Study regarding the natural landscaping of a private garden in Giroc Commune, Timis County

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Abstract As biodiversity is an essential feature of a balanced ecosystem, we have tried to comply with it as much as possible, using as many vegetal species. They were chosen according to well determined criteria:
- the benefits brought to wild creatures by the quality and quantity of pollen, nectar, leaves, fruit, stem range, offering a place to nest;
- species in jeopardy to extinct or in progress of extinction (e.g. *Liriodendron tulipifera*);
- native species well adapted to the proposed site.
The chosen vegetation is the focal point for the ideology of ecological design (wildlife gardening). With this concept as starting point, vegetation was chosen both for its aesthetic features, and for those directly involved in the natural ecosystem. We have used species like *Buddleia davidii* and *Asclepias tuberosa* for their well known capacity to attract butterflies or species like *Pyracantha coccinea* and *Cotoneaster horizontalis* as they are a good food source for herbivorous birds.

When choosing the species, we followed both their origin character, preferring native species, some of them having as well an endemic feature (*Campanula carpatica*), and the character of their spreading areal, trying to use as well near extinction species (*Ginkgo biloba*).

Material and Method

The basic idea of this project comes from an ecological concept, according to which all kingdoms and species are interdependent, each of them having an ecological niche and a well delimited role which serves in various methods to interest and cohabitation of all the species of the planet.

This project tries to prove that the intrinsic value of an organism is indispensable, irrespective of its aesthetic value. I am trying to avoid the discriminating attitude of the human kind, its considering superior and entitled to create a perfect artificial environment without direct consequences on the same person and the same modelled space.

Therefore, out of their certainty that together with all the other kingdoms, we make a unit which brings benefits to everybody, we wanted to create a space proving that biodiversity is both healthy and aesthetic. For most of the landscape designers, the idea to share garden with various creatures seems a disaster, which shall lead to the final engorgement of the garden. It is important to remind you here that nature exists in a balance with positive and negative entomofauna. An eloquent example is the grouping of certain species of plants, which shall improve, by various phenomena, their cohabitation. Therefore, we know that a frequent issue is the attack of green flies onto rosebuds. This issue can be improved by planting species of daisies
next to them, as they are a food source for ladybirds, larvae of which eat green flies.

**Obtained Results**

Butterflies are important pollinators, they being as well the food source for many species of birds. Birds are important creatures for many habitats, where they exploit almost any possible food source. They often help to diffuse seeds in the ecosystem. Frogs are important for the control of snail and insect populations, frequently found in gardens.

Biodiversity is an essential feature of a balanced ecosystem, I have tried to respect it as much as possible, using as many vegetal species. They were chosen according to well determined criteria:

- Benefits brought to wild animals by the quality and quantity of: pollen, nectar, fruit, leaves, stem range offering a place to nestle
- Species near extinction or in progress of extinction (e.g.: *Liriodendron tulipifera*)
- Native species very well adapted to the proposed site

Aesthetically speaking, species grant a chromatic performance along en entire year. Each species gets to be a focal point, ranging its coloristic beauty and scent. Most of the used species were fruit with high landscape value, intensely coloured. Their value consists of the fact that they need a minimum care, spring cutting or fertilization, by using native species or species very well acclimatized in our country. Overall, the general appearance of a scrub, especially while flourishing, is truly outstanding. Ecologically, such scrubs are a food source for insects, by pollen, vegetative and fruit meal by nectar, like *Philadelphus coarius* and *Rosa rugosa* are for bees, and *Buddleja davidii*, for the butterflies. Another support method for the local fauna is that branches grant a protected space for sheltering or even reproduction.

One of the main changes next to classical design is the use of the idea of rustic or ecologic grass plot, which totally replaces traditional turf. The aesthetic value of this concept is the creation of a feeling of freedom, calling to mind the rural area, wild nature, in its purest shape. Such value is added the possibility to closely notice the fine movement of cereals in the wind, the rash and the shape of ears. The colour of decorative grass is closer to yellow, colour that can create an interior warmth state, good mood and privacy. As a combination, I also used wildflowers, in a proportion of 20%, of various colours, which vary as nuance and intensity. Such species contain a very large ecological areal, most of them being native species. The value is given by the ecological plasticity which makes them be easily maintained and not needing fertilizers or permanent irrigation.

The flowers I have chosen are evergreen or with self-seeding capacity. Besides the importance of the shape and ecological value, I have also pursued to meet the chromatic values. The trees are chosen by observing the same aesthetic and ecological criteria, being both species near extinction or native, and having as well an important role in the balance of the ecosystem.

Seeing the need of the family to privacy and to a relaxing space, I have used simuous, narrow alleys, which disclose surprises to the watcher, by their undulations. However, they have a minimum surface needed from a functional point of view. As well, I have modelled the micro-landform so that it offers new perspectives, reassuring, private spaces, linked amongst them by the principle of unity. I have tried to create a symbiosis among elements, therefore the endowments as a bench or the playhouse have as well a decorative purpose, subordinating to compositional principles, by the shape, size, colour and placement.

Gardens and their creatures have always shared the same space. Ants hillling, earthworms aerating the earth and bees pollinating the flowers are the most famous examples. But some horticulturists with a pretentious and obtuse vision on nature integrate them in the “dirty” or “unhealthy” category. As long as the idea of “cleanliness” is kept inside it is all right, for a change, when it applies in the garden, it becomes an issue, the term receiving here another value. Life on Earth is a functional system rich in many types of organisms which depend on biodiversity and balance. In the attempt to obtain a sanitary environment, many landscapers considered mistakenly understood species of animals, as being the source of problems. Such concept does not pursue to let the green area at hazard, but tries to regard reality without mistaken preconceptions, which may have drastic effects for the surrounding environment, independent from which we are striving to become. We are besides these creatures created in this environment, we have developed ourselves and perfectly adapted here; either we want it or no, we depend on some animals more than they depend on us.

In terms of such conceptions, there began a war against worms which involved a full arsenal of toxic substances, effect of which is reflected a lot beyond the fence of our garden. Urbanization and industrialization of agriculture led several species to extinction, once, species very common. Only when birds and butterflies stop visiting our garden, we start realizing that we have encountered an issue, although most of them do not find the decrease of the population as abnormal. Through the perspective of this idea, garden is the ideal place to reinstate the balance of natural systems.

This principle does not affect the style and composition of the project, there are only ideas which may help in choosing the used species and the chosen technology. Irrespective of the size of the space to be arranged, of the style, colours personal preferences, green area can be a balanced support for the ecosystem. Most of the gardens and parks only need small adjustments in order to become a space full of life, by adding plants and by meeting maintenance principles.
The most important requirements in the concept of wildlife gardening include offering shelter against storms, against wild animals, water, food, materials for nests, maybe even space for reproduction and breeding of nestlings. It may also be considered an attempt to build a firm trophic pyramid, which is not difficult as naturally, the green area should attract species from the already ecologically established and balanced local flora and fauna.

The gardens and parks are part of an urban mosaic which unites large built portions of cities, from one end to the other. One single green area can sometimes offer benefits to the ecosystem, but together, as part of this tight connection, it helps creatures to cross the city. Birds often fly very long distances in search of a refuge for winter or of a place to reproduce. A garden or a park can offer such conditions, or can be used as a place to rest, for food and water. Cities are for migratory species like deserts, as it makes wild life more difficult.

Such green areas full of life have next to their ecological value, a special beauty as well. They offer the possibility to study animals in various shapes, knowing the world we live in as it is, having as well the role to educate children.

Ecological methods include as well the observance of cyclicity of substance into nature. Using endemic species adapted to pedo-climatic conditions, we suppress the need to use artificial fertilizers or a large quantity of water. Such species are as naturally fed as possible, by water, nitrogen and carbon circuit in nature.

The ecological balance is established by biologically fighting against pest in the garden, amongst them, especially zoophagous species. They shall consume large quantities of the pest. Green areas can be hosts of a large number of creatures, some of them being skilled carnivors.

Bats are night insectivore mammals, which localize prey in its flight by an evolved sound system. The blue titmouse is an especially beautiful bird, yellow and bluish grey. It eats pest (insects, larvae, cutworms), often catching green flies and cutworms in order to eat its 5 to 10 nestlings.

Dragonflies live close to the water. Adults are extremely skilled fliers, capturing a large variety of flying insects. The frog is carnivore, and captures its prey like invertebrate species, like snails, by using their long and sticky tongue.

The hedgehog is most of all insectivore, although it shall eat a large variety of carnivores like snails with no shell, it shall eat depending on their existence. Out of old times, it is considered the friend of the gardener, its presence indicating a clean environment.

The ladybird, both the larvae and the mature insect, eat green flies, one of the most problematic damager. Once with the increased interest to species origin, more and more horticulturists become aware of the incredible diversity of plants of our planet. Two thirds of the species of plants are estimated to extinct by the end of our century.

Extinction has always been a natural process. Life of various species is affected by changes of the climate, topography and surrounding environment, which have always brought advantages to some species, leading to the extinction of others. The groups which cannot adapt fast enough to changes are removed, while others survive to evolutionary challenges.

Palaeontologists differentiate mass extinctions, when relatively large groups disappear during short periods of time, and a more gradual rate of extinction which characterizes other periods. The extinction rate of the species today is considered 1000 times higher than in other periods, as a result of human activities. 47% of the terrestrial and aquatic worldwide biomass is near extinction.

Landscaping is a determinant factor as by the use of certain species in green areas it can save this crisis, as in case of yew, which is near extinction in the natural environment due to the over-collection for medicine use in the treatment of malaria and cancer in Uganda, Kenya and India but intensely used in parks and gardens.

We have tried, out of such perspective, to use species both aesthetic and ecologically valuable, neat extinction and offering support to the local fauna.

Various species of plants have very different needs related to climate, type of soil and biological essential relations. For such reason, various plant communities are found in various habitats. Trees with falling trees, for example, are predominant in temperate forests and do not adapt in tempered arid ecosystems like meadows and desert where herbaceous and succulent species populate the area. The maintenance of diversity in native ecosystems is critical for the worldwide diversity of plants. By only maintaining certain plant species makes ecosystem very susceptible to the attack of diseases and pest.

For some species of plants, green areas designed by the human kind are the ultimate refuge. Therefore, there are species having totally extinct in wild nature but having survived in gardens and parks. Due to its beauty, *Tulipa sprengeri* was very famous and picked from its natural environment to its total extinction. However, it keeps existing in landscaped spaces and is very appreciated by gardeners. This category includes species like: *Techopilarea cyanocrocus, Firmiana major* and *Rhododendron kanehirai*. An issue of this phenomenon is that plants used for decoration come from the same genes in order to keep its features desired by cultivators.
Conclusions

The main idea of this project comes from a concept of ecology, according to which all kingdoms and species are interdependent, each of them having an ecological niche and a well defined role which services as various forms to the interest and cohabitation of all species of the earth.

This project tries to prove that the intrinsic value of an organism is indispensable, irrespective of its aesthetic value.

References