

Bazos arboretum, the source of biodiversity in Timis county

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Abstract Bazos Arboretum, created 100 years ago, is a valuable collection of exotic species. Arranged in a landscape-specific style, it was designed as a recreational park where trees with particular ornamental qualities have been planted, brought from far away and strongly contrasting with the local vegetation.

Originally, the collection counted 120 specimens from Harvard University's Arboretum (North American species). By courtesy of I.C.A.S. (Forest Research and Management Institute) (which took it over in 1934) and benefiting from a favourable legislation, the scientific collection has diversified, currently reaching over 800 specimens, with some rare or very rare species from different parts of the world.

Key words

arboretum, exotic species, management plan

Arboreta are collections of woody plants, represented by solitary specimens, biogroups or small experimental tree areas, placed in the field according to ecological, systematic and phytogeographic criteria. They have the form of original plant constructions, designed by the human being and executed in close collaboration with nature, in various architectural and landscape styles. The name of Dendrology Park used in the past, although mostly synonymous, suggested the private character of this collection, used as a recreational forest park.

The words of Professor Alexandru Borza are perhaps the most enlightening in what concerns the importance and purpose of such reserves: "The purpose of dendrology parks is particularly important for science and national economy, although the general public primarily considers them as ornamental and leisure parks... A visit to this scientific plant, perfecting a long term <magnum experimentum> is instructive and refreshing.

Bazos Arboretum was founded between 1909 and 1914 at the initiative of the owner of that time, Count Louis Ambrose. As ambassador of the Austro-Hungarian Empire in the United States of America, he was inspired by visiting many parks and small tree areas from the United States and began creating such an arboretum, around a castle on his estate from Bazos. Its original functionality was limited to the satisfaction of the need to create around the private residence an original and spectacular frame, as "exotic" as possible, by planting trees with special ornamental qualities, brought from far away, and strongly contrasting with the local vegetation.

For this purpose, he hired an architect and a dendrologist who made the castle and park projects. The works began in 1909, simultaneously at the castle

and the park. Most of the exotic species were brought from the Arnold Arboretum in the U.S.A., the Harvard University's Arboretum, which was the largest and most famous arboretum in the world at that time. The outbreak of World War I in 1914 interrupted the collaboration with the U.S. in terms of bringing new taxa, but the works continued at the castle which was completed by the end of the war, but was not commissioned.

By the Treaty of Trianon, the Austro-Hungarian Empire collapsed, and the land reform that followed dispossessed the Count of the Bazos estate, the former owner being left only the castle and the forest around it (approximately 60 ha). In 1934, the Romanian State, represented by the Autonomous State Forest House (CAPS) by the Forest Research and Management Institute bought the forest and park around the castle, without the building, which had been demolished by the owner and sold to the villagers as construction material. Since 1934, from the purchase, the collection of exotic species (around 120 species) was neglected until Sergiu Paşcovschi, the famous forester and dendrologist, began taking care of it. The works carried out were greatly helpful for saving the exotic species overwhelmed by native species and for their inventory. Bazos Arboretum was declared a protected natural area, based on the following decisions and orders:

- in 1958, under **II.CM. no. 518 of April 16th, 1954, the Commission for Protection of Natural Monuments (CPNM) within Popular Romanian Republic Academy** adopts provisional measures for the protection of more **nature reserves**, including Bazos Arboretum.

- based on CPNM's Order no. 1581/04.09.1982, the Arboretum is granted the status of **dendrology park**, with special protection status.
- based on the County Counsel Decision no. 19/23.03.1995, the Arboretum is considered a **protected area meant to guard the biodiversity of the genetic and ecologic fund and maintain the ecological balance** in Timis County.
- by **Law no. 5 / 2000** (Law on the approval of the National Territory Landscaping Plan, Section III - Protected Areas, **Reserves and Natural Monuments section**) the Arboretum's status of protected natural area is reconfirmed.

The Management Plan of "Bazoş Arboretum" natural protected area was developed according to the Government's Emergency Ordinance no. 57/2007 and Custody Convention no. 658/31.01.2006, Article 4, section 4.1., Letter a, concluded between the Forest Research and Management Institute of Timisoara and Environmental Protection Agency of Timis, based on the Order of the Minister of Environment and Water no.494/2005.

The Provisions of Bazos Arboretum Management Plan will be observed by the land owners / administrators on the protected natural area, as well as by those engaged in any kind of activity on its territory as required by the legislation in force.

The dendrological collection currently comprises over 800 specimens of taxa (trees and shrubs).

It also includes some rare or unique species such as *Pinus Taeda*, *Castanea dentata*, *Picea koyamai*, *Pinus jeffrey*, etc. The enrichment of the collection was done by seed exchanges. For this purpose, a seed catalogue was edited, by exchanging catalogues with almost 200 specialized units worldwide; the received seeds were sown in seedbeds, then pricked out and finally planted in arboretum, based on landscape criteria.

The Arboretum provides visitors with beautiful landscapes, rare and giant trees (picture 1), glades, original architectural arrangements, in a natural forest-and-park-like environment. Bazos Arboretum is owned by the State and managed by Romsilva National Forest Management Agency by Forest Research and Management Institute of Bucharest – Timisoara Station.



Picture 1 – Giant tree (*Quercus robur*)

It has the status of protected area for two reasons:

- conservation and development of the dendrological collection;
- landscape conservation and improvement, providing the possibility to visit for scientific, educational, touristic and recreational purpose.

According to current legislation and international norms, the management objectives specific for this protected area are as follows:

Management purpose	Priority
Conservation of species and genetic diversity	1
Maintenance of environmental functions	2
Scientific research	1
Education	2
Sustainable use of resources from natural ecosystems	2
Wild area protection	3
Protection of specific natural and cultural characteristics	3

In terms of **forest**, the Arboretum is an ancient center of forest acclimatization and experimentation.

The advanced age of many specimens and groups, as well as the exceptional size allow researchers to reach useful conclusions on productivity and environmental requirements of valuable species, meant to be extended in the forest culture from our country, in order to raise the productivity of forests. For the same purpose, in the Arboretum, on the basis of the enforced cultural plan, a small collection of experimental arboreta was created, containing valuable exotic species, with known provenance material. The Arboretum is also a valuable source of seeds and became, by extending the experimental seed beds, an important center of production and distribution of exotic forest and decorative seedlings belonging to a large number of species. Timisoara Section has produced selected exotic seedlings in large quantities and has also brought numerous contributions to establishing the most appropriate techniques in seed beds culture.

Moreover, the Arboretum has been an important experimental basis for exotic species selection and improvement works.

The Arboretum is set up in landscape-like style. The landscape value of Bazos Arboretum is determined by the presence of many elements specific to famous parks: vigorous natural vegetation (sometimes huge) which perfectly suits the one introduced by the human being, many points of view, interesting and original compositions, various glades, all combined in a unitary, dynamic and constantly renewing frame throughout the four seasons.

Conclusions

In view of a proper management of the Arboretum, the following objectives are considered:

- A. introduce new exotic and indigenous wooden species for the creation of a rich dendrological collection;
- B. maintain and improve the landscape, observing the principles of the landscape style;
- C. develop research on acclimatization, culture and selection of exotic wood species,
- D. inform the public and change visitors' attitudes and behaviour through awareness and improvement of the attitudes of local communities and decision makers in respect of the nature reserve values, by information, awareness and counselling;
- F. create opportunities for a civilized tourism in order to reduce environmental impact;
- G. manage the nature reserve in a way that provides the human, physical and financial resources necessary for the achievement of the management plan objectives, while maintaining the local, national and international tradition and recognition it currently enjoys.

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