Restoring Manor Parks: Exploring and Specifying Original Design and Character through the Study of Dendrologous Plants in Estonian Historical Manor Parks

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Abstract

Manor parks are an integral part of the Estonian landscape, given that we have about 1000 manors with smaller and larger parks of which about 400 are under nature protection or declared as national heritage objects. Manor park restoration is an important national goal for the country. However, restoration techniques and expertise is not readily available. While there is great interest in cataloguing and inventorying the plant species in the Estonian Landscape, particularly in Manor Parks, knowing the types of different species is far from adequate to understand the original composition and design of the parks for true restoration. While historical documents, maps, writings, poetry and paintings give us useful background information regarding the overall scheme, such as spatial orientation and road patterns, little is understood about detailed plantings, tree species etc. Under specific circumstances the old trees in the park may yield valuable information for restoration decisions. The most important question in restoration is which woody plants and on what conditions are the part for the original design concept. That is the key question posed by the researchers of this paper. Due to the fact that the development of manors and manor parks in the Baltic countries is similar the topic is equally interesting for all Baltic States. Moreover, the addressed problems of restoration of parks are similar in every place with the lack of primary data.

The researchers contend that in addition to the inventories performed by many foresters and naturalists, it is equally relevant to know the actual count of each type of tree to begin composing the original landscape. Furthermore, one needs to understand that these parks have evolved over many years and the current structure might be very different than the original plan. To make it even more complicated, it is difficult to really say what era was „original" or what were the glory days of the Mansions. One of the ways to deal with this issue is to identify the really old trees from the new or subsequent growth, and focus attention on those. The authors have begun the tedious task of identifying, inventorying (types and number of species) and understanding this footprint in each of the 16 parks in 2003 - 2009.

This paper addresses the significance of focusing on the identification and composition of old trees and their influence/ significance in understanding the original intent of the park design and the amount of original matter in today's historical parks, thereby aiding in better restoration efforts.

Key words: historical manor parks, examples of dendrologous species.

Introduction

Many Manor Parks in Estonia are preserved as sites of national heritage. It is deemed important to protect and preserve these parks, which involves restoration and replanting. However, due to the Estonia's complicated history (Sinijärv 2009), little is actually known about their original design or character. What is extensively documented is the types of different species that currently exist in the park. This is evidenced by a large number of inventories conducted by foresters through the ages. However, when restoring a park, one needs more than an inventory of existing woody plant species. In addition, characteristic of the park and its changing role thought out history needs to be examined. One key aspect in renewing the park is the overall composition and regularity. Given that the only parts that have remained of the original design in historic parks are the old trees (Nurme 2009), the woody plants have an important role in the restoration decision making. If there are little primary sources the decisions about the original details of the design of the park can be made by studying the composition of the old trees.

The article presents data from detailed research on dendrologous plants in 16 Estonian historical manor

parks. As opposed to existing inventories that catalogue the different types of tree specimens, this research takes into account the age of the trees to differentiate between original plantings and subsequent growth as well as the number of examples in each of the different species. Both these elements are important for describing manor parks in general and for making decisions about restoration concepts and practice. Because of the similar issues that Estonia has (Grazulis 2007) not only with Estonian manor parks but with parks throughout the Baltic countries and the former Soviet Union and elsewhere the documented historic data for restoration purposes has not survived or does not exist.

Historic Character of Parks

The majority of the nationally protected parks (nature conservation or national heritage) in Estonia are manor parks. Estonia with a total area of 45,227 sq. km has had about1100 manors (Rosenberg 1994). Many manors had grandiose parks of which about 800 have been preserved. The oldest manor gardens and modest parks were probably created already in the 17th century, which is supported by the engravings of Adam Olearius and Antonis Goeteeris (Maiste 2006) and few manor plans from Livonia (nowadays Latvian territory) dating back to the end of 17th century (Janelis 2010). Generally there are no documents preserved and gardens and parks that were created back then have disappeared in the rebuilding processes. Most of the manor parks that have remained were founded in the 18th-19th centuries and are thus the oldest parks in Estonia.

According to the data of the Ministry of the Environment [EELIS] (www.eelis.ee) there are ca. 450 manor parks out of the total number of 548 parks and arboretums under nature protection. Approximately 2/3 of the manor parks under nature protection (ca. 270) are also on the list of monuments of national heritage[1]. In other words, the majority of Estonian parks under nature protection are historical and more than 150 years old. As previously mentioned the preserved historical manor parks in Estonia date back to the 18th century and as such, the question about their future becomes increasingly relevant. If we let the parks stay as they are, then they are likely to deteriorate and leave a vanishing footprint within this century. If the trees die, then the manor building complexes will be left to ruin as the lifetime of the buildings is a lot longer than the lifetime of the trees. Furthermore, given the Estonian climate conditions, most of the old plantings have reached or exceeded their life expectancy (for example *Tilia cordata*, which is a common park tree in Estonia has a life expectancy of 300 to 400 years in normal conditions) (Laas 1987). Thus, more and more of these trees will continue to vanish as age, illness and climate change catch up with them. The building complexes need, as they have done for centuries, suitable surroundings and beautiful parks. One of the critical issues connected with the age of the parks is that there is a need for historic preservation and renewal in order to preserve the character of the manor houses and parks for the future. This poses a serious concern as the parks have evolved over time and the notion of what is considered "original" is hard to define. Two of the major causes for changing appearance of the old parks are that many of the parks were left without continuous maintenance (Nurme 2008) and second, after the end of the manor era, there have been new and perhaps unsuitable plantings in the parks (Sander and Merikar 2004). This tendency is common for shrubs, fruit trees and certain coniferous trees (*Pinus mugo*, *Picea pungens* etc.) which were often planted in parks during Soviet times. The result is that the species growing in the parks nowadays can be quite different from the ones originally planted. If our aim is to restore these parks, according to the values and principles recognized and appreciated in Europe and preserve our cultural heritage, then studies and research about authentic or original species in different historical parks is certainly needed. Research method that results in allowing us to make scientifically based decisions on types and numbers needed replacement plantings when restoring the parks becomes an important step toward reaching this goal.

A Focus on Dendrologous Plants

Manor parks are of interest for different reasons – from an environmental aspect, there is a unique seminatural habitat where the old trees play a central role. Dendrologous plants, mainly woody trees, make up the structural elements of many of these manor parks. The interest towards dendrologous plants has been constant in Estonia which is proved by frequent dendrological inventories which give a good overview of dendrologous species and their condition (Sinijärv 2009). The acclimatisation of foreign species, the dendrological diversity and ancient trees with extraordinary size have been of great interest (Nutt 2008). Generally, the inventories did not pay much attention to the connection between woody plants and park composition, and authentic species from the period of original park construction and the proportion of different species. The most extensive of inventories were carried out by Paivel from 1954 -61, Aaspõllu in 1970-80s of parks under nature protection (Aaspõllu 1977, 1978, 1980, 1981, 1982, 1984, 1986), Elliku and Sander

[1] National Registry of Cultural Monuments, 2012.

in 1984-95 in the counties of Virumaa and Pärnu (Elliku and Sander 1996, Sander 1996), Tallinn Botanical Garden in different periods of Kadrioru park, and the Ü/K 'Metsaprojekt' Eesti Metsakorralduskeskus (Estonian Forest Management Centre) in 1970-80s of different parks (Palm 2009). A number of research projects dealing with plantings in Estonian manor parks have also been undertaken (Uustal 2003, Palm 2009). However, in all the existing surveys, which present an accurate list of species primarily used in manor parks, they do not address the major elements of park design and construction. While much interest in the types of plants in the parks were expressed by forest researchers and ecologists during the Soviet occupation, many of their surveys lists the different species growing in the parks but present no data about the number of existing specimens or a comparison to the original park composition (Nutt 2008). Therefore these surveys cannot be used as a basis for decision-making in the restoration works. The previous inventories do not give the correct idea of the age structure of the park trees because the age of the trees was usually determined only for the largest examples. There are also problematic issues with shrub inventories because shrubs have short life expectancy and therefore no original shrubs are preserved. Usually in old parks few shrub species, mostly *Sorbaria sorbifolia*, *Spiraea chamaderyfolia*, *Syringa josikaea* and *Symhoricarpus albus,* due to vegetative renewing, have become large shrub massives that have shifted from their original planting area as a result of the lack of maintenance. Therefore, their initial location in the original design is nearly impossible to determine. Abovementioned reasons imply that prevous inventories cannot be used in restoration and studying the historic parks because the interpretation does not give us the correct concept of initially used species and therefore does not give us the correct original park design.

As a consequence, the original composition and authentic species of historical parks are not clarified and the composition of parks may be misunderstood. In this article the researchers focus on the possible original species that were planted taking into account the inventory data and the age structure of the trees. They are concentrating on tree species, leaving out shrubs due to previously mentioned reasons. The aim of the current research was to clarify the proportion of examples of distinct tree species in manor parks today and to determine the main tree species originally used in manor parks. Also one important research element was the determination of the approximate tree age to understand whether the tree was part of the original composition of the park.

Defining Elements in Park Restoration

The joint International Committee for Historic Gardens set up by International Council on Monuments and Sites [ICOMOS] and the International Federation of Landscape Architects [IFLA], inacted the Florence Charter from 1982 at their meeting in Florence on 21 May 1981. The 'Florence Charter' was drafted by the Committee and registered by ICOMOS on 15 December 1982 as an addendum to the Venice Charter covering the specific field concerned. Article no. 15 of the Florence Charter (Florence Charter 1982) states that no restoration work and, above all, no reconstruction work on a historic garden shall be undertaken without thorough prior research to ensure that such work is scientifically executed and which will involve everything from excavation to the assembling of records relating to the garden in question and to similar gardens. Before any practical work starts, a project must be prepared on the basis of said research and must be submitted to a group of experts for joint examination and approval.

Due to the lack of original detailed project designs and plantation schemes, one of the tasks for this group of researchers was to try to understand the original planting design structure through large-scale maps (1:4,200) from 19th century. The number of 'old' trees (planted prior to 1919), as measured by the size of the trunk and getting information on the composition of different trees within the parks became necessary to clarify the composition of park space, identify the details of original design and give suggestions for restoration according to the original ideas.

Methods

The aim of the current research was accomplished in three distinct steps. First, using the same methodological approach (Nurme 2008) an inventory of all existing species and their counts was created for each park. This included both Estonian and Latin names, diameter of tree at breast height and type (coniferous or deciduous). The input data was received from the detailed inventories in 2003-2009 of 16 manor parks under nature protection done by specialists of Artes Terrae Ltd (Table 1). The number of selected parks is about 3,5% of all protected manor parks in Estonia. The selected parks are located in different areas of Estonia and they were built or rebuilt around second half of 18th century to first half of 19th century. Therefore, the selection is balanced and representative and the obtained results can be extended to other manor parks of Estonia and North-Latvia (historic Livonia).

The criteria for the selection of inventories included in the research were as follows:

Table 1. Overview of the inventories used in the research. Inventories are available in the archives of Artes Terrae Ltd.

Name of the park	Year of the inventory	The name of the work
Hummuli manor park	2008	Hummuli mõisapargi heakorrastusprojekt (Reconstruction project of Hummuli manor park)
Härgla manor park	2007	Härgla mõisapargi dendroloogiline inventeerimine (Dendrological inventory of Härgla manor park)
Kiidjärve manor park	2009	Kiidjärve pargi rekonstrueerimisprojekt (Reconstruction project of Kiidjärve manor park)
Kuremaa manor park	2006	Kuremaa mõisapargi heakorrastuse põhiprojekt (Reconstruction project of Kuremaa manor park)
Lõhavere manor park	2009	Lõhavere hooldushaigla pargi puude dendroloogiline inventuur (Dendrological inventory of Lõhavere Hospital park[1])
Mäetaguse manor park	2004	Mäetaguse mõisapargi heakorrastuse põhiprojekt (Reconstruction project of Mäetaguse manor park)
Pagari manor park	2007	Pagari mõisa pargi heakorrastuse põhiprojekt (Reconstruction project of Pagari manor park)
Puurmani manor park	2005	Puurmani pargi rekonstrueerimise project (Reconstruction project of Puurmani manor park)
Püssi manor park	2009	Püssi mõisa pargi heakorrastuse põhiprojekt (Reconstruction project of Püssi manor park)
Riidaja manor park	2006	Riidaja mõisapargi rekonstrueerimise I etapp (Reconstruction project of Riidaja manor park, I phase)
Rõngu manor park	2008	Rõngu lossimäe pargi puistu hindamine ja hooldussoovitused (Dendrological assessment of Rõngu castle hill park and recommendation for management)
Saka manor park	2008	Saka mõisapargi heakorrastuse põhiprojekt (Reconstruction project of Saka manor park)
Saku manor park	2007	Saku mõisapargi heakorrastuse põhiprojekt (Reconstruction project of Saku manor park)
Sürgavere manor park	2008	Sürgavere mõisapargi heakorrastuse põhiprojekt (Reconstruction project of Sürgavere manor park)
Õisu manor park	2008	Õisu mõisapargi heakorrastuse põhiprojekt (Reconstruction project of Õisu manor park)
Rogosi manor park	2003	Rogosi pargi puistu dendroloogiline inventeerimine ja hindamine (Dendrological inventory and assessment of Rogosi manor park)

[1] Initially Lõhavere manor park

• the inventory was carried out less than ten years ago,

• the inventory dealt with individual trees, not groups of trees,

• the inventory specified the species and the diameter at breast height or the perimeter at breast height of trees,

• the inventory was carried out using similar methodology (Nutt 2008),

• the park was in the countryside,

• the park was historical manor park,

• the park was founded in English style or redesigned to English style in the 19th century.

The second element of the research concentrated on the investigation of the proportion of different species in every park. The proportion of species gives the park its distinctive character.

For example, the dark trunks of oaks with masculine branch patterns, exhibit a strong and powerful character while the white trunks of birch and long hanging branches provide an airy impression. Similarly, old tree plantings that show design details such as regular composition (alleys, tree lines, solitaires etc.), as well as free composition (tree clumps, round plantings, groups etc.). As previously mentioned one of the aims of the research was to determine the ten relatively most widespread deciduous tree species. This was necessary for deciding whether it is possible to draw general conclusions which may be useful when preparing restoration design projects.

The third research element was to determination of approximate age of tree to understand whether the tree was a part of the original composition of the park. Determining the age without knowing the date of planting proposes a number of difficulties. The most accurate way would be to use Pressler's increment borer and count the growth rings but due to the decay of tree core, the results are often incomplete when applied to old trees. Second possibility is to apply the

yield tables used in forestry (Krigul 1974). Here we have to be aware of the different growing conditions for trees in forests and in parks. Generally the park trees grow less in length and become thicker since they are not surrounded tightly by other trees. Parks also have usually good growing conditions in general. Furthermore, Estonian growth tables exist only for widespread forest species and just a few foreign species, e.g. European larch (*Larix decidua*) and Siberian larch (*Larix sibirica*). Given these restrictions, it was decided not to try to determine the age of the trees but rather find out whether the tree was at least one hundred years old using the diameter of the trunk. In other words, whether the researched tree belonged to the period of the construction of park. The limits of the yield tables for 1 and 1a quality class growing conditions for maximum age (100…140 years) are as follows (Kiviste 1997):

1. Scots Pine (*Pinus sylvestris*) D > 47 cm,
2. Norway Spruce (*Picea abies*) D > 42 cm,
3. Silver Birch (*Betula pendula*) D > 41 cm,
4. Common Aspen (*Populus tremula*) D > 34 cm,
5. Common Alder (*Alnus glutinosa*) D > 35 cm,
6. European Larch (*Larix decidua*) D > 38 cm,
7. Siberian Larch (*Larix sibirica*) D > 41 cm,
8. Common Ash (*Fraxinus excelsior*) D > 40 cm,
9. English Oak (*Quercus robur*) D > 51 cm (140 y) / 60 cm (180 y).

To include all possible indigenous species in the selection, the smallest diameters were chosen for each group of trees. In order to take into account the better growing conditions in parks, the limit for hardwood species (e.g. ash, oak, elm etc.) was set on 51 cm, for soft deciduous species (e.g. birch, aspen etc.) on 35 cm and for coniferous species on 42 cm (e.g. spruce, larch etc.). While these approximations do not provide accurate results, they offer a good start for the current research.

In different works some of the evaluation results had minor differences which is why the data was adjusted in order to analyse work in hand (for example the perimeters were calculated into diameters, woody plants that were counted as groups in some works were left out of the list etc.) Additional observations were carried out when necessary. Basic statistical methods (summarising, giving proportions and comparing different parks) were used to analyse data.

Results and Discussion

Our results showed approximately 37 different species in 16 inventoried parks. The number of species in each park ranged from 17 in Riidaja manor park to 74 in Saku manor park. There were on average 26 tree species and 11 shrub species. Detailed breakdown and count can be seen in Table 2.

Table 2. Overview of the research results.

Item	Sum	Percentage
Average number of species	**37**	**100.0**
Average number of tree species	**26**	**70.4**
Number of deciduous species	18	69.3
Number of coniferous species	8	30.7
Average number of shrub species	**11**	**29.6**
Total number of examples	**12,019**	**100.0**
Total number of examples of trees	**11,613**	**96.6**
Number of deciduous trees	10,076	86.8
Number of coniferous trees	1,537	13.2
Total number of examples of shrubs	**406**	**3.4**

The large difference in type and count of species is evident when we compare trees and shrubs. Altogether, there were on average variety of 70.4% tree species and 29.6% shrub species actual counts showed a predominance of trees (96.6%) rather than shrubs (3.4%). The similar conclusion may be drawn from the comparison of deciduous and coniferous trees. While the variety of deciduous trees makes up 69.3% and coniferous tree species 30.7%, deciduous trees far outnumbered (86.8%) their coniferous counterparts 13.2%. This fundamental difference between variety of species and counts in each category illustrates the problems of looking at just one aspect of an inventory. The proportion of species compared to the proportion of exemplars for shrubs and trees are illustrated in Figures 1 and 2.

These proportions are in coherence with the tendencies of 19th century which had interest of introduction of new species (Hein 2004) and were characteristic to 19th century park architecture practice. Original park design consisted primarily of leafy trees, accented by groups of shrubs and coniferous trees which were mainly imported as exotic species (Sander, Meikar 2004). This explains the remarkable minority of coniferous trees. The smaller proportion of shrubs can be explained by their short life expectancy (Laas 1987) compared to trees, which is why most of the shrubs that were planted as late as the end of 19th century have disappeared or as for few species what is remained is the vegetative renewal that has run wild.

The results of the research show that a limited number of species represents the majority of examples. Norway Maple (*Acer platanoides*) had the highest proportion of examples in the parks (on average 22.9% of trees and shrubs). This fact is explainable by the high level of natural renewal of maple. The next most widespread species were Small-leaved Lime (*Tilia cordata*, 14.7%), Common Ash (*Fraxinus excelsior*, 13.7%),

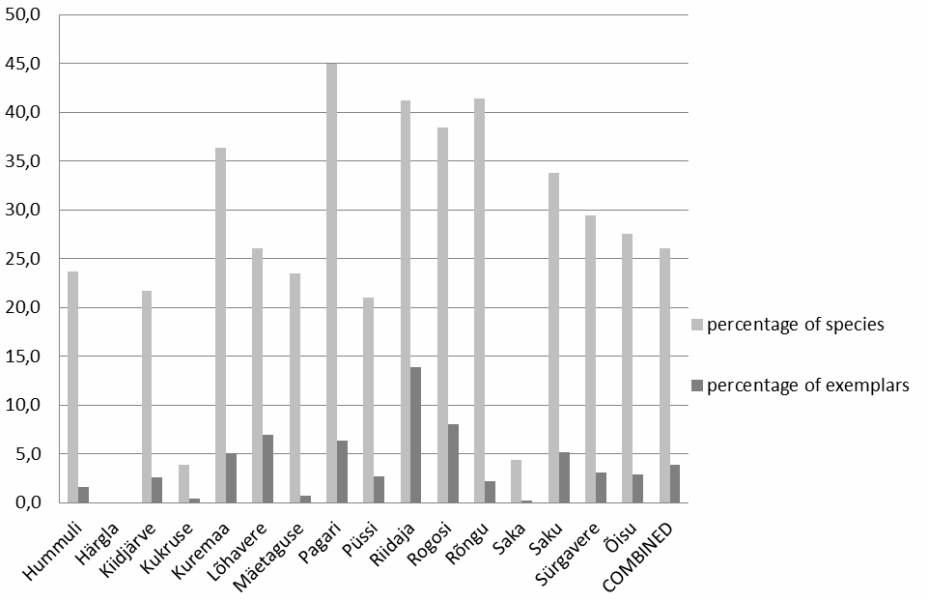

Figure 1. Proportion of species compared to the proportion of exemplars: shrubs. The large difference in number of species and proportion of species is uncovered. This reveals that the shrubs are not as widespread in the parks as the number of registered species would suggest because the number of exemplars of each species is small

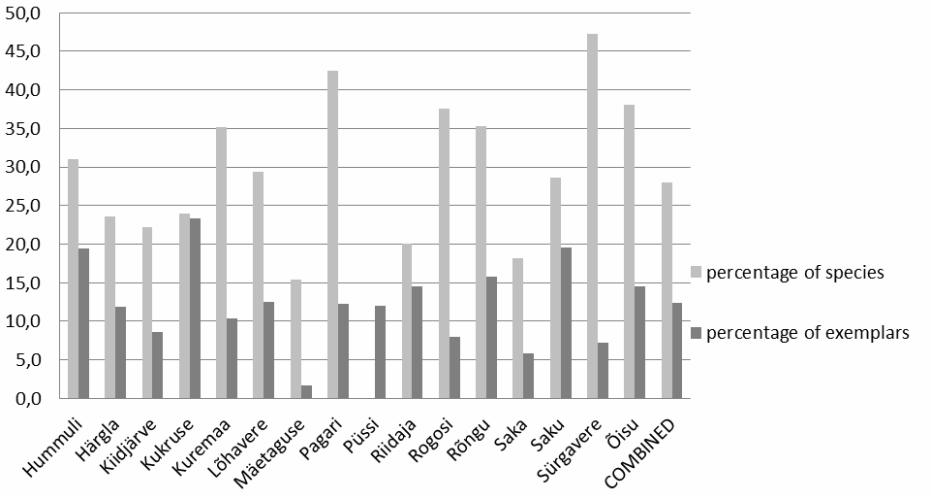

Figure 2. Proportion of species compared to the proportion of exemplars: coniferous trees. The large difference in the number of species and the number of exemplars reveals that parks have remarkably less coniferous trees than the number of species would suggest. The parks are generally dominated by deciduous trees even though the number of species is might be close to coniferous trees

English Oak (*Quercus robur*, 13.6%) and Scots Elm (*Ulmus glabra,* 11.4%). The rest of the species were represented with much fewer examples such as Norway Spruce (*Picea abies*, 3.3%), different larch species (*Larix* sp., 2.8%), Silver Birch (*Betula pendula,* 2.1%), Bird Cherry (*Prunus padus,* 1.7%), different firs (*Abies* sp., 1.6%) and Horse-chestnut (*Aesculus hippocastanum*, 0.9%). Similarly, the results show that the largest proportion of trees and shrubs is composed of indigenous trees – English Oak (*Quercus robur*), Small-leaved Lime (*Tilia cordata*), Norway Maple (*Acer platanoides*), Common Ash (*Fraxinus excelsior*), Scots Elm (*Ulmus glabra*), Silver Birch (*Betula pendula*), Common Aspen (*Populus tremula*), Bird Cherry (*Prunus padus*), Norway Spruce (*Picea abies*) and Scots Pine (*Pinus sylvestris*) (Kull 2009).

The larger proportion of indigenous species is expected because they are more adapted to the local natural conditions and more capable of natural renewal (including vegetative renewal by offshoot of the stump or the root). This tendency is vividly illustrated by Kukrus manor park created by Robert von Toll in 1866-75 which had the most diverse range of species in Estonia during that time (Sander and Läänelaid 2007) and today has only 11 woody plant species making it one of the poorest parks of species in North-Estonia (Abner, Konsa, Lootus and Sinijärv 2007). The main reason for that besides the decrease of park area in 20th century is the perishing of alien species.

When we compare different parks, the specific characteristics of each parks is revealed. For instance, in Kiidjärve and Rõngu manor parks trees have the

greatest proposer Small-leaved Lime (47.9% and 33.9% respectively), but in Härgla, Sürgavere and Rogosi manor parks Norway Maple (32.8%, 33.9% and 36.5% respectively) dominates. In Mäetaguse manor park Scots Elm is the most widespread species (30.6%) and in Riidaja manor park Common Ash (34.2%). The conclusion is that the main tree species vary greatly from park to park. As an example the incidence of Small-leaved Lime and English Oak are shown in Figure 3. We may conclude that the number of examples of different species vary in different parks which is why we cannot say that in 19th century Estonian parks were dominated by certain specific species.

Finally, the proportion of old, authentic trees was analysed. The results show that the proportion varied greatly from park to park as well. Roughly half of the trees growing in manor parks today are from the period of the original plantation. It must be noted that younger specimens that have grown in the initial planting area from offshoot of the stump or the root have not been taken into account here. Also shrubs for previously mentioned reasons have not been taken into account. As an example, the situation in Hummuli manor park is presented in Figure 4. The examples of English Oaks and Scots Elms were mostly old trees and Norway Maples, limes and firs were mostly young

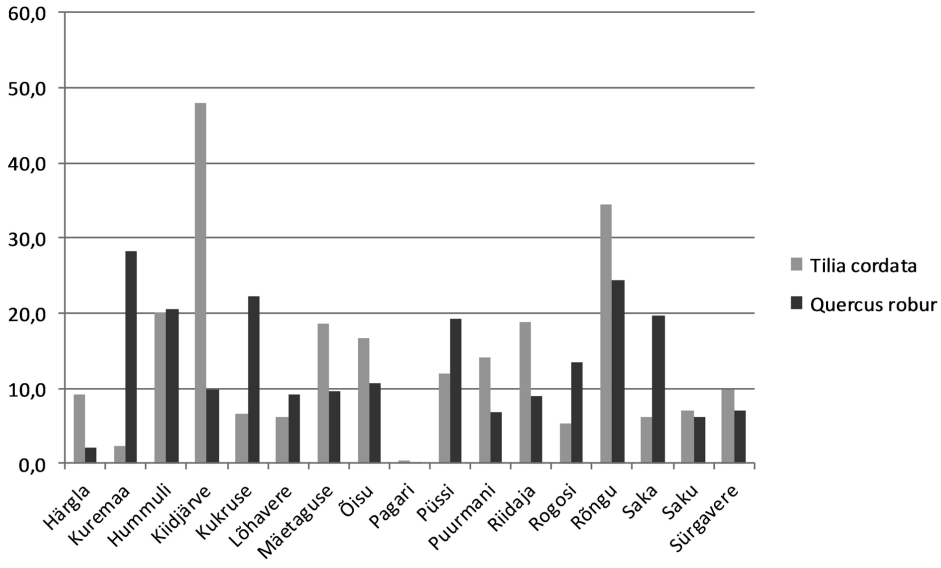

Figure 3. The proportion of exemplars of Small-leaved Lime (*Tilia cordata*) and English Oak (*Quercus robur*) in analysed parks

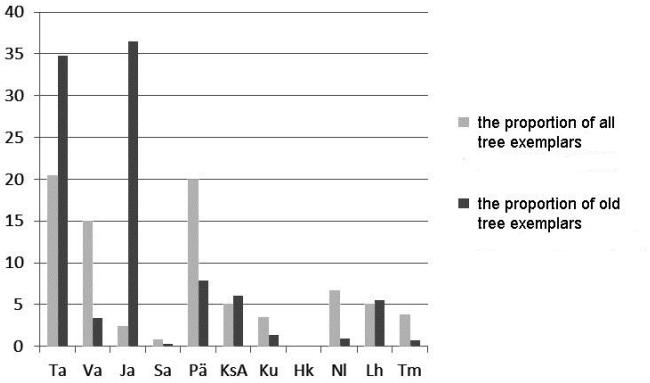

Figure 4. The proportion ten species of all tree exemplars (light) and old tree exemplars (dark) in Hummuli manor park. The abbreviations stand for Ta: English Oak *(Quercus robur),* Va: Norway Maple (*Acer platanoides*), Ja: Scots Elm (*Ulmus glabra*), Sa: Common Ash (*Fraxinus excelsior*), Pä: lime species (*Tilia* sp.), KsA: Silver Birch (*Betula pendula*), Ku: Norway Spruce (*Picea abies*), Hk: Horse-chestnut (*Aesculus hippocastanum*), Nl: fir species (*abies sp.*), Lh: larch species (*Larix* sp.), Tm: Bird Cherry (*Prunus padus*)

trees. These results suggest that due to lack of consistent maintenance the vast majority of the younger trees consist of self-initiated, relatively fast-growing regeneration typical to the species just mentioned. As these species are naturally widespread in Estonia we cannot unequivocally say that older trees growing in the park are the only source for young trees.

However, the current composition of the stand of each park has its own mechanism of formation. Broadly speaking, the great fluctuation of the proportion of authentic trees may be due to several factors such as the natural aging and diseases of trees, habitat changes resulting loss, replacement plantings specificity, proliferation of natural regeneration etc.

Conclusions

The manor parks in Estonia are of unique character –the historical circumstances that enabled the creation of large number of well-developed parks in the countryside were in the centuries before WWI present

only in Estonia and Latvia. As far as the authors know no similar research on the proportion of species used in the original plantings has been carried out. Therefore, unfortunately it is not possible to make any direct comparison with similar work.

The results show that how helpful identification of old trees is to the analysis of the spatial structure of the park. However, it also highlights the difficulties related with documenting species of trees and shrubs in manor parks today. Existing plantings do not give us an accurate impression of the original composition of parks because on average only half of the current trees are original and due to the lack of original plantation plans and pictures it is difficult to determine the original number of species and examples. Despite these difficulties, it is critical to investigate the composition of the park's old trees (to the extent possible) as well as to use all written historical material to detect the original plan of design for restoration purposes.

It is necessary to continue researching in this direction, specifying the primary data, comparing the original historic planting schemes in detail, taking into account the possible vegetative renewal of species in their initial planting location, determining the exact age of the trees using the alternative methods previously mentioned in this article etc. Comparison to other countries, first and foremost the Baltic States with similar historic background is also useful.

Today, we do not have appropriate information about the original species and the number of examples planted. This lack of knowledge complicates the optimal restoration practice as appropriate species for planting are not specified. Analysis of the old tree species and their locations in the park in connection with historical maps and documents is a time sensitive task that is necessary.

In conclusion, we reiterate that there has been much research about dendrology in Estonian parks, but parks have seldom been considered as works of art. Most of the studies are conducted by scientists who have studied manor park issues about the introduction of alien tree species, biological diversity, exotic species, old (ancient) trees and exceptionally large exemplars. But when restoring a park one needs to consider it as a system and therefore all trees must be considered in the analysing process. In addition, characteristic of the park and its changing role thought out history needs to be examined. When renewing the park the key element is to study overall regularity and composition of plantings. While this is probably not enough to create authentic restoration plans, it is a step closer to understanding the original intent of the design. Results from this pilot project shows the importance of documenting both age and composition of the plantings can make a big difference. Needless to say, this primary research on existing plants, needs to be coupled with historic research through paintings, writings and other references would help us to restore the parks in an authentic manner.

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ВОССТАНОВЛЕНИЕ УСАДЕБНЫХ ПАРКОВ: ИЗУЧЕНИЕ И УТОЧНЕНИЕ ОРИГИНАЛЬНОГО ДИЗАЙНА И ХАРАКТЕРА НА ОСНОВАНИИ ИССЛЕДОВАНИЯ ДРЕВЕСНЫХ РАСТЕНИЙ В ИСТОРИЧЕСКИХ УСАДЕБНЫХ ПАРКАХ ЭСТОНИИ

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Резюме

Усадебные парки являются неотъемлемой частью эстонской ландшафта, учитывая, что у нас есть около 1000 поместий с меньшими и большими парками, из которых около 400 находятся под защитой природы или признаны объектами национального наследия. Восстановление усадебных парков является важной национальной задачей для страны. Однако методы восстановления и экпертные знания не являются легко доступными. Хотя существует живой интерес к каталогизации и инвентаризации видов растений в пейзаже Эстонии, особенно в усадебных парках, знание типов различных видов является далеко не достаточным, чтобы понять оригинальные композиции и дизайн парков для их истинной реставрации. Хотя исторические документы, карты, письменные источники, стихи и картины дают нам полезную справочную информацию относительно общей схемы парков, таких как пространственная ориентация и дорожные модели, мало известно о подробных насаждениях, видах деревьев и т.д. При определенных обстоятельствах старые деревья в парке могут дать ценную информацию для принятия решений по восстановлению. Наиболее важным вопросом в реставрации является какие древесные растения и на каких условиях являются частью первоначальной концепции дизайна. Это ключевой вопрос, поставленный исследователями в этой работе. В связи с тем, что развитие поместьев и усадебных парков в странах Балтии схоже, эта тема одинаково интересна для всех балтийских стран. Более того, рассматриваемые проблемы восстановления парков похожи повсеместно за отсутствием первичных данных.

Исследователи утверждают, что в дополнение к инвентурам, выполненым многими лесоводами и натуралистами, имеет столь же важное значение определить фактическое количество каждого типа дерева, чтобы начать составление первоначального ландшафта. Кроме того необходимо понять, что эти парки развивались на протяжении многих лет, и нынешняя структура может весьма отличаться от первоначального плана. Задание усложняется тем, что трудно сказать, какая эра была «оригиналом» и какими были дни славы особняков. Один из способов решения этой проблемы является выявление действительно старых деревьев в отличие от новых и последующего роста и сосредоточение внимания на них. Авторы начали кропотливую работу по выявлению, инвентаризации (типы и количество видов) и понимания этого узора в каждом из 16 парков в 2003-2009.

В настоящем документе рассматривается значимость сосредоточения на идентификации и составе старых деревьев и их влияние / значение в понимании первоначальной цели дизайна парка и доли исходного вещества в исторических парках сегодня, тем самым помогая улучшить усилия по восстановлению.

Ключевые слова: исторические усадебные парки, экземпляры древесных видов.