

# A Historical Overview of Landscape Architecture Profession in Croatia from 1900 to 1945

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## Summary

In the period from 1900 to 1945 the profession that is today known as the landscape architecture was developing. The paper presents a chronological overview, problem inquiry and analysis of specific problem categories: professional experience, educational and general professional status of the landscape profession in the given period and positioning of profession within the biotechnical, agricultural and technical professions. It ponders and analyses archival records and other historical archival material about the practice, educational and professional status and incentives for the development of the landscape profession. The results show that the key players in establishing profession of landscape architecture were professionals from natural and biotechnical field: botanists and agronomists, as well as the first educated garden architects who studied garden architecture abroad. In the given period just garden architecture was developed. It was an integral part of the gardening profession and meant designing and constructing parks and other green areas as well as garden art. Scientifically and educationally, the landscape profession has been developed in the biotechnical field but with the knowledge upgrade of technical profession. At that time it was closely related to the City engineering offices as an integral part of urban design. The greatest contribution for developing of the landscape profession was given by individuals gathered at Horticultural Society in Zagreb: V. Vouk, Z. Arnold, C. Jeglič, P. Ungar, S. Klaić and E. Polak.

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## Key words

gardening, garden architecture, landscaping, landscape architecture

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## Introduction

Gardening in Croatia was known before the 20<sup>th</sup> century but at the beginning of 20<sup>th</sup> century it started to be affirmed particularly in the field of landscape design. That is the time period of professional activity that is almost unknown, insufficiently researched and unsystematically registered, documented and valorized. Also, there is little knowledge about working and educational context in which the profession was born, about the incentives of development and the actors of professional and educational activity.

The general social and political context at the beginning of the 20<sup>th</sup> century has encouraged the reflection of gardening as an important branch of the practice, education and science. The collapse of the Austro-Hungarian Monarchy meant lack of schools in the field of gardening across the entire territory of newly established country, which encouraged the development of education. On the other hand, the first “regulatory basis of cities”, were documents of urban development and planning. They marked zones for positioning and design of new urban parks that in further steps needed the appropriate professional staff for projects design and maintenance. However, gardening was then, both educationally and economically, inadequately developed in the field of horticulture and garden architecture. The tasks of designing open spaces were usually taken over by foreign gardeners, specialized in garden architecture.

In the 19<sup>th</sup> and early 20<sup>th</sup> centuries, gardening became part of the agricultural field. Terminologically but also educationally, several unique professions have been united: vegetable growing, horticulture and garden (landscape) architecture. During the 20<sup>th</sup> century, gardening was developing within more specialized branches. Therefore, historical records show that at the end of the 19<sup>th</sup> century there is use of the term “ornamental gardening”. The notion of general gardening included production branches such as vegetable production. In contrast, “ornamental gardening” has terminology implications for the open space design with emphasized “aesthetic” purpose. “Ornamental gardening” has worked within two fields: production or cultivation of plants for parks and other open spaces (horticulture), and design of gardens, parks and other open spaces (garden architecture). A more precise division is given by Jelachich (1934), which divides gardening activity into gardening production and garden design. In accordance with his beliefs, gardening production is a part of agriculture, and for the purpose it is divided into “luxury” (production of plants for aesthetic purposes) and “utilization” (production of plants for practical, utilitarian purposes). The process of designing gardens, parks and other open spaces is part of the craft and is divided into “physical work” (constructing and maintaining) and “intellectual work” (design).

Efforts in the direction of education and practical work, according to the data, can be classified within three levels. First one is improvement and development of profession at a highly professional and scientific level. Second one is development of highly professional and high school education. Third is professional development and recognition (professional societies, encouragement of general awareness of the culture of design of parks and gardens, profession incorporation into the legislative system, etc.).

## Material and methods

The aim of this paper was to document events, people and professional work of landscape architecture from 1900 to 1940. The general professional context in which the profession worked and the outcomes of its positioning in high school education, higher and faculty education, science but also on the general market and social level were determined. The paper is based on the study of archival material, primarily the documents of the State Archives in Zagreb and the archives and library fund of the Faculty of Agriculture, University of Zagreb. Official papers, newsletters and journals, as well as other literature and historical facts that were documenting or describing events, actors, legal and market data in a given time and historical context. The professional magazines: “*Uzoran vrtnar*”, “*Uzoran gospodar*”, “*Naš vrt*” and “*Hortikultura*” were analyzed. In the analytical review of documents, special emphasis is given to the area of landscape design and landscape architecture profession.

### Landscape Architecture between 1900 and 1945 - professional context

Z. Arnold, in 1935, speaks of the professions state at the inaugural habitation lecture “Gardening as a branch of agriculture and its economic value” at the Faculty of Agriculture and Forestry in Zagreb. He emphasizes that floriculture and the nurseries for ornamental plants, at that time, do not have large enough production in quantity or quality (import dominates over the production); seed production is limited to the import and resale of foreign seeds. He considers garden architecture as a profession that is only in the beginning of development (Pirnat, 1935). Vouk (1934a) also mentions similar theses, saying that from all gardening professionals on the market, “ornamental gardening” needs to be developed in educational and cultural area because it is the least developed. He explains that the cultivation of flowers and ornamental trees is the least represented on the market and they are mostly imported, despite the fact that we have favorable conditions for growing plants. Vouk considers that the field of garden architecture is “*at the first stage of development*” and gardening education is a “*specialized branch of wider agriculture field*”, so that it has to be upgraded “*in the aesthetic and artistic direction*”.

Some contemporaries believe that the reason for such situation is primarily due to the lack of appropriate education in the field of gardening. Vouk already in 1915 in magazine “*Gospodarska smotra*” under the title “Several Words on Horticulture in Croatia” remarks that there are not enough educated local gardeners and commits to idea of opening the gardening school. He expresses the fear of further degradation of gardening activity and education: “*The entire education of our gardeners is still without any theoretical education, and as gardening is now excluded from market law, this primitive way of vocational education will disappear. Attempts of professional education in horticulture through school education in agricultural schools are only partial (fruit growing, viticulture) or insufficiently organized (Božjakovina) or are only periodic and local (courses). It requires thorough, systematic and modern education ...*” (Vouk, 1934b). Indeed, for the design of urban parks, especially those which are the most significant, plants were imported from other countries in the absence of local production and as they were designed at the turn of the 19<sup>th</sup> and 20<sup>th</sup> centuries, they were made and maintained mostly by foreign gardeners.

Jellachich (1934) also debates about the horticultural situation, and he analyses and interprets that there are no laws at that time “... which would have *ex officio* regulate the legal remit of gardening” although it is needed. He outlined and concluded that plant production is properly included in the law whereas gardening activities are not “... gardening is not an agricultural production, so it is like any other regular, self-contained and unrestricted work.” He thinks that gardening, due to its specificity, needs to be regulated by law, but that is not so because “... such gardening crafts, which would manage by itself all gardening work, hardly exists locally, because the gardening profession in our country is still not specialized enough, for the gardener is solely to do gardening ... “. In the general view of profession, he notes that “Today’s state of our gardening is by no means satisfactory, although it cannot be denied that some progress has been made in this field in recent years. Plant production in some branches is completely lagging behind; in nurseries some species of ornamental perennials and ornamental plants and trees are generally not available although there is a great need for it; we do not have the culture of cut flowers in the winter time, even though it is yearly imported by large numbers from abroad...” and “...garden design is still completely in the most primitive beginnings.” (Jellachich, 1934).

Although other countries were considered much more developed in field of garden architecture (e.g. The American Society of Landscape Architects was founded in 1899; the first independent academic education program in landscape architecture in Europe was formed in 1919 at the Agricultural University of Norway), certain issues are present in other countries as well. For example, “VIII. Horticultural International Congress” held in Vienna, where delegates from all European and some overseas countries, in the section “gardening architects” discussed about “...their protection of the profession against abuses by unqualified powers, especially on the protection of the title “*garten-architekt*” (*architecte paysagiste*). The decision was made that in future garden architect get a higher education degree and a graduate exam, possibly at higher technical schools, where special departments would have to be opened for that profession.” (Arnold, 1927).

### The City of Zagreb as an example of profession activity between 1900 and 1945

At the beginning of the 20<sup>th</sup> century, there are already designed parks, promenades, gardens and other open spaces and a large number of new ones is planned. It was stimulated by the general modernization and expansion of the city and the urbanistic settings of this period. In charge of the design and maintenance of parks and other open spaces were gardening craftsmen (private gardens and parks), bishop gardeners (parks and plantations of the Zagreb Diocese) and city gardeners (also craftsmen) for all public parks and plantations of the City. City gardeners were employed by the city administration, on the basis of tenders being conducted, i.e. on the basis of the education and practice of registered gardeners, which in a large number of cases meant the engagement of gardeners from foreign countries: A. Luks (1870), J. Peklar from Maribor (1878-1892) and F. Jeržabek from Galicia (1893), also applicants such as M. Kollar from Austria and J. Kerhan from London (Knežević, 2003). The city gardeners shaped, constructed and maintained public city parks, but for some of the more significant parks, the city administration sometimes

hired foreign famous garden architects. For instance, the garden architect R. Siebeck, director of public parks and plantations in Vienna, was involved in designing Zrinjevac (Knežević, 1996). The gardener of the Botanic Garden in Zagreb was V. Durčanek from Czech Republic. Some gardeners (A. Gumhalter, J. Kohouček, A. Holletschek, H. Boeltahl and J. Kalina) are well known from the documents send to the City in the 1890s, in which complaint was made about the work of the city gardener because of the poor growth of plants in Zrinjevac (Knežević, 1996). Judging by the number of old gardens and parks that existed at that time, it was considered that there were still a large number of local gardeners who were engaged in garden maintenance (Jurčić, V., 1987; Jurcic, I., 1987).

For the construction of city parks, plants were bought and imported from foreign nurseries, so for the construction of Zrinjevac, the City Council purchased 300 plane trees (*Platanus acerifolia*) from Trieste, 110 “round” acacia trees in 1872 were delivered from Udine, and acquisition of “foreign flowers” (azaleas and rhododendrons) was made from Belgium for the Academy Square in Zagreb in 1883 (Knežević, 1996). Although most of the planted material was imported, certain nursery production still existed. The first big nursery in Zagreb was opened by the city gardener J. Peklar in 1885 because it was bound by a contract with the City and according to City records of 1887, 100 000 trees, shrubs and sown plants grew on six acres of land (Helman, 1994). Part of the urban equipment was commissioned for the construction of city parks, such as iron benches for Zrinjevac from Vienna (Knežević, 1996), yet some were still made in Croatia, such as a fence around the Academy Square made by locksmith A. Mesić (Knežević, 1996). The Upper Town stairs designed by M. Lenuci and technically detailed by the city’s engineer R. Melkus were “... probably the first element of urban equipment whose design originates from Zagreb ...” (Knežević, 2003).

City authorities themselves encouraged better organization and reform of gardening profession and in the City administration a “gardening board” was founded in 1892 that followed and directed gardening projects and expert issues (Knežević, 1996). At the same time there are also two companies dealing with garden architecture in Zagreb: the office of V. Belšan (creating “basics for modern parks, public and private, and home gardens) and P. Ungar (“design and re-design of home gardens”). The City also cares for its own experts, so the City gardener J. Peklar was send on a study trip to Austria and Germany to study progress in the field of “ornamental gardening” (Helman, 1994).

Even though many foreign gardeners were employed, in the 1930s, structure of gardeners, especially those in the field of landscape architecture, changed considerably. Work in City services is taken over by first educated landscape architects returned to Croatia after completing their studies or additional education from Prague, Vienna, Berlin, Paris or other cities (C. Jeglič, S. Klaić, P. Ungar). By the work of these people, first “modern” parks and gardens are created in Zagreb before World War II.

### **Horticulture Society in Zagreb – developer of profession in the first half of 20<sup>th</sup> century**

Effort to improve gardening in the practical, educational and general professional level as well as the commitment to an integral professional organization is a characteristic of time after World War I. The most prominent protagonists of profession were young engineers with new “modern” and advanced ideas, and a general civic and professional awareness was developing (Table 1). They contributed through the activities of the Horticultural Society, which in the 1930s took over all branches of gardening but with a special emphasis on two the least developed: horticulture and garden architecture.

The Society was founded by university professors from the field of botany, gardening and agriculture, as well as others who were also interested in improving gardening profession, organized according to other such societies that existed in the world. Founding Assembly was held on June 26, 1932 in the Hall of the Faculty of Agriculture and Forestry and on May 31, 1933 the “Social Rules” were approved by the decision of the governor administration of the Sava Banovina in Zagreb (No. 1159, II). Founders of the Society were V. Vouk, J. Jellachich and I. Sever, and the secretary was Z. Arnold. Other Board members were C. Jeglič and P. Ungar (the first educated landscape architects working in Croatia), professors I. Ritig (vegetable gardening, fruit growing, breweries) and A. Tavčar (plant breeding and genetics) and other experts: M. Triner (nursery owner), Kobilica K. (gardener), Hribar (architect), S. Pirnat (professor), Kušenić F. (main gardener of the Botanical Garden, University of Zagreb), Nestl S. (City Gardeners Supervisor in Varaždin) and others.

A great interest for the Horticultural Society in Zagreb shows also the fact that in 1933 it had 120 members, in 1934 there were 410 members and in 1935 almost 1000 (Vouk, 1935). Society changes its name into “Horticultural Society of the Kingdom of Yugoslavia” and organizes its “sections” in cities throughout the country. One of the most prominent goals of Society in the promotion of the profession was the publication of magazine “Naš vrt”, which emerged as a “review of garden culture and overall gardening”. The Horticultural Society’s tasks were also to hold professional lectures in Society as well as in public media, organization of excursions and exhibitions, establishment of libraries for members and promotion of the profession. The first foreign tour of the Society was a six-day excursion to Vienna in 1935 and the Austrian Horticultural Society took over the expert excursion guidance (Arnold, 1935). Society in Zagreb also participates in the preparation of state laws in 1935. The first and the most important guidelines of the Society work at the time of its emergence are “raising” horticulture, precisely in the field of education (Vouk, 1934a).

### **Professional journals as profession promoters between 1900 and 1940**

Period between 1900 and 1940 was a time with significant professional publishing activity. The magazine “*Uzorni vrtnar*” (“the magazine for advanced gardening and poultry game”) was published in period from 1934 to 1938 and the magazine “*Uzorni gospodar*” (“for all branches of agriculture and households”) was published as a monthly magazine. These magazines between 1925

and 1928 equally represent the subjects of general gardening, floristry, dendrology, fruit growing, vegetable growing and other agricultural professions and very modestly represent topics of garden architecture. Yet the magazine promoted ideas about horticulture and garden architecture and announced the founding of a “special” horticultural association.

The publication of an expert magazine “*Naš vrt*” was issued by the Society in Zagreb from 1934 onward. The aim of the magazine is “*to raise the sense of gardening, propagate the idea of a garden, and strive to raise horticulture in all its branches ...*” (Horticultural Society Committee, 1934). The magazine “*Naš vrt*” publishes a number of topics in the field of garden design, garden dendrology and floristry, presents symposia and exhibitions abroad, practices, provides practical advice and reports on the activities of the Society, expert topics, and sciences’ achievements in gardening. The magazine is concerned with floriculture and dendrology plants and topics from the field of landscape architecture and a very small share of articles from other areas of agriculture, and only if they are related to “garden culture”. Associates of the magazine are particularly concerned about the state of education and the general status of gardening profession.

### **Educational courses in the field of gardening - the fore-runner of higher education**

The first courses held for gardening were organized after 1903 when the administration established them on the Banovina property in Božjakovina. After 1915, there are also well known gardening courses in Zagreb, e.g. a several months long gardening course for war invalids with practical and theoretical training and an evening course for practical gardening (editorial board of magazine “*Naš vrt*”, 1936). After 1932 the Horticultural Society in Zagreb takes over organization of the courses. Courses were mostly held twice a year and with different programs for amateurs and professionals. The first was autumn “Amateur Garden Course for Ladies” in 1933 and 44 participants was enrolled. An overview of the available program courses (the magazine “*Naš vrt*”, year 1934-1938) shows that at the courses all branches of gardening and other agricultural professions are represented. The learning outcomes of amateur courses were directed towards the knowledge for design of home gardens, mainly from utilitarian and only partly from the aesthetic aspect. Professional courses were more specialized in horticulture and in some subjects in garden architecture. They were considered to be a “lower gardening school”; they qualified its attender for assistant gardener that could become gardener only by “apprenticeship”; in addition has to complete the course by passing the exam in front of the professional commission (theoretical knowledge), and to have many years of practical work in nursery (Vouk, 1934a). Higher education did not exist, but had to be upgraded abroad at “higher gardening schools” to get the title of a “gardening technician” capable of “*creating independent designs for gardens and parks, running nurseries for shrubs and trees and gardening businesses*” (Vouk, 1934a). Therefore, the Society considered maintaining the courses was only a temporary solution.

**Table 1.** Horticulture and garden architecture professionals (Fig.1) and their work in the field of garden architecture between 1900 and 1945

Name/surname	Education, professional and scientific activities before 1945.
<b>Vale Vouk</b> (1886, Gospić – 1962, Zagreb, Croatia)	<ul style="list-style-type: none"> <li>- field of work: botany</li> <li>- studied at the Faculty of Philosophy in Zagreb and Vienna; head of the Botanical Department and Botanical Garden of the University in Zagreb</li> <li>- associate member of the Austrian Horticultural Society in Vienna (from 1919); the initiator of the founder of Horticultural Society in Zagreb and its first president</li> <li>- associate of the magazines “Uzorni vrtlar” and “Uzorni gospodar”, “Naš vrt” and “Gartenzeitung“</li> <li>- the first lecturer of botany at the Faculty of Agriculture and Forestry</li> </ul>
<b>Zdravko Arnold</b> (1898, Zagreb – 1943, Zagreb, Croatia)	<ul style="list-style-type: none"> <li>- field of work: horticulture and garden art</li> <li>- studied natural sciences at the Faculty of Philosophy in Zagreb; studied at the Faculty of Agriculture and Forestry in Zagreb and in Vienna at <i>Hochschule fur Bodenkultur</i>; specialization in gardening and garden art in Paris (1933)</li> <li>- promoted to a Doctor of Philosophy (1927); first assistant professor in horticulture at the Faculty of Agriculture and Forestry in Zagreb (1936)</li> <li>- curator of the Botanical garden at the University of Zagreb (1926); founder and head of the Gardening Department at the Faculty of Agriculture and Forestry in Zagreb</li> <li>- associate of magazine “Uzorni vrtlar”, editor of magazine “Naš vrt” and magazine “Voćnjak, vrt i vinograd”, associate of magazine “Gartenschonheit” and “Gartenbauwissenschaft“</li> <li>- board member and secretary of Horticultural Society in Zagreb</li> <li>- lecturer at the Gardening School in Božjakovina and on Gardening Courses in Zagreb</li> </ul>
<b>Ciril Jeglič</b> (1897, Gabrovka kraj Litije, Slovenia – 1989, Radovljica, Slovenia)	<ul style="list-style-type: none"> <li>- studied at the Faculty of Agriculture and Forestry, University of Zagreb and Vienna (graduated in 1922); 1929 - 1930 specialization for gardening in Berlin</li> <li>- lecturer at Gardening School in Božjakovina (from 1932) and at Gardening Courses in Zagreb; advisor to the City of Zagreb for gardening (1932); head of City Gardens and Plantation in Zagreb (1934-1941)</li> <li>- board member and secretary of Horticultural Society in Zagreb</li> <li>- landscape design projects until 1945: Krešimir Square in Zagreb (1938), Medveščak Street in Zagreb; a proposal for reconstruction of the Svačićev Park in Zagreb (1932); re-design of the park at J.J. Strossmayera Square in Zagreb (1926); Victims of fascism Square in Zagreb (1934) and others</li> </ul>
<b>Pavao Ungar</b> (1905, Osijek – 1999, Zagreb, Croatia)	<ul style="list-style-type: none"> <li>- three-year gardening practice in Maribor and Vienna; a botanical study at the Faculty of Philosophy in Vienna; gardening and garden architecture studies in Berlin (1930)</li> <li>- two years of employment in the gardening company for park design and growing of perennials in Vienna;</li> <li>- 1932 he opened office for landscape design in Zagreb and made first modern private landscape design projects in Zagreb</li> <li>- teaches at Gardening school in Božjakovina and at Gardening courses in Zagreb</li> <li>- board member of Horticultural Society in Zagreb; associate of the magazine „Naš vrt“</li> </ul>
<b>Elza Polak</b> (1910, Ogulin – 1995, Zagreb, Croatia)	<ul style="list-style-type: none"> <li>- field of work: horticulture</li> <li>- graduated at Faculty of Agriculture and Forestry in Zagreb (1933)</li> <li>- teaches at Gardening school in Božjakovina (1933-1940); administrative clerk for gardening of former Governor administration in Zagreb (1940-1941.); head of the Evening Gardening School Zagreb</li> <li>- member of the Horticultural Society in Zagreb</li> <li>- after Second World War she is a promoter of the development of horticulture and landscape architecture at Faculty of Agriculture in Zagreb</li> </ul>
<b>Smiljan Klaić</b> (1912, Zagreb – 1989, Zagreb, Croatia)	<ul style="list-style-type: none"> <li>- graduated from natural sciences at the Faculty of Philosophy of the University of Zagreb (1936); graduated from the high school of gardening, garden and landscape architecture in Berlin - <i>Friedrich Wilhelms Univerzitet, Institut fur Garten und Landschafts-gestaltung</i> (1940)</li> <li>- worked at the nursery and garden center Jankomir, Assistant Garden Architect in the City office in Zagreb (1939); head of the City Parks in Zagreb (1942-1945)</li> <li>- board member of Horticultural Society in Zagreb;</li> <li>- projects up to 1945: Park “First Croatian Savings Bank” in Zagreb (1940), Park at the beginning of Pantovčak Street (1941); The Victims of fascism Square in Zagreb (1943)</li> </ul>



**Figure 1.** Leaders of the professional development of Landscape Architecture at the beginning of 20<sup>th</sup> century. First row from the left to the right: Vale Vouk, Zdravko Arnold, Ciril Jeglič; second row from the left to the right: Pavao Ungar, Smiljan Klaić, Elza Polak

### High school education in the field of gardening from 1900 to 1940

The first gardening school was founded in 1932 in Božjakovina (Vouk, 1934a) on the foundations of earlier agricultural school where experiments and practical training for certain agricultural professions were held. The organization of gardening education was taken over by C. Jeglič and the school operated until 1943 when it was closed because of Second World War. In addition to C. Jeglič, the lecturers were E. Polak, Z. Arnold and P. Ungar. However, it was considered that schools lacked certain vocational courses for the acquisition of complete gardening education.

The first complete program of gardening high schools in Croatia is set up by the Horticultural Society. Vouk (1934c), president of Society, proposed three gardening schools on the territory of the former country, gardening technical high school in Zagreb (for growing flowers, ornamental trees and shrubs and for garden art) and gardening technical high school for southern culture in Split or Dubrovnik (the third school was proposed in Belgrade for the cultivation of vegetables, medicinal and aromatic plants). Primarily, he proposes the opening of a school in Zagreb (Vouk, 1934c) that should educate professionals who will be able to design green areas in the cities: establish modern parks, promenades and alleys, plantations, private gardens and others, but also to deal with garden art, as well as floriculture, ornamental

trees and shrubs. According to Vouk, in the organization of such a school, the educational program should focus on “...*aesthetic and artistic upbringing of students...*” and it is necessary that in them “*lectures were given by specialists in natural sciences, agriculture and architecture...*”.

Already in 1932 the Society sends a proposal for the establishment of a gardening technical high school on the city's property in Kajzerica, Zagreb (Horticultural Society, 1934). The four-year gardening school was supposed to provide in education in the “complete gardening” where within the first three years it will held general gardening subjects, and in the fourth year, specialization in one of the field of gardening: vegetable growing, floriculture, dendrology and nursery, design and construction of gardens and parks. The curriculum held subjects: “Garden Design and Construction”, “Gardening Technique”, “Gardening Construction and Mechanical Engineering” and “The History of Garden Art” (Horticultural Society, 1934). Due to market and pre-war events this type of school has not been founded until after Second World War.

### Higher education in the field of gardening from 1900 to 1940

Higher education in the field of horticulture and garden architecture did not exist in Croatia but countries abroad had it and there professionals were trained or upgraded their knowledge (Z. Arnold studies agronomy in Zagreb and Vienna, and have specialization in gardening and garden art in Paris; P. Ungar completes the gardening and garden architecture studies in Berlin; S. Klaić after graduating from the Faculty of Philosophy in Zagreb enrolls in the School of Gardening, Garden and Landscape Architecture in Berlin - “*Institut für Garten und Landschaftsgestaltung*”). Awareness of the need for higher education as well as “too expensive” education abroad encourages its founding. Vouk still in 1934 notes: *Horticulture today is a separate science discipline as well as agriculture and forestry, it has its scientific problems ... we cannot even think of the faculties of this kind, but we hope that at our agricultural colleges will be established a department or at least an assistant professor for horticulture, which will give individuals the opportunity to specialize in this branch of wider agriculture, which will also take over the task of establishing our institutes for scientific study of specifically our agricultural conditions*” (Vouk, 1934a).

Higher education in agriculture starts on August 31<sup>st</sup>, 1919 by establishing the Faculty of Agriculture and Forestry, University of Zagreb. That same year started teaching at two separate departments: forestry and agriculture. The Faculty's curricula corresponded to the training of the agriculture school in Vienna - Hochschule für Bodenkultur (Svečnjak i Juric, 2009). After 1930, there is a change in the structure and program of the Faculty due to the development of certain agricultural professions and the curriculum is reorganized. However, in the field of gardening of Faculty curricula only these subjects were held: “Gardening” (1919/20-1929/30 as optional course), Gardening and Floriculture (curriculum 1930/31-1935/36) and Gardening and Horticulture (curriculum 1936/3-1947/48).

The beginning of Faculty education in the field of gardening is considered to be in 1936 when the first assistant professor from the field of horticulture was appointed – Z. Arnold, who founded

the Department of Horticulture in 1937 and was its first head (resolution No. 21819, December 8<sup>th</sup>, 1937). The activity of the Department was to represent and develop all branches of gardening in a scientific, educational and practical view: growing ornamental plants, horticulture, vegetable growing but also landscape architecture and garden art. After completing their studies, those who chose a field of gardening and garden architecture, would train and specialize in the Department through a special program (Jurčić, V., 1987). Z. Arnold's early death had caused that the program courses from 1943 to 1949 temporarily were taken over by N. Šerman and P. Kvakon. By their main field of work they were not experts in the field of horticulture. In 1949 the Department takes over E. Polak, but the changes in the education after that period are slow and more focused on increasing education in the vegetable growing, floriculture and horticulture with virtually no shift in the field of landscape architecture. Until 1980 gardening takes place within Fruticulture-Viticulture-Gardening study, and only after the 1980's it works as an independent study of Gardening and Landscape Design (later divided into Study of Horticulture and Study of Landscape Architecture).

In the short but intense period between 1900 and 1940 gardening professions have changed radically: nurseries were established, a Horticultural Department was founded, a School in Božjakovina and Society were established and foundations for the development of different levels of education. Landscape projects are taken over by local educated garden (landscape) architects who worked in development of horticulture and landscape architecture. However, social and political conditions interrupted many activities and general professional action (magazine “*Naš vrt*” ceased to be published in 1938, school in Božjakovina closed in 1943 and activities of the Society stopped). During World War II almost all green areas are uncared for and the activities of designing, maintaining and cultivation plants are minimized or absent and for a number of years' profession stop developing, not just at the Faculty, but also in general professional meaning.

### Discussion and Conclusions

Period between First and Second World War was an intense time of forming not just gardening but also horticulture and landscape architecture profession. Even though these professions were seen fully, the professionals were aware of the specificity each of them and were guided and dedicated more to “garden” architecture and garden art (today's landscape architecture) or “park or garden dendrology “ and “seed growing and transplanting” (now horticulture). By 1940 the profession of a landscaped architect was called “garden architecture”, coincided with horticulture in the field of “ornamental gardening” and the area of “wider agricultural professions”. Garden architecture at that time imply filed of landscape design: design and construction of parks and other green areas in the city, and garden art.

At the turn of the 19<sup>th</sup> to 20<sup>th</sup> century, the jobs of the landscape architect were performed by gardeners who specialized in the field of garden architecture and mostly they were foreign gardeners educated abroad. City gardeners during this period work on design for parks and other projects independently or in cooperation with City offices. In the 1930s, landscaping jobs were taken over by educated gardeners (later landscape architects) who finished their education at foreign studies specializing in the field of garden

and landscape architecture. The first garden architects working in Croatia were C. Jeglič, P. Ungar and S. Klaić. In addition to these, in the development of the landscape architecture, great contributions were made by experts gathered in the Horticultural Society in Zagreb. From the horticultural field, they were Z. Arnold and E. Polak, botanist V. Vouk and other experts mostly from other agricultural professions.

Education in the field of gardening in general was not developed. From the 1930s onwards, education takes place at Gardening School in Božjakovina and by gardening courses which were considered as insufficient and temporary solution and this situation was present until the Second World War. Higher education in the field of gardening took place at the Faculty of Agriculture and Forestry but did not exist as an education of a particular orientation of gardening. Nevertheless, in the period from the establishment of the Faculty until 1945, the foundations for further development were set up by appointing the first assistant professor from the field of horticulture and the establishment of the Gardening Department. The Gardening Department was developing all branches of gardening and thus the field of garden (later landscape) architecture. Therefore, the education of garden architects who were then involved in landscape design were developing in the biotechnical field of science with the upgrading of knowledge from the technical and art professions.

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