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NIKITSKY BOTANIC GARDEN IN CRIMEA IN THE CONTEXT OF BOTANIC GARDENS FORMATION PROBLEM OF EUROPE AND RUSSIA

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For the first time, the history and comparative aspects of the botanic gardens formation in Europe and Russia, as well as the contributions of reformers and scientists working in Botanic gardens and World Universities are considered. In different years, they made a significant contribution to the development of the mankind views on the ecology and flora of the various Black Sea area regions. Botanic gardens, as centers of science and education, appeared in the Hellenism period. They were later transformed into various parks and museums, becoming the foundation of the universities formation, the development of pharmaceutical education, the preservation of the ecology and the fauna of the regions of the world. In the 18th century, Moscow, St. Petersburg, Odessa, as well as Crimea, became the center of the development of the Botanic Gardens of the Russian Empire. It has been shown that public figures from France, England, Sweden and Russia had made a significant contribution to the establishment and study of the Botanic Gardens. Special attention has been given to the formation of the Nikitsky Botanic garden in Crimea. Duke de Richelieu, graph M.S. Vorontsov, H.H. Steven, E. Wolf contributed to its creation. The organization of the Nikitsky Botanic Garden began with the annexation of Crimea to Russia during the era of Catherine II and Alexander I. Since the 19th century, Crimea has become a new center for the collection of ornamental and medicinal plants, viticulture, exemplary garden art and ecology. The centuries-old activities of the Nikitsky Botanic garden of Crimea became the basis for the exchange of experience in studying and preserving the flora of Southern Russia as well as other countries of the Black Sea region. It was noted that the Nikitsky Botanic Garden had received various diplomas and awards, both in the Russian Empire and after the October Revolution in the USSR.

Key words: ecology, Botanic Garden, university, museum, Nikitsky Botanic Garden.

[Моргуль Е.В., Склярова Е.К. Никитский ботанический сад в Крыму в контексте проблемы становления ботанических садов Европы и России]

Впервые рассматривается история становления и сравнительные аспекты формирования Ботанических садов в Европе и России, а также вклад реформаторов и ученых, работавших в Ботанических садах и университетах мира. В разные годы они внесли значительный вклад в развитие представлений человечества об экологии и флоре различных регионов Причерноморья. Ботанические сады, как центры науки и образования появились в эпоху эллинизма. В дальнейшем они были преобразованы в различные парки и музеи, став основой становления университетов, развития фармацевтического образования, сохранения экологии и фауны регионов мира. В XVIII в. Москва, Санкт-Петербург, Одесса, а также Крым стали центром развития Ботанических садов Российской империи. Показано, что значительный вклад в становление и изучение Ботанических садов внесли общественные деятели Франции, Англии, Швеции и России. Особое внимание уделено вопросу формирования Никитского Ботанического сада в Крыму. Герцог де Ришелье, граф М.С. Воронцов, Х.Х. Стевен, Е.В. Вульф способствовали его созданию. Организация Никитского Ботанического сада началась после присоединения Крыма к России в эпоху Екатерины II и Александра I. С XIX века Крым стал новым центром коллекционирования декоративных и лекарственных растений, виноградарства, образцового садово-паркового искусства и экологии. Многовековая деятельность Никитского Ботанического сада Крыма стала основой обмена опытом изучения и сохранения флоры Юга России, а также других стран Причерноморского региона. Отмечено, что Никитский Ботанический сад получал различные дипломы и награды, как в Российской империи, так и после Октябрьской революции в годы существования СССР.

Ключевые слова: экология, Ботанический сад, университет, музей, Никитский Ботанический сад.

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The urgency of the study of the development of the Botanic gardens of the world and Greater Black Sea area is conditioned by the insufficient level of their study in the context of "the experience of the organization and the peculiarities of the Medical History Olympiads conducting" [4 (p. 51), lack of comparative work on the medical museum management studies of Crimea, the Museum of History of Georgian medicine and the University Museum of Medical History of Moldova [11, p. 79, 84]. These problems are also not reflected in the study of the problems of the regional studies of Southern Russia [12, p. 3].

Botanic Gardens, as well as centers of science and education in the Hellenism era existed in Alexandria, Antioch, Pergamum. Alexandria Museion became one of the main scientific and cultural centers of the ancient world. A part of the palace buildings along the harbour was set aside, the museum was also built and the alley was broken. The Museion included the famous Alexandria library and the repository of manuscripts. In addition to it, there were botanic and zoological gardens. There were scientific debates, lectures, studies in the fields of history, astronomy, mathematics, medicine, as well as botany and zoology. At that time, scientists were interested in the flora of various countries of the world and Greater Black Sea area.

Since the 14th century, in Europe, pharmaceutical Botanic gardens had been distributed. The first one was laid in Italy in the beginning of the 14th century. The botanic gardens of Salerno, Padua, Pisa, Bologna, Naples and Florence were the most famous. In France, the first botanic garden was founded at the frontier of the 16th -17th centuries. In Montpellier and Paris, where the palace garden was transformed into the botanic named "the Royal Garden of medicinal plants". The archiater of Louis XIV became his supervisor. The Royal Botanic Garden of France was then transformed into " the Museum of Natural History", becoming a training and research institution. The problems of natural science, botany, zoology, pharmacology were designed. In the 16th-17th centuries Botanic Gardens were founded in the Netherlands (Leiden, Amsterdam), Spain (Madrid), England (Oxford). The doctor and the director of the Botanic Garden in Vienna of Emperor Maximilian, founded the Botanic garden at the Medical University and studied the flora of the east. For the first time, a chestnut, lily, tulips, hyacinths were brought into this garden from Turkey [17, p. 136].

French public figures contributed significantly to the development of botanic gardens of the world. According to the decree of the King of France, lectures were given on the base of the botanic garden, which "was laid in 15th century as the garden of medicinal plants; In 1635, it was reorganized by the doctors of Louis XIII, began to include natural-historical collections, and it had become an extensive research institute by the 18th century" [8, p. CVII]. The naturalist and scientist of France, biologist, professor of zoology, member of the Paris Academy of Sciences, J. Lamarck suggested to reorganize the Royal Botanic Garden of France into "the Museum of Natural History". After publishing his "Philosophy of Zoology", it was noted that the scientist was interested in the problem of "changing Face of the Earth" [7, p. XVI]. In the second half of the 18th century, France was

required to exclude the influence of the church on education and to transform private schools into higher pharmaceutical schools.

Widespread plant descriptions in Western Europe, as a manual for zoology and pharmacy, got in Russia at different times. The Pharmaceutical order initiative led to the expansion of the range of known plants. Foreigners were interested in the medicinal plants of Russia, in their turn. In 1618, English botanist, J. Tradescant, designing botanic gardens in England, was sent to Russia and Turkey under the guise of a private person. He visited Constantinople, and took the seeds of grass, shrubs and wood stalks from Russia to found the Botanic Garden in England. He became the first scientist, who studied the flora of Russia. Tradescant's collection became the basis of the first public Museum in England-museum Tradescantianum [22], and the plant collection of the scientist was the basis of the Ashmolean Museum at Oxford [26]. In the UK, "Industrial revolution and urbanization have had an impact on the environment", stressing the need for ecology [15, 61], studies of the negative effects of urbanization [28]. Victorian urbanization, highlighting the problem of "mortality and health in Britain" [10, 67], stressing the need to protect the environment. British museums have begun to play a decisive role in the formation of an environmental creation, such as the "cultural phenomenon" [25, 10529].

In St. Petersburg, the Academy of Sciences, established at the initiative of Peter I in 1725, became a scientific and educational institution. In its presence a gymnasium, a university, a library, an anatomical theater, a museum and a botanic garden were created. It was anticipated that foreign scientists should be attracted to study the natural wealth of Russia. In St. Petersburg, in 1714, a pharmaceutical garden was founded on the pharmaceutical Island by decree of Peter 1. His first director was Doctor of Medicine, I. Sigizbek. Later he became the professor of Botany and the Natural History of the Russian Academy of Sciences, creating the collection of foreign and domestic plants. Author of the Saint Petersburg Botanic Garden catalogue, the founder of the higher pharmaceutical education in Russia, the head of pharmacology, doctor, botanist, professor, academician of the Russian Academy of Sciences, T. Smelovskij (1781-1815) translated into Russian C. Linnaeus's "Philosophy of Botany", contributing to the development of botanical terminology. Studying the flora of Russia, pointing to the need to prevent medicinal counterfeiting, he facilitated the substitution of foreign exotic medicinal plants and medications for domestic ones [5, 57-59].

According to the decree of Peter I in 1706, the Moscow pharmaceutical garden was also laid. It was originally created for the cultivation of medicinal plants, belonged to the Medical board, and then in 1805 Moscow State University bought it. At the time of the Patriotic War in 1812, the Botanic garden was destroyed during the fire in Moscow. During the existence of the USSR the pharmaceutical garden became the branch of the Botanic Garden of Moscow State University. On the place of the modern Botanic Garden of Moscow in 1717, the pharmaceutical garden was originally created. Medicinal plants (chamomile, wormwood, sage, mint, chicory) sent to the pharmacies of Moscow and St. Petersburg after handling, providing state pharmacies with herbs. Decree of 1721 set the problem of finding medicinal plants in all provinces of Russia. Since 1735, the work had begun on the creation of the medicinal plants collection. In 1798, after the opening of the Medical and Surgical Academy, the pharmaceutical garden was transferred to it as a training base and renamed the Botanic Garden. The garden of graph Vorontsov in Moscow was adapted to the botanic garden with places for medicinal plants cultivation.

After the annexation of Crimea to Russia in 1783, the development of the Crimean lands began in the period of Catherine II. Crimea and Odessa became the new center of collecting in Russia of the decorative and medicinal plants of the west and east. Opening of the Odessa port, the annexation of Crimea changed the development of the flora of Russia in favour of the Black Sea. Odessa merchants, horticulturists, scientists began to

maintain trade relations with Italy, France and Turkey. The favorable natural conditions of the territory attracted Russian aristocracy to the Crimea, who "began building the palaces and summer residences, surrounding them with gardens and parks. As private individuals, these gardens were repeatedly changed hands and were not able to play a role in the development of local horticulture and viticulture. Nikitsky Botanic Garden was fated to carry out this noble mission. It was laid in September 1812 as the Imperial "economical-botanic garden", and for its placing the site near the village of Nikita was chosen, based four centuries before this by the Greek settlers "[1]. Unlike the countries of Europe, "the Imperial Nikitsky Botanic" Garden was initially a public institution. In 1811 in St. Petersburg, Emperor Alexander I signed "the decree establishing the Imperial state Botanic Garden in Crimea". The decree was issued at the request of the French aristocrat, the military governor, who ruled the Novorossiskregion, the founder and the town governor of Odessa, Duke de Richelieu (1766-1822). He supported emigrants from France, as well as from Bulgaria and Romania, Greece and Armenia. From France, the Duke issued several varieties of grape vines, laying the foundation for Crimean wine-making [9, p. 33-49]. The influx of migrants and the cultivation of new plants facilitated the settlement of the southern Russia and Crimea, Rostov-on-Don and Taganrog, Odessa and Kherson. Then the proper Botanic garden appeared in Odessa, becoming in the USSR the property of the Odessa National University, one of the oldest parks in Odessa. After the dissolution of the USSR, it is considered one of the founders of parks in Ukraine.

Emperor Alexander I, visiting Odessa, Crimea, was thrilled with the innovations of the Novorossiskregion and duke Richelieu. In 19th century the initiative to establish botanic gardens of duke Richelieu, who ruled the Novorossisk krai, was further developed with the support of Novorossisk and Bessarabian Governor-General, graph M. S. Vorontsov (1782-1856). The son of the Russian envoy in London, graph S. R. Vorontsov, contributed to the creation of a number of parks, the "Agricultural society" of southern Russia, the ecological development of the Novorossisk krai, Odessa, Alupka. M. S. Vorontsov became the creator of the famous Alupka palace-museum [6]. The building was surrounded by the relic park [22].

The botanist and the expert in horticulture, H.H Stephen (1781-1863) was appointed to the first director of the Nikitsky Botanic Garden. To develop horticulture in southern Russia, he sought to establish a scientific institution, collect the most complete collection of thermophilic plants, create a plantation of southern fruit crops to help the gardeners of Crimea, and lay a farm to sell seedlings to other parts of Russia. He established a business relationship with the well-known institutions at the time in Russia and abroad, receiving seeds and seedlings from them. As a result, three years from the farm of Nikitsky Botanic Garden began to sell various varieties of fruit and ornamental plants. The great emphasis was placed on the study and collecting of local tree species, ornamental plants and herbarium. He founded the gardener's school, the science library, and the museum. In the early years of the garden establishment there were evergreen deciduous plants, palms, bamboo. Through scientific H. Stephen's activity, the Flora of southern Russia is obliged to distribute a large number of new varieties of plants. With the names of the first leaders of the Nikitsky Botanic Gardens, H. Stephen, N. Gartvis the introduction of valuable varieties of fruit crops, grapes, ornamental plants was linked, which had a great influence on the ecology of Crimea. "The Crimean War has had a further impact on the health development and ecology of the region" [28, p. 24].

The region's pre-revolutionary period of ecology development was related to the activities of Russian botany V. N. Lubimenko, N. I. Kuznetsov, E. V. Wolf. "Deontology of life" of many prominent scientists determined the progressive development of science [19, p. 3], "the duty of a doctor and a citizen" [18, p. 37], "biochemical research" [13, p. 90]. After the Civil war in the Nikitsky Botanic Garden, the collections of subtropical plants were rep-

lenished, laboratories were created, scientific research was conducted, and the Wine Research Institute was established. "The heirs of the spiritual traditions of medicine" determined the progressive development of ecological thinking based on "the study of the past generations experience" [20, p. 173].

During the years of the Great Patriotic War, the universities and Botanic Gardens of the North Caucasus "gained invaluable experience in wartime" [16, p. 112]. "In the summer of 1942, thousands of citizens arrived from the eastern regions of Ukraine, Crimea, Rostov region in Voroshilovsk (Stavropol)" [16, p. 69]. The destruction of many plants in Crimea and the northern Caucasus was a negative moment. The Germans removed scientific equipment from the Nikitsky Botanic Garden, as well as precious herbarium, collected by E.V. Wolf. Having acquired knowledge and experience, scientists worked in Sofia and Constantinople universities, and "protected the Crimea during the years of the Great Patriotic War" [26, p. 47]. After the liberation of Yalta in 1944, the director of the garden A. S. Cowerga, traveling thousands of kilometers on the roads of Poland and Germany, found herbarium in a small town near Berlin and again brought him to Crimea [21, p. 75]. During the war, scientists of Nikitsky Botanic Garden, discovered cytosine in the fruits of cytisine, growing in Crimea, which was likelobeline (alkaloid extracted from lobelia, growing in Central and North America). It was impossible to obtain it from abroad in the Second World War. The entire population of Yalta came to the rescue of scientists in Crimea for stocking this raw material. The raw material was then reworked at the factory in Moscow, receiving the necessary quantity of medication. The search for local raw materials for health, the use of wild plants for the preparation of vulnerary remedy became indispensable. The technology had been developed to obtain the galena medication with high content of vitamin from the local raw materials of Crimea: hips, pine straws, firs, junipers. Immediately after the liberation of the Crimea in 1944, rehabilitation work began in the Nikitsky Botanic Garden.

The Nikitsky Botanic Garden received various diplomas and awards, both in the Russian Empire and after the October Revolution in the USSR. In 1893, a significant event was the receipt of the Diploma of the International exhibition in Chicago on awarding the Nikitsky Botanic garden medals for Muscat wine. The landmark event was the celebration of the centenary of the garden. During this period, a seaside park was laid, in which many subtropical plants grew. By the centenary of the Nikitsky Botanic Garden (1812-1912), the Government of Nikolai II issued a special medal with the slogan "Through Science to Life" in 1912. In 1962, in connection with the 150 anniversary of the Nikitsky Botanic Garden, he was awarded the Order of the Labour Red Banner and a new commemorative medal was issued. The decree of the Presidium of the Supreme Soviet of the USSR on the award the L.I. Brezhnev and M. Georgadze signed.

In the USSR, large areas of the country were occupied by varieties of plants from the Nikitsky Botanic Garden. The regional offices of the Botanic Garden of Alushta and Simferopol region were engaged in selection of the southern fruits (peach, apricot, cherries) and nut species (almonds, walnut nut), as well as oil and ornamental plants for breeding them in Southern Russia. During this period, the Nikitsky Botanic Garden was subordinated to the All-Union Lenin Academy of Agricultural Sciences, and after the dissolution of the USSR until March 18, 2014, was part of the National Academy of Agrarian Sciences of Ukraine. Since 2015, - the State budget institution of Crimea.

In the 21st century, scientists of the Nikitsky Botanic Garden aim to improve the ecology and landscape of Crimea. Different varieties of a peach, an apricot, a cherry, a plum, an almond, a fig, a grenade, a walnut were raised by local scientists. Chinese fan palms, cypresses, yew-trees, umbrella pine have cultivated since the beginning of the 19th century. Organ-pipe cactuses, agaves, prickly pears were brought from Mexico. A decorative Japanese banana was adopted at the end of the Palm Alley. A significant number of fruit tree

varieties, rare conifers and evergreen breeds, olives, rosary, chrysanthemum, volatile-oil-bearing plants (roses, lavender, iris, violets), the age-old groves of the cedar of Lebanon, and the cork oaks were the basis of the Nikitsky Botanic Garden. It has become a vivid example of the garden art and ecology in the world.

Thus, botanic gardens, like the centers of science and education, appeared in the Hellenism era. They were later transformed into various parks and museums, becoming the foundation of the universities, the development of pharmaceutical education, the preservation of the ecology and the fauna of the regions of the world. In the 18th century. Moscow, St. Petersburg, Odessa, as well as Crimea, became the center of the development of Botanic gardens and parks of Russia. Public figures of France and Sweden made a significant contribution to the establishment and study of the Botanic Gardens of Greater Black Sea area. England, Russia. After the annexation of Crimea to Russia in the era of Catherine II and Alexander I, the organization of the Nikitsky Botanic Garden began. Duke de Richelieu, graph M. S. Vorontsov, H. H. Steven, E. V. Wolf contributed to the creation and development of the Nikitsky Botanic Garden. Since the 19th century, Crimea has become a new center for the collection of ornamental and medicinal plants, viticulture, exemplary garden art and ecology. The centuries-old activities of the Nikitsky Botanic Garden have become the basis for exchanging experiences in studying and preserving the flora of Greater Black Sea area.

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