

THE INVENTORY OF THE WOOD SPECIES FROM CENTRAL PARK OF THE GHERLA TOWN

Varban Rodica, Alexandra Raducanu, D.I. Varban

University of Agricultural Sciences and Veterinary Medicine, Faculty of Agriculture, 3-5
Manastur Street, 400372, Cluj-Napoca, Romania; rvarban@usamvcluj.ro

Abstract. Also known as "The Little Schönbrun" the city's park is designed in English style and was inaugurated in 1864 spreading on about 18 ha. The main alleys are oriented towards the cardinals and inter-cardinals making a regular wind rose. The park comprises a large variety of both vernacular and exotic arbors, amongst them, the two *Ginkgo biloba* are the most spectacular. In the past, this park was considered to be one of Europe's pearls as it was designed in the same style that was fashionable in the Habsburgic Empire. In the inventory of the wooden species from the Central park of Gherla there were identified a number of 53 species that belong to 28 botanical families. The ecological analysis of the species showed that 39% are mezophytes, 57% are micromezotherms and 34 % are neutrophyls. As for the soil reaction, 34 % of the species are neutrophils, the acid-neutrophyls have registered a percentage of 28%. 15 % of the species are amfitolerant. The processing of the bioforms indicator has revealed the highest percentage in the megaphanerophytes (72%) while 26% represents the microphanerophytes. The nanophanerophytes species represent 4%.

Keywords: wood species, botanical family, trees.

INTRODUCTION

The town of Gherla is located on the North-Western area of the Transylvania Plateau, on the right bank of the Somesul Mic river, positioned in the contact zone between the Transilvaniei Plane and the Somesan Plateau. This town is unique in Romania for having been built according to a predefined plan in the XVIIIth century; it still preserves its design. The baroque style is predominant due to its intromission by the time the Armenian colonists - arriving on The Viena Imperial Court's initiative and permission - had founded the city. Other Tansilvanian towns have been radically altered during the XVIIIth century, by the Baroque style, but in all these cases there was an initial architectural style that has only been transformed. The Armenian have entered Transylvania on prince Mihai Apaf's approval, who was hoping to allure them towards the Protestantism. This moment on, Gherla appears in all the documents as Armenopolis.

The elements that confer value to the reservation area that coincides with the central square, are, alongside with the buldings' value, the parcelling, the rythm, the fashion in which the field has been employed, the prospect and the streets' front.

Also known as " The Little Schönbrun" the city's park is designed in English style and was inaugurated in 1864 spreading on about 18 ha. The main alleys are oriented towards the cardinals and inter-cardinals making a regular wind rose. The stone lions in the park have been brought from the Daniel House, where they were keeping watch over the stone portal. Of Roman origin, they most probably come

from the Roman citadelle in the neighbourhood. The park comprises a large variety of both vernacular and exotic arbors, amongst them, the two *Ginko biloba* are the most spectacular. In the past, this park was considered to be one of Europe's pearls as it was designed in the same style that was fashionable in the Habsburgic Empire. Highlights of the Habsburgic style are easily noticeable, among others, in the wonderful *Platanus hybrida* alignment with its columnary heads that presently reach legendary heights.

The greenery comprises mainly herbaceous species, including wheat grass, bulrush, red mace, duckweed, several gramineous plants. Situated in the Northern side, the Morii Forest consists mainly of oak, lime, hornbeam, hazel and may other. The middle of the hoosgow is home for species like chesnut trees, poplars, lime, oak, fir, elm trees, hornbeam trees, pines, spruce, beech, accacias, yew trees, and two *Gingobiloba* trees that are considered nature's monuments. The park is also named the Elisabeta Earden.

The socio-political context of the park's emergence. In Europe, the public parks have emerged after 1830, as really efficient social control tools found by the XIXth century Reformers. Before 1832 in România there were the so-called natural gardens for the common use. These natural places for the public use were extremely numerous all along the XIXth century, yet, they were not landscape improved they were used as meeting, socializing places.

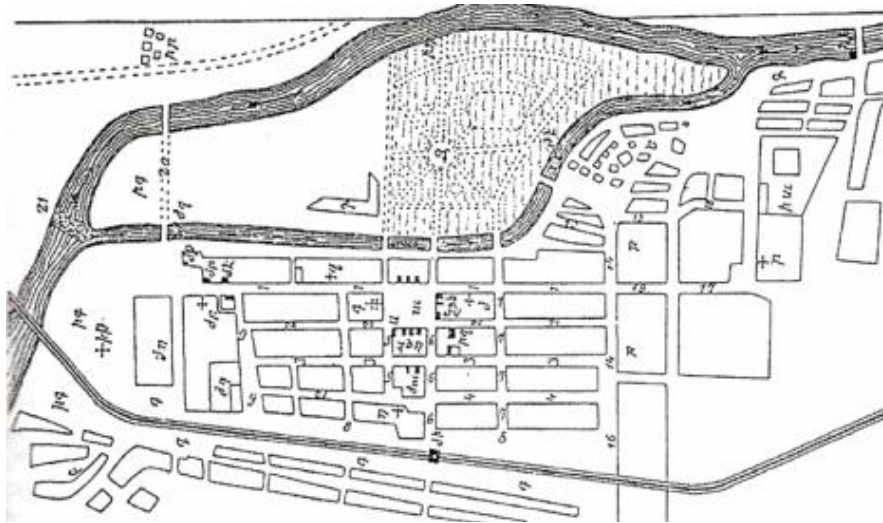


Fig. 1. The park's plan end of XIX-th century, by Kadar Jozsef, Taganyi Karoly

Another way of spending spare time and relaxing in the beginning of the 1800 were the parks and gardens near the nobles' estates, where the commoners were permitted access only on holydays, usually by the noble's good will.

The first works of redesigning the public gardens have been dated the year of 1831, on the Organic Law where, for the first time there were provisions on redesigning three public gardens in Bucharest. The biggest novelty was the fact that the authorities were pronouncing publically on the issue of space. Therefore, the

Golden period of public gardens was between 1843-1853, the moment when this kind of pursuits were taking shape.

The making of the Gherla park had begun in the 1864, between the Morii Canal and the regularized course of the Somes river. This park had appeared due to the Armenian Community who wished for such a place since the beginning of the century. The accomplishment of such a project is just milestone in a more general trend in the Habsburgic Empire. The general Gherla Park blueprint designed by Kadar highlights the 8 alleys that intersect in a hot spot. The route has been preserved to the present day.

MATERIAL AND METHOD

The goal of this work is to perform the inventory of the species that compose the arboretum. **Objectives.** This work has the following objectives: the inventory of the species that compose the arboretum of the; the analysis of the main ecological indicators (humidity, temperature, and soil reaction), the bioforms and the geographical elements of the identified species. **Working Method.** The inventory of the woody species has been made in late september, some of the species were determined on the field, using the wooden species establisher (Zanoschi, 2004).

The species were analyzed according to the main ecological indicators (H, T, R), according to the bioforms and the geographical elements (floristic elements), using the specialized literature (Sanda V. Claudia D. și colab., Flora cormofitelor spontane și cultivate din România și V. Stănescu, Dendrologie, *Fișe ecologice*). This note taking method subscribes to the integralistic concept of the central European Phytosociological School that considers that the association of species that forms the floristic structure of an area is not casual but it is under the permanent influence of the environment conditions and under the administration.

RESULTS AND DISCUSSION

It was identified 53 wooden species belonging to 34 genres and 23 botanical families in the studied area. As for the proportion between Gymnosperms and Angiosperms it has been found that the highest percentage belongs to the Angiosperms (85%) and few species of coniferales (15%) (Fig. 2).

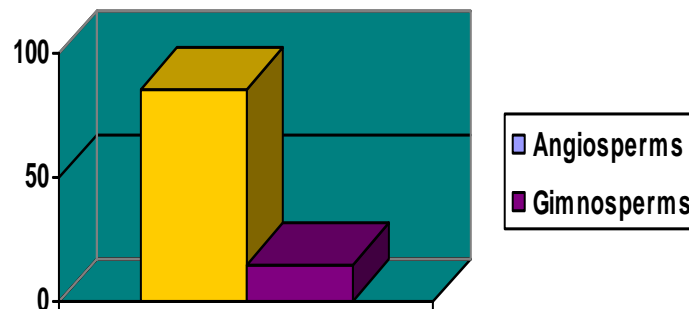


Fig. 2. The predominant species belong to the, *Aceraceae*, *Rosaceae*, *Salicaceae*, *Betulaceae* families – Ratio between Divisions

Table 1

The inventory of the species in the the city's park

Species	Family	U	T	R	BIOFORMS	THE GEOELEMENTS
1. <i>Picea pungens</i> var. <i>Argentea</i>	Pinaceae	2.5	2.5	3	MM	Am de N
2. <i>Buxus sempervirens</i>	Buxaceae	3.	3	4	M	Med
3. <i>Spiraea vanhouttei</i>	Rosaceae	3	3	4	N	Asia
4. <i>Aesculus hippocastanus</i>	Hyppocastanaceae	-	-	-		
5. <i>Acer negundo</i>	Aceraceae	3	3	3	MM	Am de N
6. <i>Acer pseudoplatanoides</i>	Aceraceae	3	3	3	MM	Am de N
7. <i>Acer campestre</i>	Aceraceae	3	3	3	MM	Eur
8. <i>Thuja orientalis</i>	Cupressaceae	3.5	2.5	0	M	Asia
9. <i>Robinia pseudoacacia</i>	Fabaceae	4	3	4	MM	Am de N
10. <i>Malus floribunda</i>	Rosaceae	-	-	-	M-MM	Am de N, Eur, Asia
11. <i>Carpinus betulus</i>	Betulaceae	3	3	3	MM – M	Eur
12. <i>Thuja occidentalis</i>	Cupressaceae	3.5	3.5	4	MM	Am. de N
13. <i>Tilia cordata</i>	Tiliaceae	2.5	4	5	MM	Euc
14. <i>Ligustrum vulgare</i>	Oleaceae	2,5	3	3	M	Eua (Med)
15. <i>Prunus cerasifera</i>	Rosaceae	2	4	0	M	Pont – Balc
16. <i>Prunus padus</i>	Rosaceae	4	0	4	M-MM	Eua
17. <i>Tilia tomentosa</i>	Tiliaceae	2,5	3,5	3	MM	Balc-Pan
18. <i>Prunus domestica</i>	Rosaceae	2	3	0	M	Eur
19. <i>Sambucus nigra</i>	Caprifoliaceae	3	3	3	MM – M	Eur (Med)
20. <i>Juglans nigra</i>	Juglandaceae	-	-	-	MM	Am d N,cult.
21. <i>Platanus hybrida</i>	Platanaceae	-	-	-	MM	Cult.
22. <i>Quercus cerris</i>	Fagaceae	3	3.5	3.5	MM	Eur
23. <i>Cornus alba</i>	Cornaceae	-	-	-	M	Asia d N,cult.orn,
24. <i>Quercus robur</i>	Fagaceae	3,5	3	0	MM	Eur
25. <i>Juglans regia</i>	Juglandaceae	3	4	4	MM	Eu-Balc-Cauc-Anat
26. <i>Salix babylonica</i>	Salicaceae	-	-	-	MM	Asia d E, cult. Orn.
27. <i>Salix fragilis</i>	Salicaceae	5	3	4	M-MM	Eua
28. <i>Picea orientalis</i>	Pinaceae	4.5	2.5	3	MM	Eur

29. <i>Fraxinus excelsior</i>	Oleaceae	3	3	4	MM	Eur
30. <i>Fagus sylvatica</i>	Fagaceae	3	3	0	MM (M)	Eur
31. <i>Ulmus laevis</i>	Ulmaceae	4	3	3	MM (M),	Eur
32. <i>Cornus mas</i>	Cornaceae	2	3,5	4	M	Pont-med
33. <i>Pinus nigra</i>	Pinaceae	2.5	3.5	3	MM	Eur
34. <i>Cornus sanguinea</i>	Cornaceae	3	3	4	M	Eua
35. <i>Prunus pissardi var. atropurpurea</i>	Rosaceae	2	3	0	M	Eur
36. <i>Celtis australis</i>	Ulmaceae	2	4,5	4	MM-M	Med
37. <i>Populus nigra</i>	Salicaceae	4	3	4	MM	Eua
38. <i>Populus tremula</i>	Salicaceae	3	2	2	MM-M	Eua
39. <i>Koelereuteria paniculata</i>	Sapindaceae	2.5	3.5	3	M-MM	Asia
40. <i>Morus nigra</i>	Moraceae	2	3,5	4	M(MM)	Med
41. <i>Salix matsudana var. tortuosa</i>	Salicaceae					
42. <i>Crataegus monogyna</i>	Rosaceae	2,5	3,5	3	M	Eua
43. <i>Deutzia scabra</i>	Saxifragaceae	3	4	4	N	Asia
44. <i>Malus domestica</i>	Rosaceae	-	-	-	MM	Cult.
45. <i>Acer platanoides var. Atropurpurea</i>	Aceraceae	3	3	3	MM	Eur
46. <i>Picea abies</i>	Pinaceae	0	0	0	MM	Eur
47. <i>Taxus baccata</i>	Taxaceae	3	3,5	4	M	Atl – Med – Euc
48. <i>Ginkgo biloba</i>	Ginkgoaceae	3	3	4	MM	-
49. <i>Thuja plicata</i>	Cupressaceae	3.5	3.5	4	MM	Am. de N
50. <i>Euonimus aeuropeus</i>	Celastraceae	3	3	4	M	Eua
51. <i>Juniperus virginiana</i>	Cupressaceae	0	0	0	MM-M	Am. de N
52. <i>Populus alba</i>	Salicaceae	2.5	4	4	MM	Euc-Asia
53. <i>Rosa hybrida</i>	Rosaceae	2	3	3	N	Eur

The results following the humidity indicator processing show that the biggest percentage is registered by the mezophytes (39%), followed by the xeromezophytes (25%) (Fig. 3). The results concerning the temperature indicator show the obvious domination of the micromezothermic species (57 %), and other species are present under 10 % (Fig. 4). As for the soil reaction, 34 % of the species are neutrophils, the acid-neutrophils have registered a percentage of 28%. 15 % of the species are amfitolerant (Fig. 5). The processing of the bioforms indicator has revealed the highest percentage in the megaphanerophytes (72%) while 26% represents the microphanerophytes. The nanophanerophytes species represent 4% (Fig. 6). The findings concerning the geographical elements, show that the European species are predominant (27%), while the Asian species are highly represented by a percentage of 218 %, as well as the North-American ones (15%). The high percentage of the Asian and North-American species is owed to the gymnosperms, that have a smaller diversity on the European continent (Fig. 7).

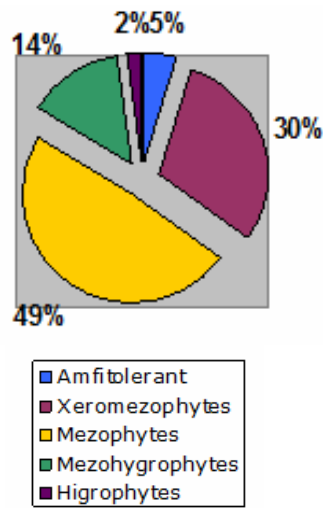


Fig. 3. Humidity indicator

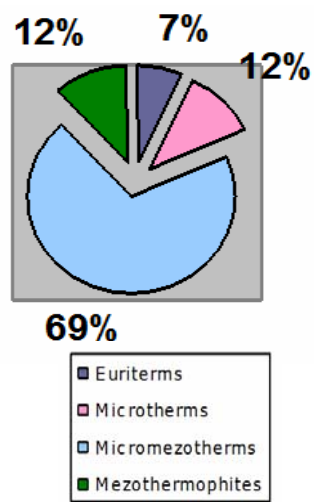


Fig. 4. Temperature

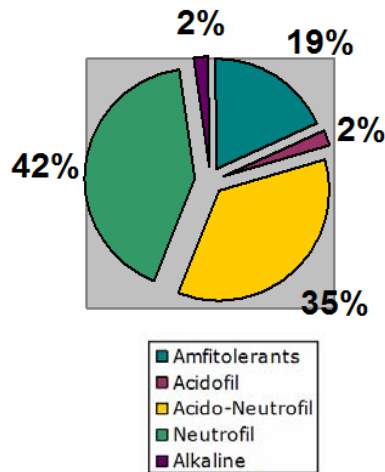


Fig. 5. Soil reaction

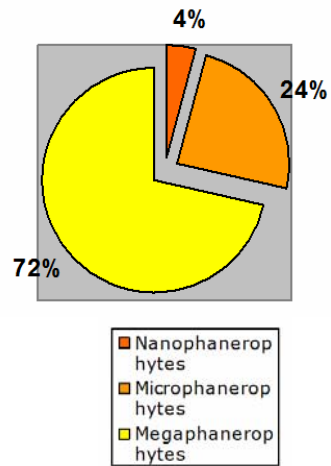


Fig. 6. Bioforms

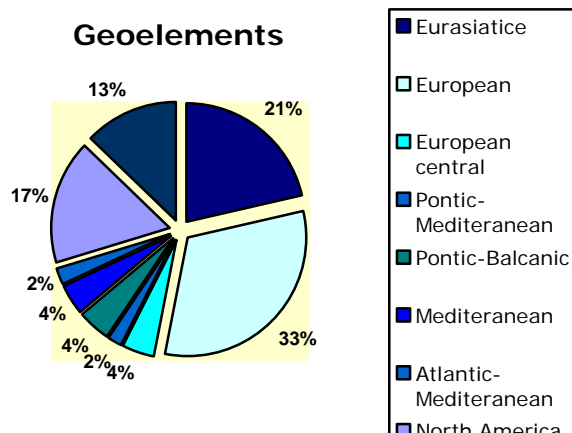


Fig. 7. Goelements

CONCLUSIONS

In the inventory of the wooden species from the Central park of Gherla there were identified a number of 53 species that belong to 34 genera and 23 botanical families. The ecological analysis of the species showed that 39% are mezophytes, 57% are micromezotherms and 34 % are neutrophyls. The results following the humidity indicator processing show that the biggest percentage is registered by the mezophytes (39%), followed by the xeromezophytes (25%)

The results concerning the temperature indicator show the obvious domination of the micromezothermic species (57 %). Other species record a percentage under 10% . As for the soil reaction, 34 % of the species are neutrophyls, the acid-neutrophyls have registered a percentage of 28%. 15 % of the species are amfitolerant.

The processing of the bioforms indicator has revealed the highest percentage in the megaphanerophytes (72%) while 26% represents the microphanerophytes. The nanophanerophytes species represent 4%. In regard to its dimensions, the park possesses an extremely small number of vegetation species (53), most of them sylvan (*Fraxinus*, *Carpinus*, *Fagus*, *Populus*, *Tilia*, *Quercus* etc), that have been planted in large amounts of the same species and very few of them are decorative;

The park needs urgent redesigning, clearance and replacement of some of the species, several having extreme aging problems, that consist a real threat to the visitors (some examples are: the *Populus alba* or the Robinia Pseudoacacia alley on the Morii canal, that due to lack of proper lighting conditions have dangerously bent); the number of the gymnosperms is relatively small, although these specimens form very nice decoration during wintertime as well.

Although the park preserves its original geometrical configuration, since the alleys' have not been properly preserved in a long time, the routing is not perceived accordingly, due to the fact that the trees have got old or have simply been left to grow unattended to. To this day, they are not properly valued, and the attempts of

replacing the old species with ornamentally valuable others, have failed due to completely unfitted emplacements that have not survived.

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