The article briefly describes the life path, as well as the history of the formation of the horizons of the famous Russian scientist-mechanic, professor, Minister of Finance of the Russian Empire Ivan Alekseevich Vyshnegradsky.

By 1862, Ivan Alekseevich had already visited several European countries and received the title of professor. From the same year, Vyshnegradsky’s activity began at the St. Petersburg Practical Technological Institute, in which he lectured on mechanical theory of heat and the theory of steam engines, was appointed a member of the study committee. On his initiative, the Department of Metal and Wood Technology was restored. In 1871, a mechanical laboratory was founded at the institute for scientific research on the resistance of building materials and for hydraulics experiments. In 1875, Vyshnegradsky was appointed director of the institute, continuing his teaching activities. Among the machines he designed: an automatic press for the manufacture of prismatic powder, lifting machines, a press for testing materials, a mechanical material handler (for a river port), etc.

Features of economic policy of I. A. Vyshnegradsky consisted in the desire to increase the gold reserve of the empire and increase Russia’s influence on the international economy and politics. For him, the most important and only task was the visible improvement of Russian finance in a short time. Favorable conditions were artificially created for heavy industry, which became a priority among the interests of the Ministry of Finance, often to the detriment of the interests of all agriculture. Under Vyshnegradsky, the export of Russian bread more than doubled. Stimulated the export of not only surplus bread, but also part of the necessary stocks of peasants. As a minister, he led the redemption of unprofitable railways, undertook control and financial (1889-1890) and tariff (1889) reforms in the railway sector. Conducted the conversion of state (external and internal) loans, which helped to reduce payments on public debt, lower interest, streamline public debt.

**Keywords:** gold reserve, mechanics, politics, agriculture, heavy industry, economy, export.

**Introduction.** Ivan Alekseevich Vyshnegradsky (1831-1895) – an outstanding scientist, was engaged in teaching activities at the Artillery Academy and the Technological Institute (1850-1870), served as director of the Institute of Technology (1875-1878), Full Privy Councilor (1890), Honorary Member of the St. Petersburg Academy of Sciences (1888), Manager of the Ministry of Finance (1888-1892).

He studied at the Tver Theological Seminary (1843-1845). He graduated from the Physics and Mathematics Department of the Main Pedagogical Institute in St. Petersburg (1851 - with a silver medal; for excellent abilities and success in exams, he received the title of senior teacher). Master of Mathematical Sciences (1854 - defended a dissertation at Petersburg University on the subject “On the motion of a system of material points determined by complete differential equations”).

In 1860-1862 he was abroad to prepare for a professorship, studied the state of mechanical engineering at industrial enterprises and in higher technical educational institutions in Germany, France, Belgium and the UK, and attended Redtenbacher’s lectures on machine design at the Higher Technical School in Karlsruhe.

**General problem setting.** Taking into account the achievements and merits of the mechanic scientist, professor and Minister of Finance of the Russian Empire, Ivan Vyshnegradsky, a more detailed study of the life path and the history of the formation of his horizons is advisable.

**Analysis of recent research and publications.** The biography of I. A. Vyshnegradsky is studied by his scientist, pedagogical and political activity: V. N. Kuznetsova; I.P. Lyashchenko; V. T. Sudeikina; P.P. Migulin; V.V. Witchensky; M.P. Kashkarov; N. D. Shidlova et al.

**The purpose and objectives of the research.** To trace the history of the formation of the interests and
skills of the scientist I. A. Vyshnegradsky with the aim of finding out what exactly had the greatest influence on the scientist's horizons and his political activities.

**Presentation of the basic research material.** In 1862, Vyshnegradsky, returning from a business trip abroad, began to take practical mechanics courses at the Mikhailovsky Artillery Academy and at the same time was approved as a professor of this subject. From the same year, Vyshnegradsky began his work at the St. Petersburg Practical Technological Institute, in which he began to give lectures on the mechanical theory of heat and the theory of the design of steam engines and was appointed a member of the study committee. At the suggestion of Ivan Alekseevich, the department of metal and wood technology was restored. In 1871, a mechanical laboratory was founded at the institute for scientific research on the resistance of building materials and for experiments in hydraulics. In 1875, Vyshnegradsky was appointed director of the institute, retaining his professorship.

Ivan Alekseevich Vyshnegradsky founded the Russian scientific school of mechanical engineers. He introduced the teaching of the theoretical foundations of mechanical engineering course, taught courses in applied mechanics, thermodynamics, elasticity theory, lifting machines, lathes, steam engines, etc. He introduced course and diploma design for students. The author of the manual "Elementary Mechanics", for many years was considered the best in Russia in this field. Among the students of I. A. Vyshnegradsky: V. L. Kirpichov (organizer of technical education, first rector of the Kharkov Institute of Technology), N. P. Petrov (creator of the mathematical theory of lubrication), A. P. Borodin (inventor in the field of steam locomotive construction).

I.A. Vyshnegradsky was rightfully considered an outstanding design engineer of his time. Among the machines he designed: an automatic press for the manufacture of prismatic powder, lifting machines, a press for testing materials, a mechanical material handler (for a river port), and others. Vyshnegradsky participated in the construction of the Okhta gunpowder factory, the mechanical workshops of the St. Petersburg arsenal, cartridge, powder and arms factories. The scientist is one of the founders of the theory of automatic regulation. In the work "On direct-acting regulators" (1877), he presented a method for calculating regulators of this type. He formulated the condition for the stability of the regulatory system (Vyshnegradsky criterion) [6].

In the 1880s, Vyshnegradsky was a close associate of the extremely influential conservative publicist, editor of Moscow News, Mikhail Katkov (he published articles on financial issues in his newspaper). It was at the suggestion of Katkov in 1884 that Ivan Alekseevich first became a member of the Council under the Minister of Education, where he participated in the development of a conservative university charter adopted in 1884, and also became the main author of the industrial education project. In 1886, the professor was appointed a member of the Council of State and the Finance Committee.

Using the patronage of the influential Prince Vladimir Meshchersky (close to Alexander III), as well as the support of Katkov, who in 1885-1887 launched an active campaign for the resignation of Minister Nikolai Bunge, from January 1, 1887, Vyshnegradsky took the post of Minister of Finance [5].

I.A. Vyshnegradsky was prepared for this post, but of a completely different type than Bunge. He was also a learned professor, but not a theoretician-economist, but a scientist technologist and practitioner, undoubtedly very gifted, who showed his talents both in some inventions of a military-technical nature and in well-established academic courses. His experience at the artillery academy gave him an important advantage for the Minister of Finance: he was well acquainted with the military economy and the military budget, which was an important component of the general state budget.

Thus, Vyshnegradsky took the post of Minister of Finance as a trained and knowledgeable person. Ivan Alekseevich was able to quickly create his own financial condition thanks to his technical inventions, then he very successfully participated in various exchange speculations and exchange affairs, so this area was also familiar to him [3].

In his administration of the Ministry of Finance, and especially in financial and economic policy, Vyshnegradsky showed the complete absence of any broad views and foresight. For him, the most important and only task was the visible improvement of Russian finance in the near future. In his financial policy, he set himself the same goal that Reiter had once set himself: to restore the rate of the credit ruble.

It should be noted that the course of the Ministry of Finance with I. A. Vyshnegradsky has changed quite sharply. The main task of the ministry at Vyshnegradsky was the accumulation of large cash reserves at the treasury of the state treasury and the wide participation with the help of these reserves in international exchange operations in order to put pressure on the international economy and thus raise the ruble exchange rate.

Under Ivan Alekseevich, the rights of factory inspectors established under Minister Bunge are extremely reduced through circular explanations, which very soon affected the composition of the factory inspection. This is due to the fact that in such conditions the most dedicated and independent representatives of this inspection, seeing the impossibility to act in accordance with their conscience and even in accordance with the law, resign. Thus, the institution of factory inspection is changing for the worse [7].

Due to a number of protection measures, the Russian heavy industry - the careful attitude of the Ministry of Finance to the issue of the direction of the railway lines that are advantageous for the domestic manufacturing industry and about such railway tariffs that would strictly correspond to the interests of the heavy industry, the most favorable conditions appear at
this time. Favorable conditions are artificially created for heavy industry, which has become a priority among the interests of the Ministry of Finance, often to the detriment of the interests of other sectors of the population and especially contrary to the interests of all agriculture, whose condition was especially negatively affected by the protection customs tariff of 1891, as a result of which the main for agriculture materials and agricultural machinery [9].

Under Vyshnegradsky, the export of Russian bread more than doubled. This is due to his desire to solve the problems of industrialization and financial stabilization through agriculture. A symbol of this approach was the winged phrase attributed to him: “we are undernourished, but we will take it out!” His colleague in the Ministry of Finance, P. Kh. Schwanebach, as follows explains the origin of the phrase: “I can’t forget the exclamation that broke out in the spring of 1891, when, with a looming crop failure, he began to fear the ebb of gold: “We’ll not eat it ourselves, but we’ll take it out.” However, he did not pay enough attention to the agrarian question, which contributed to the aggravation of the situation in the village and the famine of 1891-1892, which as a result undermined many of Vyshnegradsky’s undertakings. It should be noted that as a minister, he lacked a broad outlook, he behaved mainly as a narrow financier. However, his resignation from the ministerial post in 1892 was caused not at all by incompetence, but by serious illness and intrigue, primarily from his immediate successor, S. Yu. Witte [2].

I.A. Vyshnegradsky devoted considerable attention to the creation of a reserve of gold cash, which allowed his successor S. Yu. Witte to carry out a monetary reform (introduce a “golden ruble”). He initiated an increase in indirect taxes: alcohol excise tax was increased, oil and match excise taxes were introduced, additional excise tax on refined sugar was increased, stamp duty was increased (the increase in indirect taxes: alcohol excise tax was increased, the increase in indirect taxes: alcohol excise tax was increased, the increase in indirect taxes: alcohol excise tax was increased). This is due to his desire to solve the agrarian question, which contributed to the aggravation of the situation in the village and the famine of 1891-1892, which as a result undermined many of Vyshnegradsky’s undertakings. It should be noted that as a minister, he lacked a broad outlook, he behaved mainly as a narrow financier. However, his resignation from the ministerial post in 1892 was caused not at all by incompetence, but by serious illness and intrigue, primarily from his immediate successor, S. Yu. Witte [2].

In April 1892, Vyshnegradsky, for health reasons, resigned as minister, remaining a member of the Council of State. Comrade Minister—F. G. Turner was appointed Manager of the Ministry of Finance. Turner ran the ministry until the appointment of S. Yu. Witte on August 30 (September 11), 1892. Many of the economic events initiated by Vyshnegradsky were continued by S. Yu. Witte, who replaced him as Minister of Finance. Vyshnegradsky was buried in the Isidorov Church of the Alexander Nevsky Lavra in St. Petersburg, the grave was not preserved.

**Conclusion.** In conclusion, it should be noted that Ivan Alekseevich Vyshnegradsky was an outstanding scientist and political figure of his time. Scientific, pedagogical experience, as well as the experience of speculation on the stock exchange made it possible to obtain certain knowledge and skills that in the future allowed him to take the post of Minister of Finance as an experienced and trained person for such a position. It should be noted that despite the broad outlook and the abundance of experience in various fields, Vyshnegradsky’s activity as Minister of Finance was very narrow and limited. Despite the fact that Ivan Alekseevich lacked political foresight, his economic policy was based on the desire to strengthen the Russian empire in the international arena.

**Reference**

10. Sudejkin V.T. Zamechatel’ny’ e pokha v istorii russkich financov. SPb., 1895. S. 42-44.

Аносова В. С. Життєвий шлях і формування наукового та політичного світогляду вченого-механіка, професора, міністра фінансів Російської імперії І. О. Вишнєградського

У статті коротко описані життєвий шлях, а також історія формування горизонтів відомого російського вченого-механіка, професора, міністра фінансів Російської імперії Івана Олексійовича Вишнєградського.

До 1862 р. Іван Олексійович вже побував у кількох європейських країнах і отримав титул професора. З цього ж року діяльність Вишнєградського розпочалася в Пе-
тербугському практичному технологічному інституті, де він читав лекції з механічної теорії тепла та теорії парних машин, призначеній начальника компетентності. За його ініціативою було відновлено кафедру технології металу та деревини. У 1871 р. В інституті була закріплена механічна лабораторія для наукових досліджень та проведення експериментів з гідродинамікою. У 1875 році Вишнеградський був призначений директором інституту, продовжуючи свою високілу діяльність. Серед вікін, які він сконструював: автоматичний прес для виготовлення прикладного порошку, автоматичні машини, прес для випробування матеріалів, перевантажувач механічних матеріалів (для річкового порту) тощо.

Особливості економічної політики І. А. Вишнеградського полягали в правлінні збільшенні золотовалютного запасу імперії та посиленні впливу Росії на міжнародну економіку та політику. Для нього найважливішим і єдним завданням було вимусити покращення російських фінансів за короткий час. Штучно створені справжні умови для важкої промисловості, яка стала пріоритетом серед інтересів Міністерства фінансів, часто на шкоду інтересам усього сільського господарства. За Вишнеградського експорт російського хліба більш ніж подвійся. Спілкувався експорт не лише надднібних хлібів, а й частини необхідних запасів селян. Як міністр він керував викопом збитків залізниць, проводив контрольно-фінансові (1889-1890) та майже (1899) реформи в загальному секторі. Проведено концентрацію державих (зовнішніх і внутрішніх) пошт, що допомогло зменшити виплати за державним боргом, знизити відсотки, впроваджуючи державний борг.

Ключові слова: золотий запас, механіка, політика, сільське господарство, важка промисловість, економіка, експорт.

Аносова В. С. Жизненный путь и формирование научного и политического кругозора ученого-механика, профессора, министра финансов Российской империи И. А. Вишнеградского

В статье кратко описывается жизненный путь, а также история формирования горизонтов известного российского ученого-механика, профессора, министра финансов Российской империи Ивана Алексеевича Вишнеградского.

К 1862 году Иван Алексеевич уже побывал в нескольких европейских странах и получил звание профессора. С того же года деятельность Вишнеградского началась в Санкт-Петербургском практическом технологическом институте, в котором он читал лекции по механической теории тепла и теории паровых двигателей, был назначен членом учебного комитета. По его инициативе была восстановлена кафедра технологии металла и деревя. В 1871 году в институте была создана механическая лаборатория для научных исследований сопротивления строительных материалов и для гидравлических экспериментов. В 1875 году Вишнеградский был назначен директором института, продолжив педагогическую деятельность. Среди машин, которые он разработал: автоматический пресс для изготовления прикладного порошка, подъемные машины, пресс для испытания материалов, механический подъёмник (для речного порта) и т. д.

Особенности экономической политики И. А. Вишнеградского заключались в стремлении увеличить золотой запас империи и усилить влияние России на мировую экономику и политику. Для него самой важной и единственной задачей было заметное улучшение российских финансовых положений в короткие сроки. Искусственно созданные благоприятные условия для тяжелой промышленности, которая стала приоритетом среди интересов Министерства финансов, часто в ущерб интересам всего сельского хозяйства. При Вишнеградском ввоз российского хлеба более чем удвоился. Стимулировал ввоз не только излишка хлеба, но и части необходимых запасов крестьян. В качестве министра он руководил выкупом убыточных железных дорог, провел контрольно-финансовую (1889-1890) и майскую (1899) реформы в железнодорожном секторе. Проведена конвертация государственных (внешних и внутренних) кредитов, что позволило сократить выплаты по государственному долгу, снизить процентные ставки, оставлять государственный долг.

Ключевые слова: золотой запас, механіка, політика, сільське господарство, тяжелая промышленность, економіка, експорт.

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