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The Dendrological Garden in Przelewice

Ogród Dendrologiczny w Przelewicach

Katarzyna MISIAK, Maria Jolanta SYCZEWSKA

Summary Przelewice Dendrological Garden came into being as a private collection of a tree and shrub lover who strongly believed mankind had been destined to manage nature so that its existence made sense. The man in question took the palace park he found and reshaped it to his own taste and designs whilst preserving numerous elements of previous owners. All successive garden keepers have tried to enrich this picturesque parcel of land to the best of their knowledge and skills whilst preserving the fruits of the work of their predecessors. The Dove tree (*Davidia involucrata*), whose flower became a symbol of the garden and is embodied in the coat of arms of Przelewice Borough, is listed in the World Red Book of endangered and extinct plants worldwide. There are more plant species of the same status in the Garden.

Park przypałacowy w Przelewicach – historia zmian w latach 1814-2006

The Palace Park in Przelewice – the history of changes in 1814-2006

Katarzyna MISIAK

Summary The palace park in Przelewice was founded about 1814 probably in tandem with the palace. Every change of palace ownership resulted in changes of park's character and its use; after the Second World War its boundaries were significantly altered. Spatial arrangements were analysed and probable functions of the palace park were defined in the following periods:

- 1801-1821 (owner: August Borgstede) – naturalistic park with an orchard in its southern part according to the project of Hildebrandt
- 1821-1879 (owner: von Prillwitz family) – star-shaped arrangements of park alleys of stronger utilitarian function
- 1879-1922 (owner: Caspar Lachmann) – second naturalization of the park resulting mainly from restricting its use
- 1922-1945 (owner: Conrad von Borsig) – naturalistic, dendrological garden according to the project of its owner and Heydenreicha (an architect) preserving the arrangement of its southern parts
- 1945-1992 (state-owned property) – Dendrological and Pomological Garden;
  its southern part was excluded and 10 hectares of land were added to create tree nursery areas; the period of significant initial loss followed by revalorisation of the project of
  H. Chylarecki
- 1992-2003 (owner: AWRSP, from 1993 Przelewice Borough) – "new" areas were utilized: ponds and former tree nurseries according to the project of Ł. Swiłło
- 2006 (owner: Przelewice Borough) – the end of R&D Botanical project and planned utilisation of terrains attached to the Garden.

The given dates are rough and based on changes of park ownership rather than real dates of changes in the park structure. This analysis of changes was based on available plans, maps and projects together with the real state of park affairs. After map re-scaling and terrain correction 7 uniform plans had been obtained which enabled to monitor spatial and function changes within the park.

Botaniczne Centrum Badawczo-Wdrożeniowe – historia powstania

Research and Development Botanical Center - the history

Maria Jolanta SYCZEWSKA

Summary It was already in the prewar period that the palace-park complex in Przelewice functioned as a private scientific research entity. The project of Conrad von Borsig to create a dendrological collection in Przelewice is still continued thanks to his followers - nature lovers. The only visible change is in the manner the research and works are carried out mainly due to technological and technical advancement. Research and Development Botanical Center in Przelewice is an institution of the highest quality equipped with a state-of- the-art laboratory equipment used to protect and rescue vegetation of Pomerania region on both sides of the border.

Creation of this institution not only resulted in a valuable scientific research center but also enabled to save from ruins old historical sights otherwise doomed.

Botaniczne Centrum Badawczo-Wdrożeniowe jako ośrodek rozwoju gospodarczego i kulturalnego Euroregionu Pomerania

Research and Development Botanical Centre as a Centre of Economical and Cultural Development of Euroregion Pomerania

Maria Jolanta SYCZEWSKA

Summary Creation of the R&D Botanical Centre makes an opportunity to spread educational, scientific and research activities. At the same time it enables to vary its cultural profile and introduce exhibition and conference functions. The glasshouse, the orangery together with tree nurseries contribute to attractions of the Arboretum and enrich tree nursery offer by the production of rare, valuable and attractive species. Constantly growing ecological activity of Przelewice Borough and the need to promote the idea of sustainable development perfectly fits the nature of R&D Botanical Centre.

The Garden, being the only entity of this kind, and R&D Botanical Centre operating within its structure make a great chance for borough and region development. All Centres' activities are in line with the state ecological policy and zachodniopomorskie province strategy of development. Thanks to long-term work of numerous people who built the environment-friendly and green image of the Borough trust was won, which resulted in various subsidies necessary for projects running.

Przelewice Borough can apply for European Union help funds however gaining it equals own financial input as high as minimum 15% of the project cost. European funds can cover only particular activities linked to nature protection, culture, education, youth exchange and all sorts of activities within the field of protection of cultural heritage. European financial help can not used for tree nurseries. This part of Garden's activity must be self-sufficient and self-financed.

The new perspective for Arboretum development has been created. The chance we are facing requires great effort and engagement both from borough authorities and people directly involved in the process of creating new reality. A rule of AGENDA 21 „Think globally act locally" was our guideline in all projects undertaken. Our faith and compliance with this rule resulted in naming our borough "ecological, friendly and active".

Botanical Gardens in the Baltic Region: Values and Arts

Ogrody Botaniczne w regionie Morza Bałtyckiego: wartości poznawcze i estetyczne

Evan STERLING, Tadeusz ANISZEWSKI

Summary The aim of this report is to provide an introduction to botanical gardens and their values in contemporary society. Scientific, educational, recreational, and conservation worth are considered. Further, three botanical gardens of the Baltic Sea region are discussed in depth, with a comparison between the three institutions. Such distinguishing characters of botanical gardens include their history, purpose, special value, and seasonal variation. Botanical gardens are helping to lead society into the future, playing a critical role in sustainable development.

Successful History of Singapore Botanic Gardens

Ogrody Botaniczne Singapuru – historia sukcesu

Paweł KOJS

Summary History of Singapore Botanic Gardens from the very beginning has been connected with the history of the city. Singapore (an island with fishermen's village) was leased in 1819 as a trade unit from the Sultan Johor to East India Company. Already almost 3 years later the first Botanic garden was established on the area. Stamford Raffles, the founder of Singapore (city) as well as a great visionary and strategist pointed not only at perfect location of the island but also at simply ideal climate conditions for vegetation: medium rainfall rate 2500 mm, medium air temperature in January: 25°C and 27°C in June. In 1826 British bought Singapore from Sultan Johor but without financial support and cooperation with the network of colonial gardens wasn't the first Botanic garden able to survive and it was formally closed in 1846 (in fact it was discontinued in 1829). Despite

that its existence was noticed by members of the British Agro-Horticultural Society, who in 1859 by their own means and using their influence brought Singapore Botanic Gardens to existence. From 1867 Singapore constituted a part of British colonies named straight settlements. This important change in the status of the island made the Gardens go under the supervision of British government and they became a part of the British Colonial Gardens network.

Since then Singapore Botanic Gardens have been professionally managed by experts from Royal Botanic Gardens in Kew and they have been playing the role of a scientific institution and a public park. At the time the Herbarium and Library were started and botanical expeditions contributing to the establishment of botanical collections were conducted. Since then there has been intensive plant exchange with other botanical gardens going on. Botanic gardens have contributed significantly to the colonial expansion of the West through active participation in the transfer of protected plants and their scientific development as plantation crops for the tropical colonies of the mother country. Cinchona, rubber, and sisal are prime examples. The new structure of Singapore Botanic Gardens and broad cooperation within the British Colonial Gardens provided the opportunity to conduct a wide range of experiments on *Hevea brasiliensis*, which led to the preparation of methods of latex obtaining without entire damage to trees. Singapore Botanic Gardens had large impact on promoting cultivation of rubber tree on the territory of today's Malaysia which led to the situation in which 50% of the world gum production was run by plantations connected with Singapore Botanic Gardens. It contributed to a large extent to the increase in the economic power of the city.

Kolekcje roślinne Królewskiego Ogrodu Botanicznego Peradeniya w Kandy (Sri Lanka)

Plant collections of Royal Botanic Gardens Peradeniya in Kandy (Sri Lanka)

Jolanta JAŃCZYK-WĘGLARSKA, Karol WĘGLARSKI

Summary Royal Botanic Gardens Peradeniya is located in central part of island, about 6 km near Kandy City (7°17'N, 80°35'E). Botanical Gardens has an area about 60 ha. Collections including about 4 000 taxa, especially: orchids, palms, gymnosperms, flowering trees, medical plants, rare and endangered plants of the tropical rainforests of Sri Lanka. The institution undertakes research on endemic flora, including especially medicinal forest plants, and the conservation of genetic resources. Very important scientific problem is protection "*ex situ*" rare and endangered orchid species, native for Ceylon.

Belgijski Narodowy Ogród Botaniczny

National Botanical Garden of Belgium

Jolanta ADAMCZYK

Summary The private plant collection left by aristocrats during the French Revolution initiated the establishment of National Botanical Garden of Belgium. The contemporary Botanical Garden in Meise near Brussels is the National Garden of Belgium. The garden consists of a wide park with plant collections, greenhouses, Bouchout castle, herbarium, library and laboratories are situated on area of 93 ha.In the park , wich is in English style, collections of herbaceous plants, medical plants, tress and plants of the North America are located. The Bouchout castle wich was built in 12 th century and restored in the 19th century complements the landscape of the park.

Działalność naukowa i dydaktyczna Leśnego Arboretum Warmii i Mazur w Kudypach k. Olsztyna

Scientific and Educational Activities of the Warmia and Mazury Arboretum in Kudypy near Olsztyn

Krystyna KUSZEWSKA, Witold SZUMARSKI

Summary Forest Inspectorate Kudypy, which possesses a classroom, a meeting and lecture hall, a hall designed and equipped for the purposes of environmental education and green schools, a library, an amphitheater for outdoor activities, an art gallery where competition works are displayed, educational paths, and the Warmia

and Mazury Arboretum. The Arboretum was established by the Forest Inspectorate Kudypy in 1997, with the help and support of the Arboretum in Rogowo and the Department of Botany and Nature Protection, University of Warmia and Mazury in Olsztyn. Currently there are 920 plant taxa at the Arboretum. Apart from providing a rich collection of trees, shrub and herbaceous plants, the Arboretum performs educational functions. The visitors can explore relationships between living organisms and the natural environment. The Arboretum covers a total area of over 15 ha. The tree stands are composed mostly of 90– to 170-year old pines, but English oaks, spruces, small-leaved limes, hornbeams and Norway maples can be also found there. Due to the lack of botanical gardens in this part of Poland, as well as rather poor species composition of dendroflora, the Arboretum offers the inhabitants of Olsztyn and the entire Warmia and Mazury region the opportunity to investigate and admire unique trees, shrubs and herbaceous plants. Each year almost 10 000 people participate in various forms of forest education at this center. The results of studies conducted at the Arboretum provided a basis for writing fifteen master's and bachelor's theses.

Projektowany kielecki ogród botaniczny

Projected Botanical Garden in Kielce

Elżbieta CZAJKOWSKA, Stanisław CIEŚLIŃSKI

Summary The paper contains the review of previous plans of organizing the botanical garden in Kielce, as well as the recent conception which are being realized. The garden has been localized in west district of Kielce city, on eastern-south slope of Karczówka hill. The works on the project of future garden are being done. The article presents the detailed characteristic of the area that are devoted for botanical garden and shows organization of work connected with building and main urban and programmed conception of the object. The City Council of Kielce and Świętokrzyska Academy cooperate in building the botanical garden. The field work are going to start in 2007.

Flowering phenology of some mountain plants in the collection of the Botanical Garden in Lublin

Fenologia kwitnienia niektórych roślin górskich w kolekcji Ogrodu Botanicznego w Lublinie

Bożenna CZARNECKA, Monika WŁADYKA, Maria FRANSZCZAK-BYĆ

Summary The observation of flowering phenology and shape modification in some mountain plants was carried out in the Botanical Garden of the Maria Curie-Skłodowska University in Lublin, in the years 2004–2005. The object of the study were 17 taxa of native vascular flora: 16 taxa of herbaceous plants and 1 creeper with lignifying stem – *Clematis alpina* (L.) Mill. Only in the case of *Alyssum saxatile* L. and *Sedum acre* L. var. *calcigenum* no major difference was found in the flowering and architecture of plants in respect to their natural conditions. The following species flower considerably earlier than in the mountains: *Hieracium aurantiacum* L., *Dianthus nitidus* Waldst. & Kit., *D. compactus* Kit., *Centaurea kotschyana* Heuff. ex W.D.J. Koch, *C. alpestris* Hegetschw. & Heer, *Mutellina purpurea* (Poir.) Thell. and *Solidago alpestris* Waldst. & Kit. On the other hand, a considerably later flowering was observed in *Erysimum wittmannii* Zaw., *Jovibarba hirta* (L.) Opiz subsp. *glabrescens* and especially in *Dendranthema zawadzkii* (Herb.) Tzvelev. A shortening of the flowering period was commonly observed, sometimes it is even three times shorter, as is the case of *Clematis alpina*, *Erysimum pieninicum* (Zapał.) Pawł., *Aster alpinus* L. or *Dendranthema zawadzkii*. In contrast, during both seasons of study the second flowering of *Centaurea mollis* Waldst. & Kit. and *Hieracium aurantiacum* was observed. For most of the analysed taxa, the size of flowering shoots and leaf rosettes are considerably bigger (sometimes 1.5–2 times).

Co wiemy o metasekwoi chińskiej u progu XXI wieku?

What we know about dawn redwood in the beginning of 20th centaury?

Marcin KOLASIŃSKI

Summary Dawn redwood is a very valuable species in many respects, therefore is it interesting not only for botanists and paleobotanists, but also for foresters and gardeners. In the article presented history of its

discovery, taxonomy, possibly exhaustive description of species and habitat requirements have been described. Characteristics some cultivars have been included, too. The observations made in the paper concerning propagation and cultivation of this species confirm that it is a real chance to introduce it to mass nursery production.

Perspektywiczne rośliny lecznicze w kolekcji gatunków dalekowschodnich Ogrodu Roślin Leczniczych Akademii Medycznej we Wrocławiu

Future medicinal plants in the far-eastern species collection of the Botanical Garden for Medicinal Plants University of Medicine in Wroclaw

Agata BIERNAT, Anna JEZIERSKA-DOMARADZKA

Summary The collection of the far-eastern medicinal plants in the Botanical Garden for Medicinal Plants exists since 2001. At present this collection counts above 170 species originated from the botanical gardens in China, Japan, Korea and Russia. The most interesting plants introduced to the collection are: *Achyranthes aspera* L., *Agastache rugosa* Kundze, *Allium tuberosum* Rottl. ex Spreng., *Anemarrhena asphodeloides* Bunge., *Anemone altaica* Fisch.ex C.A. Mey, *Angelica acutiloba* Kitag., *Angelica dachurica* Benth. et Hook., *Codonopsis lanceolata* Trautv., *Codonopsis tangshen* Oliv., *Geum japonicum* Thunb., *Geranium thunbergii* Lindl. et Paxt., *Glycyrrhiza uralensis* Fisch. et C.A. Mey., *Incarvillea sinensis* Lam., *Leonurus japonicus* Houtt., *Leonurus sibiricus* L., *Leuzea carthamoides* D C., *Lycopus lucidus* Turcz. ex Benth., *Patrinia scabiosifolia* Fisch. ex Trevir., *Pinellia ternata* (Thunb.) Breitenb., *Plantago depressa* Willd., *Rubia cordifolia* L., *Salvia przewalskii* Maxim., *Thermopsis lanceolata* R.Br., *Trollius chinensis* Bunge. In the paper is the medicinal activity and our cultivation experiences of seven species , which are very perspective to the western medicine.

Wartości dietetyczne i smakowe wybranych, mało znanych gatunków roślin warzywnych

Dietetic and taste value of selected, less known species of vegetable plants

Magdalena ŚWIĄDER, Jadwiga RADZANOWSKA

Summary A sensory evaluation and the content of assimilation pigments in the 6 cultivars of 3 species of oriental leaf vegetables were done. Taking into consideration consumer note of taste – two cultivars (Mibuna and Mizuna Early) of *Brassica rapa* were chosen as a promissing for cultivation and consumption.

Występowanie wirusów w odmianach róż gruntowych rosnących na terenie rozarium Ogrodu Botanicznego PAN w Powsinie oraz Ogrodu Botanicznego Uniwersytetu Warszawskiego w Warszawie

The occurrence of viruses in field-grown rose cultivars in Botanical Garden of Polish Academy of Science and Botanical Garden of Warsaw University

Elżbieta PADUCH-CICHAL, Marek S. SZYNDEL, Kinga SALA-REJCZAK

Summary 132 field-grown rose cultivars grown in two botanical garden were tested for *Apple mosaic virus* (ApMV), *Arabis mosaic virus* (ArMV), *Prunus necrotis ringspot virus* (PNRSV) and *Strawberry latent ringspot virus* (SLRSV) by the serological DAS-ELISA test using commercial Loewe GmbH kits. Young leaf samples were collected from rose cultivars usually in May. The tests were done with combined samples – leaves from 20 plants of one cultivar per one sample. Three viruses were detected: ApMV, PNRSV and SLRSV. PNRSV was isolated from cultivars: "Baby Baccara", „Chicago" „Peace", „Irina", „Lavaglut", „Sandra" and „Uncle Walter" grown in Botanical Garden of Warsaw University and from "Snow Ballet", „Sodenia" and „Moje Hammarberg cultivars grown in Botanical Garden of Polish Academy of Science. Apple mosaic virus was detected in cultivars :„Goldtopa", „Kordes Perfecta", „Marchenland", „Pussta" and SLRSV was found in „White Fairy" rose cultivar grown in Botanical Garden of Warsaw University. None of tested cultivars were infected with ArMV. Data of all examined rose cultivars (387) including former results obtained in Department of Plant Pathology were tabulated.

Kolekcje odmian jabłoni w Gospodarstwie Doświadczalnym w Felinie

Apple cultivars collection in Agricultural Experimental Station Felin near Lublin

Paweł MICHALSKI, Janusz LIPECKI, Paweł KRAWIEC

Summary Trees of more than 220 apple cultivars including very old cultivars originated in different countries throughout the world as well as modern, recently cultivated in commercial orchards were planted in AES Felin near Lublin in 1984. Some of the most interesting cultivars are listed in this paper. A complete list of these cultivars is available at the Pomology Department of Agricultural University of Lublin, Poland. This collection is continuously enriched with new cultivars, mainly to fulfill the didactic demands.

Uprawa trawy pampasowej (*Cortaderia selloana* Aschers. et Graebn.)

The cultivation of Pampa Grass (*Cortaderia selloana* Aschers. et Graebn.)

Piotr URBAŃSKI

Summary In the Department of Landscape Architecture at the Academy of Agriculture A. Cieszkowski in Poznań a new method of *Cortaderia selloana* multiplication has been worked. The separate multi – growing culms after cutting from mother plants can be rooted in a mixture of peat and perlite, giving in a short time of three weeks new – young plants. The use of Seradix 3 and Stim Root 1 preparations had significantly increased the number of rooted cuttings and positively influenced the size of the roots. A new method of micropropagation of pampas grass was developed. Due to the stability of regenerants in accordance with the major characteristics and the high ratio of multiplication this method may constitute an efficient way of reproducing this species. Also the tolerance on mineral fertilizers content in the substrate and the influence of N:P:K ratio in fertilizing on the growth and flowering of pampa grass were determined. Pampa grass seems to require high nitrogen content in the media and its growth is best when the reaction of soil is between 5,0 and 6,5 pH. The wintering is possible, when roots are covered with a thick layer of dry leaves, but only when the plants are frown in a seat protected from wind.

Przyrodnicze zagospodarowanie Składowisk Odpadów Komunalnych

Vegetable tip management

Szymon ŁUKASIEWICZ

Summary The article demonstrates the results of an experimental management of Poznan community wastes in Suchy Las with trees as well as the environmental conditions present in the tip. The observed development strategies of plants growing on a transformed substratum were specified. The article mentions a list of trees and shrubs, which showed a quite significant growth. These plants have produced an annual growth of sprouts, health foliage and ability of the seed to germinate. The species of trees and bushes which were characterised by beneficial development are mentioned above.

Collection of coniferophytes (*Pinophyta*) in the Herbarium of the University of Silesia (KTU)

Kolekcja roślin nagonasiennych (*Pinophyta*) w Zielniku Naukowym Uniwersytetu Śląskiego

Adam ROSTAŃSKI, Katarzyna BZDĘGA, Izabela GEROLD-ŚMIETAŃSKA

Summary The collection of Coniferophytes (*Pinophyta*) contains at present (2006) c.a. 1500 specimens representing 26 genera and over 80 taxa - species and subspecies. This collection originates mainly from the area of the Upper Silesia as well as from the whole territory of Poland and from different parts of the world and documents botanical scientific researches. Since 2005 Herbarium of the University of Silesia is a member of Polish Biodiversity Information Net (KSIB), a part of Global Biodiversity Information Facility (GBIF).