements of restituents for land in the BG area rose (solved by renting the land from the restituents).
- 1991 - Completion of modifications of rooms for the storage of and working with the Herbarium.
- 1991 - Start of publishing the international botanical journal, Thaiszia – Journal of Botany (the 30th volume of the journal was published in 2020).
- 1991 - 1992 - Construction of eight greenhouses, of which four are heated.
- 1992 - 1993 - Extensive reconstruction carried out in the exhibition greenhouses.
- 1994 - The UPJŠ BG was declared Biocentre by a Generally Binding Regulation of the City of Košice No. 25 on the Local Territorial System of Ecological Stability (that Regulation was repealed in 2016).
- 2000 - The Ecological Educational Area project implemented according to the design by Prof. Ivar Otruba.
- 21st March 2002 - The BG was declared a legally preserved area.
- April 2006 - Launch of the biological plant conservation programme in exposition greenhouses.
- 2007 - The UPJŠ BG was registered in the International Agenda Botanic Gardens Conservation International system.
- May - June 2008 - The first year of the exhibition of tropical butterflies in the Victoria greenhouse, one of the most successful thematic exhibitions in the years to come.
- 2009 - The first year of the exhibition of orchids, in that and in the following years also very successful exhibitions.
- May 2010 – The Botanikiáda, the first annual show of the extremely successful series of competitions for primary school children launched.
- June 2012 and 2013 - The Gourmet Fest of Košice took place in the BG premises.
- 17th - 19th May 2013 - The 11th National Exhibition of Bonsai and Suiseki took place in the BG of P. J. Šafárik University.
- 2013 - The BG participated in accompanying ventures of the European Capital of Culture.
- 2013 - 2014 - Installation of the Beekeeping Educational Trail with 13 boards in the BG area.
- April 2014 - After lengthy and exhausting negotiations, land issues in the BG area settled (by purchase of six hectares from the Dominican Convention who refused to extend the lease).
- 24th October 2014 - The BG awarded the Košice Self-Governing Region Award for excellent results of the transfer of collected knowledge from the plant realm among the general public in order to support sustainability of a favourable environment.
- 2014 - 2015 - Reconstruction and modernisation of the main BG greenhouses cladding.
- 2016 - 2017 - Reconstruction and automation of heating in the BG greenhouses system.

- Summer 2017 - Reconstruction of the "Boutique" plant-cultivation greenhouse.
- 2018 - The first mobile application for BG visitors in Slovakia launched.
- Summer 2018 - Modernisation of the so-called Anthurium Greenhouse.
- August 2018 - Issue of a souvenir € 0.00 banknote with the theme of the Botanic Garden of P. J. Šafárik University greenhouses on the occasion of the 60th anniversary of the commissioning of greenhouses.
- 19th - 28th October 2018 - Exhibition of luminescent plants was held in cooperation with FLAVATAR for the first time.
- July - October 2019 - Reconstruction of electricity distribution and computer networks, as well as the interior of the building, the plant-cultivation greenhouse, and the pond in the lower part of the area.
- October 2019 - Establishment of the BotaniKE civic association, the aim of which is to support the development activities of the Botanic Garden of P. J. Šafárik University.
- 10/03/2020 – 05/05/2020 - The Botanic Garden of P. J. Šafárik University cancelled the opened exhibition of orchids and closed the premises to visitors due to the first wave of the Covid-19 pandemic. During the pandemic, the BG held "My Garden", a photo contest for the public.
- 17th June 2020 - The Slovak Post issued a sheet with a stamp in the nominal value of € 2.80 in the Nature Protection cycle: "Botanic Garden of P. J. Šafárik University in Košice - Large-blossomed Magnolia" depicting magnolia on the stamp and the BG greenhouses on the sheet.
- August 2020 - 3 summer concerts took place in the Botanic Garden for the first time, the Musica Iuvenalis association having performed at the first concert.
- September 2020 - Catalogue of Plant Collections No. 7.
- 3rd - 4th September 2020 - The Botanic Garden held a scientific conference "History and Present of Botanic Research and Nature Preservation" on the occasion of the 70th anniversary of the UPJŠ BG.
- 3rd September 2020 - On the occasion of its 70th anniversary, the Botanic Garden of P. J. Šafárik University was awarded a Bronze Medal by the Rector of the Slovak University of Agriculture in Nitra, a Bronze Medal by the Dean of the UPJŠ Faculty of Science in Košice, and a Commemorative Medal by the East Slovak Museum in Košice Director.
- 11th September 2020 - The Botanic Garden of P. J. Šafárik University was awarded the Rector's Award in the category of Significant Media Act: For Spreading the Good Name of P. J. Šafárik University in Košice within the Organisation of Botanic Garden Ventures on the Occasion of Its 70th Anniversary and for significant media response to the inauguration of the annual postage stamp with a botanical motif.
- 15th October 2020 - The Botanic Garden has been closed for longer than half a year due to the second wave of the Covid-19 pandemic.
- 19th April 2021 – Re-opening of Botanic Garden in 2021 after second wave of the Covid-19 pandemic

found in the previous observations in this area. Interim monitoring results also point to an interesting invertebrate fauna. For example, we register over 40 species of ants representing more than a third of the species of the myrmecofauna in Slovakia, which is remarkable in such a relatively small area. Heated greenhouses are a specific environment in which several exotic thermophilic species of animals have found their suitable milieu. In addition to phytophagous species damaging plants and species deliberately released against them as part of biological protection, other species also occur spontaneously. These are either indifferent in terms of plant cultivation or even useful in combating pests in greenhouses. Within the ongoing monitoring, 62 species of spiders have been found in the greenhouses. So far, we have registered over 70 published works dealing with individual groups of animals within the area of this Botanic Garden. Although these works did not cover the entire species diversity of the fauna, partial results also indicate high biodiversity in this area. The fact that up to 17 species of animals mentioned in the above works represent the first finds not just for the territory of this Botanic Garden, but for the whole of Slovakia also deserves special mention. These species include, for example, the spider *Uloborus plumipes* (Suvák 2013b), the fly *Coenosia attenuata* (Suvák 2008), the chalcid wasp *Oomyzus gallerucae* (Suvák 2012), the ant *Hypoponera schauinslandi* (Suvák 2011). It should also be noted that several animals found so far are protected in terms of the local or European legislation or international conventions. For example, from Decree No. 158/2014 Coll., Annex No. 6, we pre-register 18 species of European significance and about 25 species of national significance here. Of the species of European significance, let us mention at least several examples: stag beetle (*Lucanus cervus*), European tree frog (*Hyla arborea*), Aesculapian snake (*Elaphe longissima*), black woodpecker (*Dryocopus martius*) (Suvák 2013a). In addition to cultivated plants, purposefully bred animals mean another attraction for visitors and represent a special category in the Botanic Garden of P. J. Šafárik University. In the greenhouses, these are either seasonal (tropical butterflies) or permanently presented exotic animals (stick Insects, fish). In the main building, there are aquariums with other species of fish. In the outdoor areas, there are also fish in ponds, but also various exotic (parrots) or domestic (hens, pigeons) birds in aviaries, rabbits in cages, goats, and sheep in special enclosures. Long-term breeding of bees and their significance, as well as the importance of the related species of hymenopterous insects, are described on the information boards of the Beekeeping Nature Trail.

Botanic Garden in the 20th Century

The history of this Botanic Garden dates back to 1946, when Dr. Jozef Rácz was entrusted with the establishment of the Agricultural and Forestry Engineering College (VŠPLI) in Košice (Fig. 4). Dr. Rácz "automatically" included the establishment of the Botanic Garden in the plans for the existence of such a school, which was to be a necessary part of ensuring the quality of education of its students. The Botanic Garden was established by the Educational Commission on 5 May under No.

103290/50-III/1 as the VŠPLI Botanical Institute in the area on the Komenského Street. It had only 3 hectares and was managed by the board of trustees. Subsequently, the area in the Košice - North City District was selected for the BG, while thanks to the activity of Ing. J. Daninger, its construction continued well. Dr. Jozef Rácz became the interim director of the BG (Tab. 2), who with great engagement took the lead in the work on demarcation of the BG land. Subsequently, the agreement made between Ing. Daninger and the Botanic Garden of Charles University in Prague provided the first plants for planting. Prague gardeners and botanists also sent plants and made visits to the BG in Košice and advised on plantings (Mochnacký 2000). In 1951, the construction of greenhouses began (Fig. 3), and after the abolition and division of the VŠPLI, the Botanic Garden passed under the newly formed Slovak Academy of Sciences in 1953. More information on its future and development is provided in Table 1 and a detailed list of events is contained in the book by Mochnacký (2000). During the period when the Botanic Garden belonged to the SAS, 2 directors took turns at its head, Ing. Vít Bojňanský and Ing. Anton Laffers. In 1960, the BG came under the administration of the Pedagogical Institute in Košice and Ing. Tibor J. Antoš, CSc. became its director, who was replaced in 1964 by Ing. Karol Nagy, CSc. In that year, the BG became part of Pavol Jozef Šafárik University, where it has belonged for longer than 57 years. In 1980, Ing. Antoš returned to that post and RNDr. Sergej Mochnacký, CSc. started working as the director of the Botanic Garden of P. J. Šafárik University from 1989, who managed it until 2018 (Tab. 2). The change of the social regime in 1989 meant new challenges for the director and employees of the BG, which meant various changes in the organisation and functioning of the Botanic Garden. One of the challenges was in the poor condition of the Herbarium, which began to change by allocating and completing areas for storing of the Herbarium as well as areas for the work of staff and visitors to the Herbarium (Mártonfiová et al. 2021). During that period, the foreign book sources so necessary for the activities of the Botanic Garden were little available and very expensive. At the initiative of Ing. Vlastimil Mikoláš and an employee of the Department of Botany, Faculty of Science of P. J. Šafárik University, RNDr. Pavol Mártonfi, with the support of the then director of the BG RNDr. Sergej Mochnacký, CSc. a new scientific journal was launched, which soon became known as Thaiszia – Journal of Botany. It was named after an important figure in Botany in Košice, Lajos Thaisz (1867-1937) (Mikoláš 1991). This journal began to be exchanged for almost 200 titles of journals, and many review copies of books from renowned publishers were added to the BG Library. In the later period of the 21st century, during the development of digital Internet media, this aspect of journal publishing receded, but remains a scientific platform for publishing the results of scientific work by authors from around the world. However, after the fall of communism in Czechoslovakia, not many resources remained for the development of the Botanic Garden. As part of the "rationalisation", there is a decrease in the number of employees of the Botanical Garden - while in 1978 the Botanic Garden had 71 employees, in 2000 it was only 46.5, which is a decrease of more than one third of

all the employees. Since 1990, restituents have also demanded their land taken by the communist regime. The largest of them was the Dominican Order in Slovakia. Therefore, in the following period, the BG had to pay the restituents for the lease of the land. However, the pressure of developers to cut part of the land and build houses in the exclusive location of Košice increased. At the same time, however, it was achieved that the Botanic Garden of P. J. Šafárik University became the so-called Biocentre within the Territorial System of Ecological Stability (ÚSES) by a Generally Binding Regulation of the Municipality of Košice No. 25 in 1994. However, the Resolution on the ÚSES was repealed in 2016 and the situation remains unresolved from the side of the Municipality of Košice. Despite the territorial demands of the restituents, however, the building of new greenhouses in the Botanic Garden, the repairing and reconstructing of some technical equipment and the implementation of the Ecological educational area in the area next to the greenhouses succeeded. This was completed at the dawn of the 21st century, in 2000.

UPJŠ Botanic Garden in the 21st Century (2001-2020)

In the first decade of the 21st century, various successes appeared in the development of the Botanic Garden, but also various negative tendencies that harmed the development of the Botanic Garden. The declaration of the Botanic Garden as a protected area contributed positively to the increase in the importance of the Botanic Garden as an important natural unit. This happened in 2002, when

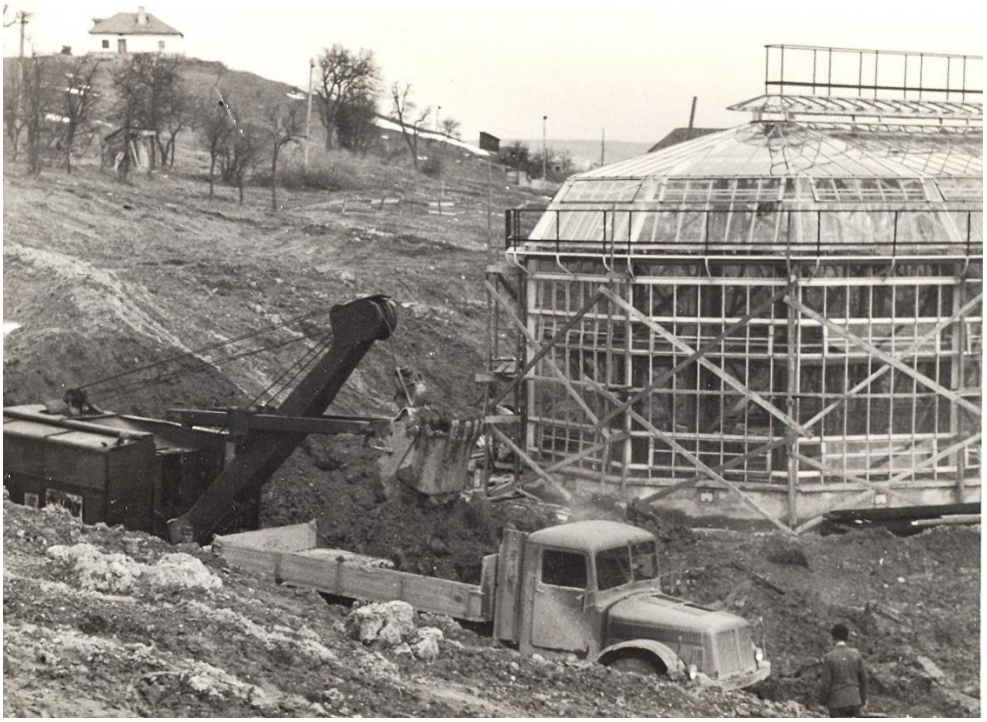


Fig. 3 Almost ungrown area of the botanical garden and construction of greenhouses (Photo: archive of the BG, 1956).

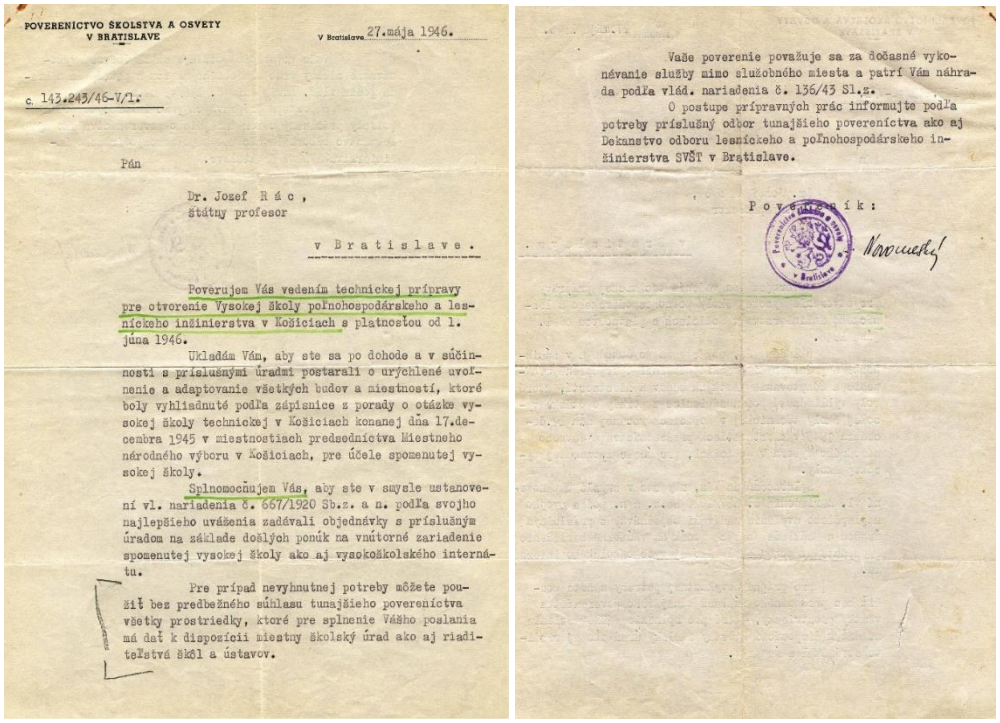
the Decree of the Regional Authority in Košice No. 1/2002 of 21 March 2002 declared the Košice Botanic Garden a Protected Area "in order to protect an important didactic and scientific research workplace, which is the only one in East Slovakia focused on preserving the gene pool of wildlife and cultural species of the flora of the tropics to temperate zone, and which is an important landscape-creating and eco-stabilising element of the Košice district". Due to the non-settlement of the land lots of the Botanic Garden with their owners, efforts appeared with greater or lesser intensity to cut off part of the land in order to build family houses. Moreover, at the beginning of the millennium, especially after 2003, opinions also appeared in the University management that were incompatible with the mission of the BG and there were efforts to change the BG into a production garden centre, which would largely finance its professional and teaching activities. In April 2006, a programme for the biological protection of species was launched in greenhouses, which significantly reduced the use of chemicals against pests. This allows employees and visitors to the BG to feel safer in its premises. Although it is sometimes very difficult to estimate the dynamics of the relationship between pests and their predators and experimental solutions are needed, the BG remains true to this programme, which has not been maintained in some BGs around the world. In order for visitors to understand biological protection, it is also necessary to keep them informed and educated in what they may notice on plants. At the end of the first decade of the 21st century, opinions on the need for financial self-sufficiency of the BG gradually changed, but the efforts of the Dominican Convention to monetise the BG lands intensified. The situation became unbearable, and the most important parts of the BG were threatened with extinction. After long negotiations between the Dominican Convention and P. J. Šafárik University, which also involved the Ministry of Science, Research, and Sports and the Ministry of Finance of the Slovak Republic, we managed to find millions in financial resources for the final purchase of the Dominican land for UPJŠ. This happened in 2014 and then the Rector of UPJŠ, Prof. MUDr. Ladislav Mirossay, DrSc., has a substantial merit for this. The Botanic Garden could take a deep breath and start a new stage in its history. In the same year, the beekeeping nature trail was completed and the UPJŠ BG was awarded the Košice Self-Governing Region Prize. We write about the modernisations launched elsewhere, but scientific research and involvement in the projects of various agencies, as well as scientific and teaching activities of the BG are also being developed. However, the number of employees has been gradually declining to its minimum, down to 38 people in 2018.

Collection fund

After the establishment of the botanical garden in 1950, there was only relatively poor vegetation in its territory. Since no greenhouses had yet been built, there was not even a collection of tropical or subtropical plants. Gradually, trees were planted in the arboretum, plant beds of ornamental plants were established. A model school plot was built, which corresponded to the need for education of future teachers

(later this part was cancelled). After the opening of greenhouses (14th October 1958), the acquisition of tropical and subtropical plants began. The plants were exchanged with other botanical gardens, ornamental plant growers and interest clubs, e.g., cactus keepers, citrus keepers, etc. The seed exchange catalogue, the so-called *Index Seminum*, was important for the building of the collections. Košice Botanic Garden published its *Index Seminum* in 1954 for the first time and exchanged it with gradually increasing number of botanical gardens and similar workplaces around the world (more about *Index Seminum* in the section on international cooperation). Botanic gardens also obtain plants by direct expeditions to other continents. Such expeditions took place in the 90s of the 20th cent. to Mexico, Nicaragua, and Thailand. However, in addition to financial demands of such expeditions, it is currently very difficult to obtain rare species directly in the wild due to global plant protection. Detailed information on the collections up to the year 2000 is given by Mochnacký (2000). The first more comprehensive information about the collections of the Botanic Garden is from 1982, when the first catalogue of plant collection was published under the name *Enumeratio Plantarum*. It lists 3,086 species and cultivars of higher plants. The second catalogue from the year 1989 gives 2,829 taxa. Gradually, the collection size stabilized at around 4,000 species, subspecies, and cultivars of higher plants. The assortment of plants in the Botanic Garden of P. J. Šafárik University focused for many years on orchids, bromeliads, cacti, and succulents, as well as tropical and subtropical utility plants, carnivorous plants, and also an assortment of woody plants from various continents as well as annual and perennial herbs in ornamental plant exhibitions. In 2020, a new, 7th catalogue of plant collections was published. Since this issue it has been published as a regular publication with an ISBN, both in printed and digital form with DOI (Mártonfiová & Mártonfi 2020). The collection fund of the botanic garden consists of plants naturally occurring in the area, cultivated plants originating from all phytogeographical regions of the world, as well as a wide range of man-made cultivars. There are: the largest collection of cacti and cycads in Slovakia, unique orchids, or rare specimens of various tropical and subtropical plants, as well as the attractions in the form of "living fossils" such as *Wollemia*, *Ginkgo* and *Sequoiadendron*. Six hundred and fifty-two plant species endangered according to CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) are grown in the botanic garden as well as 39 autochthonous plant species protected by National Council of the Slovak Republic Law Act No. 543/2002 Coll. According to the current revision in this catalogue, there are 4,136 species, subspecies, and cultivars of plants in the collections of the botanic garden. However, this number varies in individual years, as the collections are enriched by further plants, but there is also a natural loss. At present, the assortment is placed both in exhibition greenhouses, intended for the public and in growing spaces, which are inaccessible to the general public. Within the exhibitions, visitors are always interested in 6 exhibition greenhouses. There are various species of tropical and subtropical plants from palm trees, bromeliads, banana trees, bamboos through various utility species and ornamental orchids.

Large collection of cycads and the largest collection of cacti and succulents in Slovakia is a rarity. It includes more than 650 species and intraspecific taxa of cacti and hundreds of species of succulents in a total of about 11,000 specimens. The outdoor area of the Botanic Garden - an arboretum - provides a space for the wide range of domestic and foreign woody plants from all over the world. The project of Dendrological Educational Trail, which is to be open in 2021 will make these species more visible. In this trail, 80 selected taxa will be described in detail. At the same time, further projects will enrich the assortment by further woody plants, which are either rare, or interesting from other points of view. In addition to the arboretum, the visitors can see, particularly in the lower part of the botanic garden (the so-called ecological educational area and its surroundings, lakes) exhibitions of ornamental and utility plants within various thematic groups, e.g. aquatic and swamp plants, rock plants, bulb and tuber plants, utility fruit species and vegetables, medicinal, aromatic and spicy plants, beekeeping plants (this exhibition is completed by Beekeeping Educational Trail), ornamental grasses, bamboos, exhibition of exotic species in outdoor conditions. In 2019, the assortment of varieties of ornamental roses from the renowned English company "David Austin Roses" substantially supplemented rose collection in the Botanic Garden. Specific exhibition is represented by “Plants of Our Surroundings”. Visitors can get acquainted with common species they meet in Slovak nature there.



POVEREníCTVO ŠKOLSTVA A OSVETY
V BRATISLAVE

V Bratislave 27. mája 1946.

č. 143.243/46-V/1.

Pán

Dr. Jozef R á c ,
štátny profesor

v B r a t i s l a v e .

Poverujem Vás vedením technickej prípravy pre otvorenie Vysokej školy poľnohospodárskeho a lesníckeho inžinierstva v Košiciach s platnosťou od 1. júna 1946.

Ukladám Vám, aby ste sa po dohode a v súčinnosti s príslušnými úradmi postarali o urýchlené uvoľnenie a adaptovanie všetkých budov a miestností, ktoré boly vyhliadnuté podľa zápisnice z porady o otázke vysokej školy technickej v Košiciach konanej dňa 17.decembra 1945 v miestnostiach predsedníctva Miestneho národného výboru v Košiciach, pre účele spomenutej vysokej školy.

Splnomocňujem Vás, aby ste v smysle ustanovení vl. nariadenia č. 667/1920 Sb.z. a n. podľa svojho najlepšieho uváženia zadávali objednávky s príslušným úradom na základe došlých ponúk na vnútorné zariadenie spomenutej vysokej školy ako aj vysokoškolského internátu.

Pre prípad nevyhnutnej potreby môžete použiť bez predbežného súhlasu tunajšieho poverenictva všetky prostriedky, ktoré pre splnenie Vášho poslania má dať k dispozícii miestny školský úrad ako aj riaditeľstvá škôl a ústavov.

Vaše poverenie považuje sa za dočasné vykonávanie služby mimo služobného miesta a patrí Vám náhrada podľa vlád. nariadenia č. 136/43 Sl.z.

O postupe prípravných prác informujte podľa potreby príslušný odbor tunajšieho poverenictva ako aj Dekanstvo odboru lesníckeho a poľnohospodárskeho inžinierstva SVŠT v Bratislave.

P o v e r e n í k :

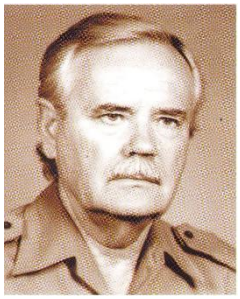
Fig. 4 Authorization of Dr. Jozef Rácz for the establishment of the University of Agricultural and Forest Engineering (archive of MUDr. Vladimír Rácz).

Tab. 2 Directors of the Botanic Garden of P. J. Šafárik University in Košice.

Assoc. Prof. RNDr. Jozef Rácz, CSc. (*4th October 909 in Belža - †20th September 1984 in Košice, buried in the cemetery in Belža) studied Philosophy and Natural History at the Faculty of Science, Charles University in Prague (1939). In 1956 he was awarded the degree of CSc. at Charles University in Prague and since 1964 he was an Associate Professor (Charles University in Prague). He worked in various positions, among others as the head of the Agricultural and Forestry Engineering College Institute of Botany in Košice in 1948-1952 and **until 1956 he was the first Director of the Botanic Garden in Košice**, and in 1964-1972 he was the head of the Department of Botany, Faculty of Science of P. J. Šafárik University in Košice. He researched secondary wood and later researched weeds. He is the author of textbooks, separate publications, and numerous papers in journals.

Assoc. Prof. Ing. Vít Bojňanský, DrSc. (*25th May 1921 in Bojničky - †28th April 2009 in Bratislava) studied Agricultural Engineering at the Slovak Technical University (SVŠT) in Bratislava (1946), was awarded the degree of CSc. in 1959, appointed Associate Professor in 1962, DrSc in 1967. He worked in several positions - **from 1956 to 1958 he was the Botanic Garden in Košice Director**, from 1959 to 1990 was employed at the Institute of Experimental Phytopathology of the Slovak Academy of Sciences in Ivanka pri Dunaji, as well as a visiting professor in the USA and Nigeria. His field of interest was in Seed Phytopathology and Morphology, he authored 32 books and over 500 scientific and professional articles.

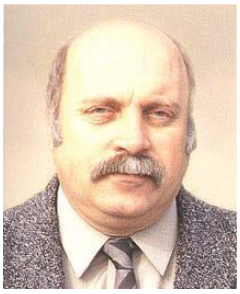
Ing. Anton Laffers, CSc. (*15th February 1925 in Malacky – †2nd August 2001 in Zvolen, buried in the cemetery in Malacky) graduated from the Agricultural and Forestry Engineering College in Košice (1949), later was awarded the degree of CSc. (1966). In the years 1954 -1960 he worked **in the Botanic Garden in Košice, in 1958-1960 as its Director**. He later worked at the Arboretum of Mlyňany and at the Research Institute of Forestry in Zvolen. He devoted himself to the cultivating and genetics of forest trees. He is the author of 3 books, 87 scientific papers and studies and a number of professional and popular papers.



Ing. Tibor J. Antoš, CSc. (*9th April 1925 in Košice – †3rd March 1990 in Košice) graduated from the Agricultural and Forestry Engineering College in Košice (1950), worked among other positions at the Košice branch of the University of Agriculture (VŠP) in Nitra, **between 1960 and 1963 he was the Director of the Botanic Garden**, from 1964 to1977 he worked at the Faculty of Education in Prešov of P. J. Šafárik University in Košice and then again as **the Director of the Botanic Garden of P. J. Šafárik University in the years 1980-1988**. He is the author of several textbooks (Plant Physiology, Seed Plant System, Geobotany).

Tab. 2 - cont.

Ing. Karol Nagy, CSc. (*21st January 1924 in Abranovce – †10th April 1994 in Košice) graduated from the State Higher Forestry College in Banská Štiavnica, until 1949 Forestry Department of the VŠPLI in Košice (1949), worked in the Forestry Research Institute in Banská Štiavnica until 1955, **later in the Botanic Garden in Košice, where he held the position of its Director between 1964 and 1979**. He first devoted himself to Pedology, later to the cultivating the tetraploid clover, and is the author of several scientific papers.



Assoc. Prof. Sergej Mochnacký, CSc. (*18th August 1953 in Snina) graduated from the UPJŠ Faculty of Science in Košice (1976), RNDr. (1981, UPJŠ FS), CSc. (1988, SAS), Assoc. Prof. (2000, TU of Zvolen). He first worked as researcher at the Institute of Experimental Biology and Ecology of the Centre for Biological and Ecological Sciences of the Slovak Academy of Sciences in Bratislava, Košice branch, and **from 1989 as the Director of Botanic Garden of P. J. Šafárik University in Košice until 2018**. He focused mainly on Phytocoenology with a focus on synanthropic vegetation and ecological issues of the East Slovak Lowland. He is the co-author of a university textbook, editor and author of a monograph on Slovak Botanical Gardens and Arboretums, the author of over 35 scientific papers and many professional and popular scientific articles.

Prof. RNDr. Pavol Mártonfi, PhD. (*14th January 1964 in Košice) graduated from the Faculty of Science of P. J. Šafárik Unuiversity (UPJŠ FS) in Košice (1989), RNDr. (1990, UPJŠ FS), PhD. (1997 Charles University in Prague), Assoc. Prof. (2000, UPJŠ FS), Prof. (2011, UPJŠ FS). Since 1990, he has worked at the Faculty of Science of P. J. Šafárik University in Košice, in 2011-2018 he held the position of Vice-Dean for Science, Research, and Development, and **since 2018 he has been the Director of the Botanic Garden of P. J. Šafárik University**. He researches into Systematics, Chemosystematics, Taxonomy, and Reproductive Biology of Plants. He is the author of a university textbook on the Systematics of Vascular Plants, more than 80 scientific papers published mainly in international journals, as well as the author of many popularisation outputs.

(according to: Golian et al. 2015; data supplemented also by Daniel Laffers (in litt. 2021); the grandson of A. Laffers; Janitor & Šípošová 2010; Repčák 2010a; Repčák 2010b; Repčák 2010c).

Reconstruction, Modernisation, and Development Activities

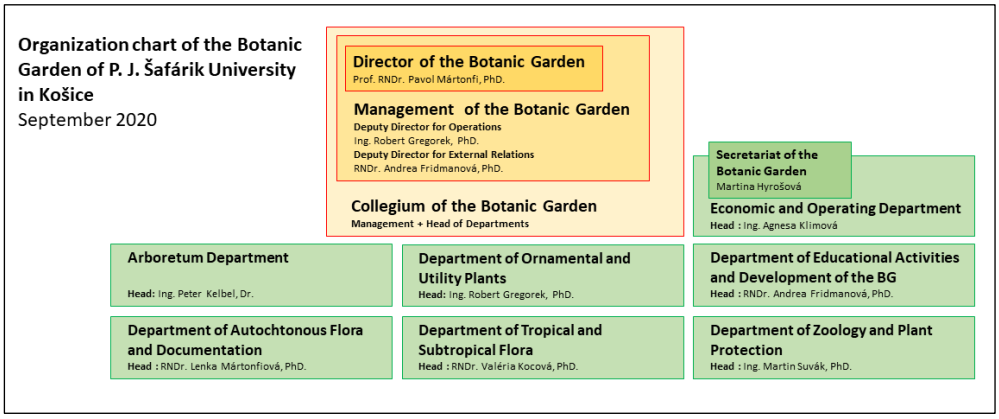
In 2000, the Botanic Garden celebrated its fiftieth anniversary. On the one hand, this meant that it was an established institution, on the other hand, it began to show that many buildings and technical devices in the BG area required not just minor repairs, but also general reconstructions or modernisations (Fig. 5). After Slovakia's accession to the EU, one of the possible sources for financing these repairs was from

the European Union, but many of the possible solutions were not feasible precisely because UPJŠ was not the owner of the land on which investments were to be made. Therefore, the purchase of the vast majority of land into the ownership of UPJŠ was already mentioned as a big plus. This has made it possible to take part in the calls that were not possible before. Fortunately, part of the land has always been owned by the University. After the year 2000, various problems with the operation of the BG began to arise. At least in part, better times began to show during the term of the Rector of UPJŠ, Prof. MUDr. Ladislav Mirossay, DrSc. In office and the great support of the development of UPJŠ BG is granted now by the Rector, Prof. RNDr. Pavol Sovák, CSc. In 2014 - 2015, the cladding of the main exhibition greenhouses was carried out, followed in 2016 by the reconstruction of greenhouses (the so-called northern extensions). In the years 2016 - 2017, the heating of greenhouses underwent reconstruction and in the years 2017 - 2019 the cladding of one of the side greenhouses took place every year (thanks to the company U.S.Steel, which provided funds for the modernisation of one of the greenhouses in 2018). In 2019, it proved necessary to invest in the administrative building itself, which, 50 years after its opening, no longer met the requirements for, for example, the quality of electrical and computer networks. Therefore, UPJŠ invested funds for complete modernisation of electrical installations, lighting, computer networks, as well as modernisation of the working environment of employees, reconstruction of the entrance hall, but also modifications to the exterior - modernisation of the lower lake in the area, several parts of the fence and several minor modifications. Many alterations and reconstructions continued in 2020, the most important of which the modernisation of water distribution systems must be considered, which, with the increasing aridity of the environment, are a very important part of the life of the Botanic Garden. In 2020, UPJŠ managed to obtain European Union funds, which will be used in 2021 to insulate the building and replace windows, but UPJŠ itself decided to invest in the construction of a modern visitor centre instead of the existing gatehouse. The total cost of renovations in 2021 will exceed € 1.00 million.

Scientific activities, home and international cooperation

Since the period when the BG belonged to the Slovak Academy of Sciences, BG has also been characterized by its activities in science and research. In the 50's there was a biochemical laboratory in BG, which dealt with the research of photosynthesis and algae cultivation for production purposes. For several years, two radioactive cobalt emitters also operated to monitor the chronic effects of radiation on plants and to induce mutations. Significant scientific activities in the later period included, for example, the breeding of clover, and in the 1980s BG cooperated with the Department of Special Botany of the Faculty of Science of P. J. Šafárik University on the breeding and cultivation of medicinal plants, such as low-stemmed linden (*Tilia* sp.). In the 1990s, resources were obtained to study endangered species in the East Slovakian region, e. g., *Scilla buekkensis*, *Fritillaria meleagris*, *Erythronium dens-canis*, *Leucojum vernum*, *L. aestivum*, *Linaria alpina*, *Armeria alpina* and *Onobrychis*

Tab. 3 Organization chart of the Botanic Garden of P. J. Šafárik University in September 2020.



montana, at the beginning of the 21st century also for the revitalization of rare species as *Trollius altissimus*, *Pulsatilla zimmermannii* and *Ferula sadleriana*. By means of grant agencies, BG employees, as the main researchers or as the members of the research teams, obtained resources for solving the projects mainly in the field of reproductive biology and microevolution in apomictic and sexually reproducing species in the genera *Taraxacum*, *Hypericum*, *Sorbus*, *Thymus* and *Onosma*. They also participated in phylogenetic and systematic studies of the genera prepared for the work Flora of Slovakia, especially from the families Asteraceae and Brassicaceae, but also other ones (e.g., the genera *Viola*, *Fumaria*, *Homogyne*, *Adenostyles*, *Petasites* and other). In recent years the next topic appeared – the problems of endopolyploidy in several groups of angiosperms (e.g., *Trifolium*, *Corydalis*). However, an important part of the research is represented also by the studies on pests and new animal species in the Botanic Garden of P. J. Šafárik University. These projects were / are solved either individually or in cooperation with other institutions - especially the Faculty of Science of P. J. Šafárik University in Košice and the Slovak Academy of Sciences, the main one was the Institute of Botany of the Slovak Academy of Sciences in Bratislava, which is currently a part of the SAS Center for Plant Biology and Biodiversity. In 2020 the BG joined an international research „Preparatory work for monitoring the spread of *Agrilus planipennis* (EAB) in eastern Europe", which deals with the occurrence of this pest in the species of the genus *Fraxinus*. The research is carried out within the cooperation of the BGCI (Botanic Gardens Conservation International) association and the companies Fera Science Ltd. and Plant Sentinel Network. Cooperation with domestic institutions is also developing. We are preparing a scientific evaluation of the hitherto unexplored herbarium of the Andrassy family from the beginning of the 19th century, which is stored in the Slovak National Museum - Betliar Museum. The involvement in the projects is also reflected in publication activities, for example in the last 5 years (2016-2020) the BG staff are the authors or co-authors of 2 university textbooks, 19 original scientific works (13 of them in the journals included in Current Contents database) and many conference papers as well as specialist and compilation work.

Specific activities in the Botanical Garden are related to the herbarium collection, which are the subject of a separate paper (Mártonfiová et al. 2021). As we have already mentioned, since 1991 Botanical Garden of P. J. Šafárik University has been publishing the scientific journal Thaiszia – Journal of Botany. Besides the other world databases, the journal has been indexed in the WOS / BIOSIS (Biological Abstracts) database since 2006 and in the SCOPUS database since 2009. At present, it belongs to the so-called Open Access journals with the accessibility of all published volumes in the online space. In 2020 it completed 30 years of its existence and the 30 volumes of the journal (including supplements) comprised 6,059 pages, published 406 scientific papers by 543 authors from all continents (except for Antarctica). In addition to the papers, there were a lot of book reviews and personals. International seed exchange is associated with the publication of the *Index Seminum* and has been active since 1954. During more than 65 years huge number of seeds were obtained to enrich the collection of the Botanic Garden of P. J. Šafárik University, but also many our seeds were sent all over the world. For example, in 2020, the *Index Seminum* was sent electronically to addresses of about 350 workplaces and the Botanic Garden of P. J. Šafárik University obtained 248 seed samples and distributed a total of 449 seeds samples to 68 institutions in the world.

The seed exchange is surely the largest specific form of cooperation among the botanic gardens all over the world. However, the Botanic Garden is also a member of various domestic and international associations, such as ZABOZAS - Association of Arboretums and Botanic Gardens of Slovakia; IABG - International Association of Botanic Gardens, we are a part of the International Agenda for Botanic Gardens of the Botanic Gardens Conservation International and the most recently of the Climate Change Alliance of Botanic Gardens. Informal cooperation and exchange of experience mostly based on personal relationships of employees exists between our botanic garden and the most botanic gardens and arboretums, but also other botanical institutions in Slovakia and the Czech Republic, but also with several botanic gardens in Poland, Royal Botanic Gardens Kew in London, and the Botanic Garden of Uzhhorod National University. The solution of the cross-border cooperation project is currently underway (the grant was provided by the Interreg SK-HU organization, Botanic Garden of P. J. Šafárik University is the leading partner of this project): The use of woody plant collections of the botanical gardens in cooperation with Tuzson János Botanical Garden, which belongs to the University of Nyíregyháza in Hungary. In 2021, as part of this cooperation, a dendrological educational trail with relaxation zones for visitors should be opened in Košice.

Educational activities, exhibitions and cultural events

The Botanic Garden of P. J. Šafárik University, as a scientific and teaching unit participates in the teaching of the P. J. Šafárik University students. The Department of Botany of the Institute of Biological and Ecological Sciences, Faculty of Science of P. J. Šafárik University, is the natural partner for this BG. The BG employees teach at the Bachelor's degree level in the single-departmental and interdisciplinary study of

Biology, as well as at the Master's degree level in the field of Botany and Plant Physiology and in the field of Teaching Academic Subjects - Biology. Independently or in cooperation with the staff of the Department of Botany or the staff of other departments of the Institute of Biological and Ecological Sciences, they teach courses of Botany II, Plant Taxonomy, Phytogeography, Evolutionary Biology, Integrated Plant Protection, Plant Embryology, Dendrology, and General Botany and also provide exercises in Plant Physiology. They also supervise Bachelor's and Master's degree theses of students in these fields, some of whom act as supervisors or consultants in the PhD. degree in the field of Plant Physiology.

A special chapter of adult education represents the involvement of the Botanic Garden in the University of the Third Age (U3A) at P. J. Šafárik University. The Botanic Garden guarantees the study programme of "Plants in the Environment", where it offers the standard three-year study and, for those who are persistent, a fourth one, the extension year is offered. Students at the University of the Third Age will get acquainted with the theoretical foundations of Botany, Plant Evolution, Phytogeography and imaginatively visit remote areas of the Earth through lectures and practical exercises by the BG staff and the Department of Botany of the Institute of Biological and Ecological Sciences of the Faculty of Science of P. J. Šafárik University. Much of the teaching is focused on cultivating, treating, and protecting plants that students encounter when growing in gardens, but also when cultivating exotic plants such as cacti or citruses, medicinal plants, or ornamental bulbs. The great interest of the participants is also related to lectures on garden and landscape creation and the application of modern methods and elements in these industries. After the third grade, the graduates are awarded a diploma at graduation.

Of the activities for schools, the unique Botanikiáda event, intended for pupils in the 5th form of primary schools, has become very popular in recent years. In 2019, the tenth year of this original event of the Botanic Garden of P. J. Šafárik University took place. At its beginning there was the team of the workers of the Botanic Garden and the project proposer Beáta Jurečková. This project is intended for pupils in the fifth form of primary schools in the Košice and Prešov self-governing regions and their teachers. The main goal of the project is to get the talented pupils interested in the field of botany through a game and inform them in a friendly way about the importance of plants, environment protection and creation. At the same time, it should motivate science teachers to be more creative in their teaching. The schools are much interested in the project, which is proven by the numbers: during the ten years of the project, 27,637 pupils took part in the online testing and 2,130 pupils with their teachers personally took part in the regional round in the botanical garden. Unfortunately, the covid-19 pandemic negatively affected the realization of the event and in 2020 and 2021 Botanikiáda could not take place.

At the beginning of the 21st century, the number of visitors to this Botanic Garden was around 10-15 thousand a year, and the staff realised that various development activities were needed that would attract residents and tourists to this BG in addition to regular visitors. This would also improve admission revenue. The alpha and omega

of these events were mainly in exhibitions (Fig. 6), of which the most attractive ones for visitors were the Exhibition of Exotic Butterflies (first organised in 2008) and the Exhibition of Orchids (first organised in 2009). These, as well as other exhibitions and ventures, increased attendance in multiplies. This then changed over the following years depending on whether the operation of the BG has been restricted due to any of the reconstructions or the Covid-19 pandemic. In the years with the best attendance (2009 and 2018), almost 45,000 paying visitors visited this Botanic Garden. Other popular exhibitions include exhibition of bonsai, exhibition of cacti and succulents, beekeeping exhibition, exhibition of citruses, exhibition of medicinal plants, exhibition of autumn fruits, exhibition of mussels, paleontological exhibition of Stone Herbarium, but also others, e.g., an exhibition of luminescent plants in cooperation with partners from Hungary as a novelty in 2018. For groups, especially from schools, BG employees also provide the so-called thematic guidance, for example on the following topics: Made of Plants, Exotics on a Plate, Best in the Plant Realm, etc. What is also very popular with visitors is the so-called experiential guidance conceived with testing the smell and taste of many medicinal or spicy plants. Also popular is a series of events designed in August, mainly for children - We Are Looking for Muses in the Botanic Garden, where children may play in creative ways.

In addition to these events, the Botanic Garden cooperates with a wide range of organisations and develops various activities. Volunteer Day is regularly organised, which is repeatedly attended by employees of the U.S.Steel Košice, meetings are held by various associations, such as the League Against Cancer, the Czech Association in Košice, and the BG also supports the Citrus Club, Beekeepers Association, Horticultural Association and Bonsai Club. As is customary with many botanic gardens abroad, exhibitions of various artists are also organised in this BG premises, among the first were the exhibition of characters by a fairy tale illustrator Vítězslava Klimtová and Petr Smik's installation, "Garden and Ceramic Object" (both in 2012), the exhibition of "Genetic Data Discs ”by Matúš Lányi (2017), an exhibition of photographs, "Images of Being” by Daniel Čičvák (2018) or interesting sculptures by Boris Sirka, “Petrified Gesture”(2020) and installation of paintings among tropical plants in greenhouse called “Clay and Insects” by Andrej Dúbravský in 2021. Since 2019, the UPJŠ BG has been cooperating in art exhibitions with the East Slovak Gallery in Košice. Cooperation is also developing with the organisation Creative Industry Košice (CIKE), which is dedicated to the support and development of Culture and Creative Industry, thanks to which this BG participated, for example, at the Art & Tech Days 2019 exhibition. The summer concerts in the Botanic Garden have been a complete novelty since 2020, which were organised on the occasion of the 70th anniversary of the UPJŠ BG. The first three concerts featured: the Musica Iuvenalis Association, the singer Katka Koščová performed and a recording of the Regina Radio entertainment show "Smiley" took place.

Fig. 5 A) Reconstruction of main exhibition greenhouses (2014). Photo: archive of the BG.

Fig. 5 B) modernization of entrance hall (2019). Photo: archive of the BG.

Fig. 6 A) From temporary and permanent exhibitions: Exhibition of orchids (2019).

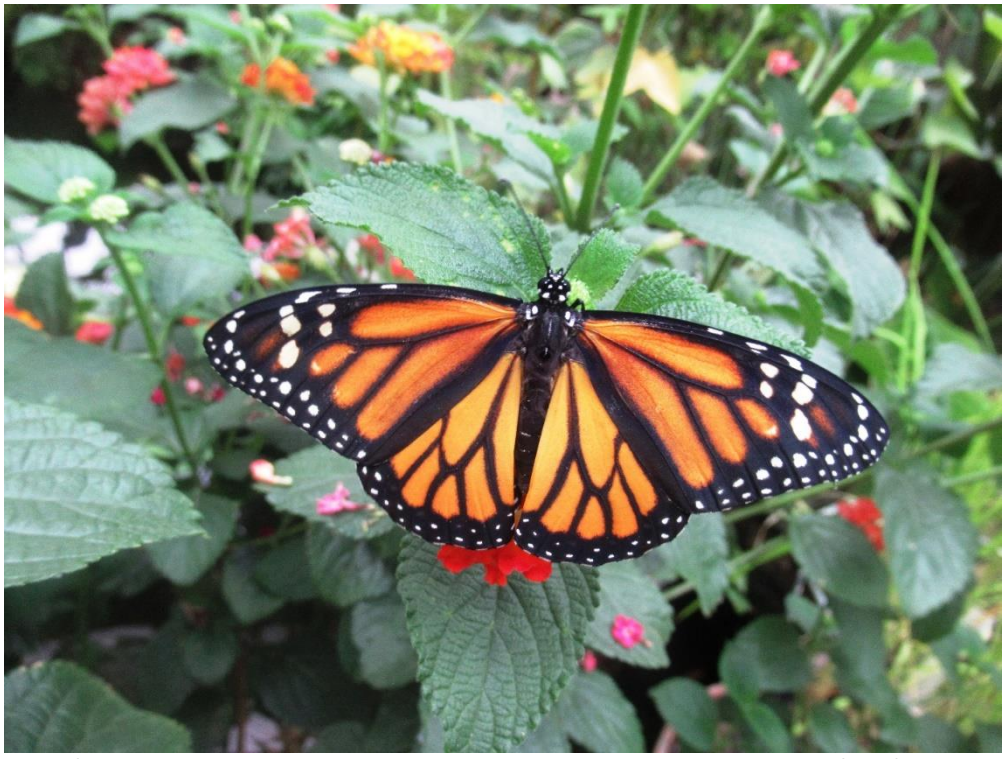


Fig. 6 B) From temporary and permanent exhibitions: Butterfly show in greenhouse (2018).

Fig. 6 C) From temporary and permanent exhibitions: Beekeeping exhibition (2018).

Fig. 6 D) From temporary and permanent exhibitions: From permanent exhibition of cacti (2014).

Fig. 6 E) From temporary and permanent exhibitions: Outdoor exhibition (2020).

Fig. 6 F) From temporary and permanent exhibitions: Winter in botanic garden (2019). Photos A-F: archive of the BG.

Visitors to the Botanic Garden are informed on the events in the radio and television media, billboards in the city of Košice and its surroundings, and currently mainly through the Botanic Garden of P. J. Šafárik University channels on the social networks Facebook, Instagram, and Twitter.

Conclusion

We looked into the rich history and current activities of the UPJŠ Botanic Garden in Košice. After 70 years of its existence, it is an established part of Pavol Jozef Šafárik University with a good reputation among scientific and cultural institutions in the region of East Slovakia. It has its mission within the protection of the photogene pool and scientific or educational activities. Unfortunately, we do not have exact data on its attendance rate for the entire period of its existence, but we have estimated that we have jumped to the second million in these years. We believe that in each visitor we have left at least a crumb of knowledge about the beautiful plant realm and how it is necessary to protect our world and the environment of which we are an integral part.

Acknowledgement

I am thankful for the cooperation in preparing of the paper in particular to RNDr. Lenka Mártonfiová, PhD., RNDr. Andrea Fridmanová, PhD., Ing. Daniel Laffers, Ing. Martin Suvák, PhD. and many other collaborators who contributed more or less data to this paper.

References

Antoš T. J. (1962): Botanická záhrada Pedagogického inštitútu v Košiciach. – Sborn. Vsl. Múz. III A: 262–269.

Eliáš Š. (1991): Začiatky existencie botanickej záhrady v Košiciach 1950-1959. – Zprav. Bot. Záhr., Praha, 39: 5–16.

Futák J. (1980): Fytogeografické členenie. – In: Mazúr E. (ed.): Atlas Slovenskej socialistickej republiky. – Veda, Bratislava, p. 88.

Golian J., Juhásová G., Cejpek K., Marcinčák S., Sobocká J., Kukla J. & Dandár A. (2015): Osobnosti pôdohospodárskych vied. – Slovenská spoločnosť pre poľnohospodárske, lesnícke, potravinárske a veterinárske vedy pri SAV v Bratislave, 91 pp.

Janitor J. & Šípošová H. (2010): Bojňanský, Vít. – In: Vozárová M. & Šípošová H. (Eds.): Osobnosti botaniky na Slovensku. – Veda, Bratislava, p. 71–72.

Mártonfiová L. (ed.) (2021): *Index Seminum* 2021. – Univerzita Pavla Jozefa Šafárika in Košice, 13 pp. ISBN 978-80-8152-967-2 (e-publication) DOI: https://doi.org/10.33542/IS2021-967-2.

Mártonfiová L., Dudáš M., & Mártonfi P. (2021): Herbarium of the Botanical Garden of Pavol Jozef Šafárik University in Košice – a part of the botanical history of the region of eastern Slovakia. – Thaiszia – J. Bot. 31: 47–68. https://doi.org/10.33542/TJB2021-1-04

Mártonfiová L. & Mártonfi P. (eds.) (2020): Catalogue of Plant Collections No. 7. – Pavol Jozef Šafárik University in Košice, 120 pp. ISBN 978-80-8152-883-5 (PRINT), ISBN 978-80-8152-884-2 (ONLINE), DOI: https://doi.org/10.33542/COP2020-884-2

Michalko J. et al. (1986): Geobotanická mapa ČSSR. Slovenská socialistická republika – Veda, Bratislava, 165 pp., under separated cover 12 maps (color.).
Mikoláš V. (1991): Lajos Thaisz - The founder of scientific botany in Košice. – Thaiszia – J. Bot. 1: 3–16.
Mochnacký S. (2001): Botanická záhrada Univerzity Pavla Jozefa Šafárika v Košiciach. – UPJŠ, Košice, 85 pp. + 24 col. tab., ISBN 80-7097-475-3.
Mochnacký S. (2013): Univerzita Pavla Jozefa Šafárika v Košiciach Botanická záhrada, Pavol Jozef Šafárik University in Košice Botanical Garden. – In: Mochnacký S. et al.: Botanické záhrady a arboréta Slovenska. Satus, Košice, pp. 42–84.
Quitt E. (1971): Klimatické oblasti Československa – Climatic regions of Czechoslovakia. Appendix: A Coloured Map of Czechoslovakia's Climatoregions 1:500000. Studia Geographica 16, Brno.
Repčák M. (2010a): Antoš, Tibor J. – In: Vozárová M. & Šípošová H. (Eds.): Osobnosti botaniky na Slovensku. – Veda, Bratislava, p. 48–49.
Repčák M. (2010b): Nagy, Karol. – In: Vozárová M. & Šípošová H. (Eds.): Osobnosti botaniky na Slovensku. – Veda, Bratislava, p. 363–364.
Repčák M. (2010c): Rácz, Jozef. – In: Vozárová M. & Šípošová H. (Eds.): Osobnosti botaniky na Slovensku. – Veda, Bratislava, p. 430–431.
Suvák M. (2008): Drobnička *Coenosia attenuata* – vítaný lovec ve sklenících. – Živa, roč. LVI (XCIV), č. 3, s. 128–130.
Suvák M., (2011): Predatory and parasitic insects in greenhouses of Botanical Garden of P.J.Šafárik University in Košice, Slovakia. Thaiszia – J. Bot. 21(2): 185–205. ISSN 1210-0420.
Suvák M., (2013a): Botanická záhrada UPJŠ v Košiciach nie sú len izolované rastliny [Botanical Garden of PJŠU in Košice are not only isolated plants]. – Enviromagazín 18(2): 28–29, ISSN 1335-1877; http://www.enviromagazin.sk/enviro2013/enviro2/20_botanicka.pdf.
Suvák M., (2013b): Invasive spider *Uloborus plumipes* Lucas, 1846 (Araneae: Uloboridae), new to Slovakia. – Folia faun. Slov. 18 (1): 39–45. ISSN 1335-7522.
Suvák M., Gregorek R. & Pľuchtová M. (2012): Actual and potential role of parasitoids (Hymenoptera: Eulophidae) in control of water-lily beetle *Galerucella nymphaeae* (Coleoptera: Chrysomelidae) in conditions of Botanical Garden of P.J. Šafárik University in Košice (Slovakia). – Thaiszia – J. Bot. 22 (2): 217–242. – ISSN 1210-0420.

Received: July 25th 2021
Revised: August 3rd 2021
Accepted: August 4th 2021