



Sciences of Europe

VOL 3, No 38 (2019)

Sciences of Europe
(Praha, Czech Republic)

ISSN 3162-2364

The journal is registered and published in Czech Republic.
Articles in all spheres of sciences are published in the journal.

Journal is published in Czech, English, Polish, Russian, Chinese, German and French.

Articles are accepted each month.

Frequency: 12 issues per year.

Format - A4

All articles are reviewed

Free access to the electronic version of journal

All manuscripts are peer reviewed by experts in the respective field. Authors of the manuscripts bear responsibility for their content, credibility and reliability.

Editorial board doesn't expect the manuscripts' authors to always agree with its opinion.

Chief editor: Petr Bohacek

Managing editor: Michal Hudecek

- Jiří Pospíšil (Organic and Medicinal Chemistry) Zentiva
- Jaroslav Fährnich (Organic Chemistry) Institute of Organic Chemistry and Biochemistry Academy of Sciences of the Czech Republic
- Smirnova Oksana K., Doctor of Pedagogical Sciences, Professor, Department of History (Moscow, Russia);
- Rasa Boháček – Ph.D. člen Česká zemědělská univerzita v Praze
- Naumov Jaroslav S., MD, Ph.D., assistant professor of history of medicine and the social sciences and humanities. (Kiev, Ukraine)
- Viktor Pour – Ph.D. člen Univerzita Pardubice
- Petrenko Svyatoslav, PhD in geography, lecturer in social and economic geography. (Kharkov, Ukraine)
- Karel Schwaninger – Ph.D. člen Vysoká škola báňská – Technická univerzita Ostrava
- Kozachenko Artem Leonidovich, Doctor of Pedagogical Sciences, Professor, Department of History (Moscow, Russia);
- Václav Pittner -Ph.D. člen Technická univerzita v Liberci
- Dudnik Oleg Arturovich, Doctor of Physical and Mathematical Sciences, Professor, Department of Physical and Mathematical management methods. (Chernivtsi, Ukraine)
- Konovalov Artem Nikolaevich, Doctor of Psychology, Professor, Chair of General Psychology and Pedagogy. (Minsk, Belarus)

«Sciences of Europe» -

Editorial office: Křižíkova 384/101 Karlín, 186 00 Praha

E-mail: info@european-science.org

Web: www.european-science.org

CONTENT

ECONOMIC SCIENCES

<i>Arsenyev Yu.N., Davydova T.Yu.</i> DECISION THEORY: EVOLUTION, PRESENT, FUTURE...3	<i>Dobizha N.V.</i> ENSURING COMPETITIVENESS IN THE MARKET OF AGRICULTURAL EQUIPMENT.....11
<i>Normova T.A., Cornovan E.Y., Bedovskaya Y.I.</i> STRATEGIC ANALYSIS AS A TOOL FOR THE MANAGEMENT OF THE ENTERPRISE.....5	<i>Sobolev V.G.</i> USING OF PROJECT APPROACH IN DEVELOPMENT OF EFFECTIVE PERSONNEL MANAGEMENT TECHNOLOGY14
<i>Hasanov A.N., Abbasova S.G.</i> SPECIFIC FEATURES OF ENTREPRENEURSHIP IN TOURISM.....8	<i>Babli O.N., Tymchenko K.S.</i> PROBLEMS AND PROSPECTS OF THE DEVELOPMENT OF WINEMAKING ENTERPRISES IN THE CONDITIONS OF EUROPEAN INTEGRATION.....23

HISTORICAL SCIENCES

<i>Malaschuk O.S.</i> FORMATION AND ESTABLISHMENT OF SCIENTIFIC BASIS OF AMPELOGRAPHIC PRACTICE IN RUSSIAN EMPIRE (IXX – BEGINNING OF XX CENTURIES).....30

JURIDICAL SCIENCES

<i>Ahmed Rae Al-Mhanawi, Hayder Makki Sabti</i> THE PROBLEMS FACING COMPUTER TEACHING IN DIWANIYAH GOVERNORATE AND FIND APPROPRIATE SOLUTIONS.....35

PEDAGOGICAL SCIENCES

<i>Mansurova E.R., Sergeeva I.N., Ahatova A.H.</i> PRACTICE-ORIENTED TRAINING IN THE ANALYSIS OF THE SCHOOL.....42
--

PHILOLOGICAL SCIENCES

<i>Kost S.S.</i> NATION-BUILDING ESSENCE OF KAREL ZAP'S HISTORICAL WORKS46
--

PHILOSOPHICAL SCIENCES

<i>Tetior A.</i> RELEVANCE OF MAN'S NEGENTROPIC THINKING AND ACTIVITY51	<i>Sharipov M.R.</i> ABOUT HIERARCHY AND LAYER OF THE WORLD.....56
---	---

POLITICAL SCIENCES

<i>Yarovoi T.</i> ANALYSIS OF WAYS TO OPTIMIZE APPROACHES TO ENSURING PUBLIC AND NATIONAL SECURITY 73

HISTORICAL SCIENCES

FORMATION AND ESTABLISHMENT OF SCIENTIFIC BASIS OF AMPELOGRAPHIC PRACTICE IN RUSSIAN EMPIRE (IXX – BEGINNING OF XX CENTURIES)

Malaschuk O.S.

PhD, Associate Professor,

Odessa State Agrarian University;

candidate for a doctor's degree of the National Agricultural

Library NAAS Ukraine

(Ukraine, Odessa)

ABSTRACT

The article analyzes foreign and domestic experience of ampelography, general trends in the process of its formation were revealed. Decisive influence of these vineyards on the theoretical and methodological foundations of ampelographic researches was proved. Particularly in the Russian Empire - it is collection of the Nikitsky Botanical Garden Magarach ampelographic collection. Work of the International Ampelographic Commission was researched. It was aimed to improvement thr technique of ampelographic researches and coordination of these activities worldwide. The historiography of the ampelography works of the Russian Empire of the IX - beginning of the 20th century was studied.

Keywords: ampelography, viticulture, grape varieties, ampelography collection, research of sort's variety.

Formulation of the problem. For the correct characterization of varieties of grapes from a scientific and industrial point of view it is necessary to use methods of ampelographic description, which is based on the objective assessment of individual features and properties, taking into account their variability under the conditions of the environment. In this connection, the interest of scientists in the history of ampelography is growing.

Analysis of recent research and publications. Study of the historical development of ampelographic research has not been the subject of a special historical study by Ukrainian scholars. Along with this there is a number of scientific works of Moldovan and Russian scientists, in which some aspects of this subject were considered. Among them, works made by Naumova L.G. [16], Perstneva N.D. [19], Pelyah M.A. [18]. Therefore, today remains relevant and requires further generalization analysis of developments in this area.

Statement of objective. The purpose of the work is historiographically summarization of ampelographic works of domestic and foreign scholars to study the formation of ampelography as a science and its further development.

Presentation of main material. The study and description of grape varieties was begun at the beginning of our era. In the works of the ancient Greek and Roman scholars (Theophrastus - 375-297 BC, Virgil - 191-70 BC, Columella - 1 century AD, Pliny - 23-70 AD, Cassian Bass - 10th century AD) mentioned the names of a large number of grape varieties. These first jobs were usually limited only by signing the list of varieties, and in some cases their short characteristics.

Beginning from the XV century, a series of works of this nature by various authors appears. These works include P. Kreschencio (1471), Agostino Gallo (1550), Olivier de Serra (1600) and others [19, p.484].

The concept of "ampelography" (from the Greek "ampelos" - grapes and "grapho" - write, that is, the description of the grape) was first introduced in 1661 by

Polish scientist F.Y. Sax, who wrote a book under this name. It was published in Leipzig in Latin, a meaningful study of grapes at that time. Description of grape vines became the content of ampelography, more precisely grape varieties, species and genera and the entire botanical family of grapes. The need for ampelography works of that time was primarily due to the fact that under the well-known large number of varieties there was an extremely high confusion in their names.

An important role in the development of ampelography studies was played by the established vineyard collections (a place where grape sorts were planted, collected from different parts of the globe) in many countries of the world. The founder of the collection of grape varieties is the French abbot Rosier, who in memorandum to the Marseilles Academy in 1780 substantiated and outlined the plan for creating a complete world collection for comparing grape varieties and assigning them appropriate names. After him, almost in all the countries of the world were laid collections. Especially many of them were created in the 19th century. On the created collections work on the study of varieties was carried out. Results of this work were published in the form of catalogs of grape varieties and books on ampelography. The most valuable description of the collections was made by Odar (1841), Stolz (1852), Mendol (1868), Rovazend (1877), Oberlene (1886) and others. However, creation of collections, has not yet solved the tasks. It was necessary to develop the scientific basis for conducting ampelography works in these collections [16, p.52].

The scientific foundations of modern ampelography were laid by Clement (1806) in an essay entitled "The Experience of Exploring the Varieties of Grapes Growing in Andalusia." This work allowed to combine the object and purpose of research into a single whole. Since then, ampelographers from all over the world began to work under one clear scheme for everyone.

The need to organize and systematize ampelographic works in the laid-off collections led to the creation of International Ampelographic Commission in 1878. It consisted of representatives from France, Italy, Russia, Austria, Prussia, Hungary, Switzerland, Greece and others. The main task of this commission was to improve the methodology of ampelographic research and coordinate these works in different countries. As a result of the work of the commission, the edition "Dictionary of Grapes of Grapes" (1876) was published. It included the names of 228 varieties and 1500 synonyms, an instruction for the description of varieties and "International Form Description of Varieties" were also developed.

Commission published reports on the work on the publication of the "Ampelographic Bulletin", and also provided suggestions on the organization and methods of ampelographic research for consideration at the International congresses on viticulture and winemaking. The International Ampelography Commission played an important role not only in the development of a uniform method of ampelography research, but also in the further development of collections of grape varieties as the basis for these works. It was recognized that it is expedient to continue to create collections of grape varieties at the place of their cultivation [19, p. 487].

The ampelographers of the leading wine-growing countries of the world have done extensive work on the description and study of grape varieties. The result of this work was the publication of a number of catalogs of grape varieties and ampelographies. The results of the work of the ampelographers from France and other countries were summarized in the major work *Ampelographie* (*Ampelographie – Traite general de viticulture*), prepared by the French ampelographers Vial and Vermorel (1901-1910). This work, unlike the previous ones, which had a district significance, can be called universal, since it was compiled on the basis of the description of varieties, made according to a single pre-compiled method. It used old and new materials from different collections. More than 30 correspondents who sent their materials from various countries, including from the side of the Russian Empire - a consultant to the Ministry of Agriculture of the Republic of Tajirov V.E., the representative of the overseas nurseries Tivebo and the vineyard of the specialized agency Barberon, participated in its creation.

The ampelography of Vial and Vermorell consists of the total first volume and five separate volumes that contain a description of the 500 varieties of grapes based on materials obtained from different regions of their culture, as well as the seventh volume, which contains more than 25000 names and synonyms of grape varieties. In addition, their bibliography is provided. Unfortunately, it does not have sufficiently complete data on the agrobiological and economic-technological characteristics of the described varieties.

In this work there are described 9 sorts, cultivated on the territory of the Russian Empire, in the additional volume there is brief information about 740 sort varieties in Russia. It is impossible not to mention the participation in this work Tairov V.E. In the 3rd and 5th

volumes of Tairov gave detailed descriptions (with appendixes) of grape varieties: Yerevan-Khardzhik and Kakheti-Mtsvani and Saperavi are presented, and in VII volume - a brief description of all important varieties that were cultivated in all wine-growing regions of the former Russian Empire is described [18, p. 28].

In the Russian Empire, first description of grape varieties with some elements of ampelographic analysis is given in the work of Academician Pallas (1802), "Description of grape gardens in the Astrakhan province", in which the author described 16 most common grape varieties with some elements of the ampelographic analysis. In addition, he laid the first Russian collection of grape varieties in the Sudak School of Wine. Pallas first drew attention to sorting the grapes and gave valuable advice on the correct cultivation of this crop. He owns the first experiment of acclimatization of Tokai Vines in Sudak. He proposed to make the best varieties of grapes from Italy and France for liqueur south sea-side wines.

One of the most significant contributions to the formation of ampelographic research of the Russian Empire was made by (created in 1812 in Yalta) Nikitsky Botanical Garden, where a collection of vineyards was laid. To do this in 1813, Steven C.C. (the first director of the Nikitsky garden) selected 16 varieties of the best local vines in the Sudak School, carried them to the Nikitsky Garden and planted a small vineyard. In the report in 1815 he noted that a small amount of grape was planted, only about tithing floor, and only such varieties, which were located in Sudak grape garden. Steven first set the task for the Nikitsky garden to collect and test domestic and foreign grape varieties and study their suitability for winemaking or fresh consumption. In its geographical position the Nikitsky garden could be engaged in breeding not only table grape but also wine (technical) grapes [1].

The wine Collection of the Nikitsky Garden gradually expanded, as there were constantly searching for new varieties. In 1821 it numbered 4310 shrubs of grapes of 30 varieties; in addition to the local Crimean, there were the best European varieties of the northern regions (Rhine, Burgundy, Hungarian): "Claretzan pink - 800 bushes, Rhine white - 600, French red - 800, Red from Corfu - 800, White Hungarian - 300" and others. Steven determined that, although in the time of Pallas, many native varieties were considered good, they were still significantly lower than foreign ones [15].

In 1824, C. Steven received grape buns from Lubensky District and laid down in the Nikitsky garden "a school for further distribution in Russia". The vineyard was also replenished with vines from Kizlyar (Kakhetian White, Kakhetian Black, Kishmish Long) and Astrakhan (Thick-skinned, Ugrian Black, Safiyany), and in 1825 Steven said that very necessary variety of grapes was started. Varieties of it are collected in the Crimea, on the Don and from Georgia, which only could be obtained "and that in the Garden there are up to 200 varieties of grapes".

Thus, the first scientific ampelographic collection, the most complete in the Russian Empire, was founded. From the report of C.C. Steven for 1826 it is evident that it was brought to a certain system: collection of

various varieties of grapes is about 300 genera, a variety of trees is planted on one shrub to verify the name and a better comparison of the genera among themselves [9, p. 160].

At the end of the XVIII century according to the scientist-naturalist K.I. Gablitsa, on the Crimean peninsula, 15 varieties of grapes grew. C.C. Steven named 25 varieties, P.S. Pallas - 39. And already in the middle of the XIX century ampelographic collection of the Nikitsky garden and the Magaratsky school of winemaking exceeded 400 varieties, making the Russian Empire, which had not previously had industrial winemaking, ranked fifth in the world of grape production [20].

Significant event in the Nikitsky garden was the allocation in October 1828 the plots for breeding exemplary "state vineyard" and creation of an indicative winery institution (Magarach Winemaking Establishment) and schools in it. The second director of the Nikitsky garden N.A. Gartwis took up the incarnation of this plan in the life. [17].

The first laying of experimental vineyards in Magarach took place in the spring of 1829: two quarters of the 4000 bushes of the main Burgundian Pinot Fran and the ensemble of the best Bordeaux varieties - Pti Verdou, Grove Verdeo, Malbec and Merlot - were planted.

Gartwis laid two vineyards: collection and experimental plot of the best French varieties provided by Vorontsov. The first crop from the plantations of the Magaratsky vineyard was obtained in 1832. In the following, for eight years, from the assortment of the Nikitsky collection in Magarach, promising varieties of grapes were planted annually by half the size of one row.

A special pride become creation, on the basis of a long-term search, of a live collection of varieties of grapevines from various states and continents (ampelographic collection). These vineyards have laid the beginning to extensive research and production landings and systematic research work. In the Magaratsky ampelographic collection, in the Magaratsky production vineyards and in the Magaratsky wine cellar, best varieties of grapes are subject to extensive study and selection. As a result, "Magarach" begins to make a significant contribution to the dissemination of knowledge about valuable domestic and foreign grape varieties in the southern regions of the Russian Empire.

Research, experimental and demonstrative character from the very first days of existence was given to "Magarach institution", as it was called then. At its founding, the main tasks were addressed: the reproduction and distribution of the best varieties of grapes, selected from collections and the creation of a model wine-growing economy, in which the search for the best methods of making wine were made [13]. Thus, the center of scientific work on viticulture and winemaking was transferred to "Magarach" and the ampelographic collection for some time (until 1870) continued to remain in the Nikitsky garden.

The ampelographic collection has become the source of planting material for the creation of daughter collections and contributed to the enrichment of the country's vineyards with valuable varieties. In 1860 in

this original museum of vines there were more than 270 varieties. From 1829 to 1852, "Magarach" distributed more than a million stems, which resulted in the establishment of more than 30 state grape seedlings in the south of Ukraine and Russia, Northern Caucasus, Transcaucasus and other regions [21, p.16-17].

Descriptions of local varieties of grapes began to appear in separate publications, as well as in periodicals or chapters in the works on viticulture and winemaking. The list of major varieties of grapes grown in the wine-growing regions of Russia (Sudak, Astrakhan, Kizlyarsky) was filed in the article "On the Wine Industry of Russia, published in the magazine "Internal Affairs" in 1830.

In 1832 P.I. Kepen published the work "About winemaking and viticulture in Russia", in which 196 sorts of grapes were cultivated, which were cultivated in Russia. The work was written in literary sources, with the repetition of all mistakes made by past authors, in the names and definitions of varieties. Therefore, the value of this work is small [19, p. 488].

More valuable is work of A. Bode and F. Kolenati. In periodicals certain articles of A. Bode (who was director of the Sudak Wine School from 1824 to 1828) were published in winemaking, usually in the Crimea. It compiled the first manual on viticulture and winemaking in the Russian Empire entitled "Guide to vineyard and winemaking in the southern provinces of Russia" (1833) [10], which was published in the form of an appendix to the Works of the Imperial Free Economic Society, in which 25 grapevine and 7 table grape varieties for Crimea are described on various grounds.

The original ampelography work was the work of Friedrich Kolenati (1846), which included a study on the origin of cultural grapes, its classification and description of local varieties of the Transcaucasia. Kolenati described and divided into groups different characteristics of 48 Georgian and Azeri varieties. But his classification was not used in the future, since it was very cumbersome and based only on morphological features. Nevertheless, this was the first original ampelographic study of local poorly-studied varieties [19, p. 489].

Gartwis N.A. in 1855 gave the first brief description of the Maharat collection of ampelographies from the economic and technological points of view and described the 79 best vine varieties in the "Review of the actions of the Imperial Nikitsky Garden and the Magarachsky School of Wine", which was issued by the Department of Agriculture [11].

The second part of the nineteenth century was characterized by a marked decline in the conduct of ampelography studies. During this period of time none of ampelographic research was published in Russian special literature, although works on the study of grape varieties continued during this period, especially in the Nikitsky Botanical Garden and at the Magarach Collection of Grapes.

In 1880 A.I. Bazarov together with N.Y. Orlenko, using the classification of the International Ampelography Commission, conducted the first description of the local Crimean grape varieties. Only 300 varieties were detected by scientists; others, in their opinion,

were duplicates. Due to the need to prevent the disease on the phylloxera and to sort the varieties, the Garden sortiment was transferred to Magarach. In 1882 A.I. Bazarov noted that it was founded in 1860. The Nikitsky assortment, as he mentioned, contained 76 black wine, 89 white wine, twenty colored wine, 47 black table, 49 white table and twenty colored table, a total of 301 varieties" [2, p. 645]. The assortment lasted for two decades, after which it was destroyed because of the threat of phylloxera disease. In 1870 according to the system of Odar (in regions), the Magarach assortment was founded. According to the scientist, in 1889 it contained 490 varieties of grapes.

Only in the last decade of the nineteenth century, the interest in the culture of grapes and the study of varieties, in particular, has increased significantly. This was due to the fact that viticulture and winemaking began to play a significant role in the country's economy. In addition, poor awareness of the techniques of culture of grapes, which did not meet the conditions of a particular region, the selection of varieties, the unsystematic import of foreign varieties, the harmful effects of fungal diseases and phylloxera introduced into Russia, caused the need for a deep and systematic study of the culture and varietal fund of the country.

A peculiar encyclopedia of viticulture and winemaking is the six-volume work of M. Ballas "Winemaking in Russia" (1895-1903), which included extensive information on the grape variety of the Russian Empire [2-8].

An important role in the development of ampelography was played by the "Herald of Winemaking" (from 1892) and "Collection of Constructions on Viticulture and Wine Industry in the Caucasus" (from 1894 to 1901). In addition, the Caucasian Phylloxera Committee issues two editions "Materials for ampelography of the Caucasus" and "Transcaucasian sorts of Grapes" in which 33 varieties of grapes were described in detail.

At the beginning of the XX century, ampelographic research in the Russian Empire significantly activated. This was facilitated by the publication of the work "Ampelography of Crimea" by academician S.I. Korzhinsky, which was published twice, for the first time in 1904 and the second time in the "Works of the Bureau of Applied Botany" in 1910, with notes and additions to the editorial board. Korzhinsky was the first who: 1) defined the task of ampelography as a science and identified the main ways of development of this science; 2) expressed the opinion on the study and classification of varieties according to genetic features, that is, the relationship between cultural and wild grapes. He found the theoretical and practical significance of the description of all the varieties that are in the culture of grapes, presented the correct method of describing and establishing a single definite terminology, which became a practice of further research. In his work, 112 varieties were described, including 20 aboriginal and reduced factor (key), which allowed to be guided in the description of the assortment. The scientific work of Academician Korzhinsky gave an impetus to the description and study of local, aboriginal varieties of grapes of various regions in Russian Empire.

After publication of "Ampelography" by Korzhinsky, a number of significant ampelographic works, complemented by Korzhinsky, appeared. These include the work of Pacezsky, who published the results of research on wild grapes in the Dnieper and Transnistria in the article "Wild Kherson Grapes" (1912). In 1907-1913 A.M. Frolov-Bagreev conducted an analytical study of mash of more than 200 Magarach varieties and received valuable scientific and practical material [12]. Visniovsky in the work "Ampelographic description of the main varieties of grapes of the Yerevan province" (1911) described in detail 30 varieties cultivated in Armenia. Prostoserdov published work "Viticulture and winemaking of Don region" (1915) and made there an analysis of the origin of Don grapes and described Don varieties.

Study of the sortiment of grapes in Bessarabia were made by scholar philosopher and zoologist, a public figure of the second half of the nineteenth and early twentieth centuries Stuart O.F., who was an active member of the Russian Society of Horticulture and a member of the board of the Chisinau branch of this society for many years. He was the initiator of the publishing house and editor of the "Viticulture of the Bender County of Bessarabia Province" (1915), "The Works of the Commission for the Study of Direct Producers of Grapes selected by the Meeting of the Representatives of the Viticulture and Wine Committee of the Province of Bessarabia, established by the Bessarabian Zemstvo Council of July 9, 1914" (1916). Stuart O.F. published an article "On the study of the ampelography of Bessarabia", which was published in "Works of the Congress of winegrowers and winemakers in Chisinau" (1908). In this work, the author describes a variety of grapes that has developed in Bessarabia, makes attempts to sort out local varieties and suggests the laying of varietal collections of grapes.

Stuart considered it necessary to draw up a description of the most common (or which may be recommended) Bessarabian grape varieties. To this end, he proposed to select a commission that could directly start the case - a fee for a specific program of materials and the description of grape varieties. However, any information about the composition and work of such a commission is not known.

There were three variety collections in the territory of Bessarabia in the pre-revolutionary period. This is primarily a collection laid in 1832 by K.I. Tardan near Ackerman. Here 245 sorts of grapes were planted. They were obtained from Magarach and 85 local varieties. In the Bessarabian School of Winery (Chisinau), organized in 1849, on the initiative of the school's director, a scientist biologist A. Denking, a collection was established. It was a so-called grape seedling of 200 varieties of grapes, also obtained from Magarach. And the third collection, "french", was laid in Chisinau at the Kostyuzhensky Experimental Garden in 1909-1910. Grape varieties were mainly imported directly from France (from the famous grocery store Richter in Montpellier). The vine produced in these collections was distributed among the population [18, p.21].

Conclusions. Consequently, formation of scientific principles of ampelography is based on the works

of scientists of the leading wine-growing countries of the world: Saks, Rosie, Clement, Vial and others. The result of their work was publication of a number of grape catalogs' varieties and ampelographies. The fundamental work in the development of ampelography as a science is "Ampelography" by Vial and Vermorel (1901-1910) and "Ampelography of the Crimea" by Academician S.I. Korzhinsky (1904). Among the well-known winegrowing scientists who were actively engaged in ampelographic research in the Russian Empire from the XIX to the beginning of the XX century were Pallas, Kepen, Bode, Kolenati, Ballas, Gartwis, Tayyrov, Korzhinsky, Frolov-Bagreev, Visniovsky, Pachesky, Prostoserdov and others. An important role in formation of theoretical and methodological foundations of ampelography was played by collections of buried vineyards, among which, in the territory of the Russian Empire, is the Magaratsky ampelographic collection.

References

1. Avidzba A.M. (2009), Innovative developments of the National Institute of Grape and Wine Magarach, *Vinograd*, 10, 57-59.
2. Bazarov A.I. (1892), Ampelographic description of several grape sorts of the Magarach variety of the Imperial Nikitsky Garden, *Herald of Wine*, 10, 581-593; 11, 643-648.
3. Ballas M. K. (1895), *Winemaking in Russia: historical and statistical essay. P. I. Crimea, steppe part of the Taurian province, Don and Astrakhan*. St. Petersburg: Malva.
4. Ballas M. K. (1896), *Winemaking in Russia: historical and statistical essay. P. II. Western Transcaucasus*, St. Petersburg: Malva.
5. Ballas M. K. (1897), *Winemaking in Russia: historical and statistical essay. P.III. Eastern Transcaucasia*, St. Petersburg: Malva.
6. Ballas M. K. (1898), *Winemaking in Russia: historical and statistical essay. P. IV. Ciscaucasia*, St. Petersburg: Malva.
7. Ballas M. K. (1899), *Winemaking in Russia: historical and statistical essay. P. V. Southern Russia (Bessarabia, Kherson, Podolsk and Ekaterinoslav provinces)*, St. Petersburg: Malva.
8. Ballas M. K. (1903), *Winemaking in Russia: historical and statistical essay. P. VI. Asian Russia (Turkestan)*, St. Petersburg: Malva.
9. Bernar N.G. (2014), Hystoryon winemaking as science: from Nikitsky Botanical Garden to institute "Magarach", *Blacksea chronicle*, 10, 158-168
10. Bode A. A. (1833), *Guide to Grape Horticulture and Winemaking in the Southern Gubernias of Russia*, St. Petersburg: Proceedings of the Imperial Free Economic Society.
11. Gartvis N.A. (1855), *An overview of the actions of the Imperial Nikitsky Garden and the Magarach School of Winemaking*, St. Petersburg: Department of Agriculture.
12. Frolov-Bagreev A.M. (1909), Materials for studying the grape variety of the Imperial Nikitsky Garden. *Notes of the Imperial Nikitsky Garden*, 3, 79-107.
13. *Instruction of the Magarach School of Winemaking (on the Southern Coast of the Crimea)*. St. Petersburg: Ministry of State Property, (1849).
14. Korzhinsky S.I. (1904), *Ampelography of the Crimea: description of grape varieties bred in the Crimea*. St. Petersburg: Main department Udelov.
15. Maleeva O. F. (1931), Nikitsky garden during Steven (1812-24). An Essay on the History of the State Nikitsky Botanical Garden. *Statements Nikitsky experienced botanic garden*, 17, 3-32.
16. Naumova L.G. (2004), *Ampelographic collections: history and modernity. Adaptive management of viticulture (breeding, nursery, technology of cultivation, winemaking)*, Scientific materials. Conference, Novochoerkassk, 49-57.
17. Essay on the activity of "Magarach" in 40 years (1917-1957). Bulletin of scientific and technical information of VNIIVV "Magarach" (1958), 3-4, 7-111.
18. Peliah M.A. (1970), *History of viticulture and winemaking in Moldova*. Chisinau: Kartya Moldovenyiaske.
19. Perstnev N.D. (2001) *Viticulture*. Chisinau.
20. Potehin V. Y. (1976), Nikitsky Botanical Garden in the development of agriculture in the south of Russia (1812-1861): author's abstract. dis ... PhD in history, Institute of History of the USSR, Moscow.
21. Verbenko G.V. (1938), *Brief results of works of Nikitsky botanical gardennamed by Molotov (1812-1938 biennium)*, Yalta.