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## Dynasties of Mining Engineers as a Subject of Historical Research

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### Abstract

The article is devoted to the analysis of the productive activities of the Soimonov Dynasty representatives, Mikhail Fedorovich and Petr Alexandrovich, and their contribution to the development of mining and mining education in Russia in the second half of the 18th century. The Soimonov cousins held important positions in the administration of Russia, at the court of Catherine II; they worked both in the capital and in the provinces, and held senior positions. Mikhail Fedorovich was the organizer and founder of the Mining School, and also its first director (1773–1776 and 1796–1801). Petr Alexandrovich also headed the Mining School (1784–1793) and contributed a great deal to its development and prosperity. It should be noted that the biography of M.F. Soimonov is covered in sufficient detail in the scientific literature, but there is no single detailed scientific publication about P.A. Soimonov. This article fills this gap in the historical record. The article uses original and largely unique archival materials (for example, journals from the personal cabinet of Catherine II), memoir sources and published scientific literature.

**Keywords:** mining, mining school, The Collegium of Mining, mine, pit, gems, mining plants, Siberia, Altai, Catherine II.

### 1. Introduction

The concept of dynasty is well established in historical literature. Usually, it is understood as a succession of monarchs from the same clan ruling a single country or empire. For example, in Russia, the Rurik and Romanov Dynasties are most often mentioned. During the Soviet period, considerable attention was paid to labor dynasties, particularly with regard to mastery of a trade and the transfer of professional skills and accumulated experience to affiliated individuals. While the timeframe of ruling or aristocratic dynasties could total as much as hundreds of years in some cases, the duration of the existence of labor dynasties, as a rule, was limited to several decades; this, however, does not preclude the importance of the contribution labor dynasties' representatives have made to the profession.

The latter consideration fully refers to the dynasties of mining engineers, although the very concept of a “mining engineer” only appeared in Russia on January 1, 1834 – much later than the beginning of the country's mining business, which originates from the well-known decree of Peter I of August 24, 1700 “On the establishment of the order of mining business”.

### 2. Materials and methods

This article, following the traditional direction of historical science and guided by the classical method of historicism, attempts to analyze the contribution of outstanding representatives of the famous noble family of the Soimonov Dynasty to the mining industry in Russia. It focuses on the activities of the cousins Mikhail Fedorovich (1730–1804) and Petr Alexandrovich (1737–1799). Other important members of the Soimonov Dynasty include Vladimir Yuryevich (1772–1825), who gained wide popularity due to his discovery of many deposits of gold and platinum, and Fedor Ivanovich (1692–1780), a famous hydrographer and

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geographer, who became the Governor of Siberia. Among the sources the authors drew upon was a large array of archival documents, including cases concerning the history of the Mining School and materials from the personal account of Catherine II from the collection of the Russian State Historical Archives. Information about the election of P.A. Soymonov as an honorary academician of the Russian Academy of Sciences were discovered in the archives of the Russian Academy of Sciences. Another important source was the Complete Collection of Laws of the Russian Empire, which contains imperial and senate decrees related to the issue under study.

### 3. Discussion

There were several stages in the formation of mining engineers' dynasties. This is reflected in the historical literature, which can be divided into two unequally sized parts. The first segment includes a wide range of publications, from articles and scientific reports to monographs about the lives and activities of certain mining specialists in Russia whose memory has become embedded in the history of the industry. The second segment includes a small number of published works, dating from the early 21st century, by the notable Russian historian E.M. Zablotsky, devoted to the problem of the dynasty of mining engineers (Zablotsky, 2003: 337-340; Zablotsky, 2004: 37-42; Zablotsky, 2014).

We would like to mention that, with the exception of brief reference articles, there is no single scientific publication or encyclopedic entries about P.A. Soimonov, even though the scale of his activities was very impressive. The same cannot be said of publications about the father and son, F.I. and M.F. Soimonov, about whom a number of monographic works have been written (Goldenberg, 1966; Goldenberg, 1973; Goldenberg, 1979; Tomilin-Brazol, 1991). The history of mining in Russia and its current state, as well as the teaching system at the Mining School (Institute) can be explored through the interesting publications of D.A. Shchukina and N.A. Egorenkova (Shchukina, Egorenkova, 2017: 376-384); V.V. Sharok (Sharok, 2018: 33-45); I.V. Voloshinova and A.B. Mokeev (Voloshinova, Mokeev, 2016: 5177-5182); I.V. Voloshinova, O.M. Lenkovets (Voloshinova et al., 2019: 477-482); S.N. Rudnik, I.V. Voloshinova, A.B. Mokeev, A.I. Leiberov (Rudnik et al., 2019: 1546-1553); O.I. Kazanin, K.A. Kolvak, M.L. Rudakov (Kazanin et al., 2018: 1333-1339); N.N. Sazonova and S.I. Sorokin (Sazonova, Sorokin, 2019: 744-747) and P. S. Tsvetkov, (Tsvetkov, 2017: 1-12). The modern state of geomechanics is discussed in a detailed article by V.L. Trushko and A.G. Protosenya (Trushko, Protosenya, 2019: 162-166).

### 4. Results

What unites Mikhail Fedorovich and Petr Alexandrovich Soimonov and provides a basis for analyzing their activities in the field of mining? First of all, the chronological framework of their life and activity, the peak of which was during the reign of Catherine II, when the mining industry in Russia entered a new, higher stage of development. It is noteworthy that, although they were contemporaries and close relatives, there is no single document discussing their protection of each other's interests, although this may well have contributed to the strengthening and development of their careers, given that everything that they achieved was the result of the application of the extensive knowledge and life experience the brothers accumulated.

The second factor is that a significant proportion of their activities are closely related to the history of the Mining School. As mentioned above, Mikhail Fedorovich was its first director, from 1773 to 1776, and also headed it from 1796 to 1801, while Petr Alexandrovich headed it from 1784 to 1793. It is noteworthy that under the directorship of Mikhail Fedorovich, the first students of the Mining School were the students of Moscow University, and Petr Alexandrovich himself was a graduate of this first Russian university.

The school was established as a result of an address given by the Perm miner Ismail Tasimov to the Collegium of Mining, in which he implored them to create a Mining School on the same terms as the cadet corps. On March 10, 1771, this proposal was approved, having been recognized as not only useful, but also necessary (Goldenberg, 1973: 44-45).

However, this proposal could not be implemented in a short time, primarily due to the death on June 29, 1771 of the President of the Collegium of Mining, Count A.E. Musin-Pushkin, who, nevertheless, managed to draw up a draft decree "On mining schools" before his death. Mikhail Fedorovich Soimonov was appointed the new president of this body by personal decree of Catherine II on August 27, 1771. Continuing the work started by his predecessors, he drew up a detailed plan for a specialized educational institution at the Collegium of Mining, which differed greatly from Musin-Pushkin's project for mining schools. One major difference was the new educational institution's structure, in terms of issues such as admissions, the number of cadets, backgrounds, clothing, exams and graduation. Mikhail Fedorovich's plan also included a new section: a list justifying the subjects studied, which were arithmetic, algebra, mineralogy, metallurgy, mechanics, hydraulics, physics, chemistry, and drawing.

When considering the history of the Mining School, it is worth paying attention to the fact that M.F. Soimonov began to prepare for the creation of an educational institution more than a year before Catherine II's decree. In July 1772, he commissioned a mechanic from the Mint, Kh.I. Leshenkol, to make a model of an ore cabinet with working models (bear in mind that the employees of the Mining School took an active part in the development of coinage in Russia) (Bazhin et al., 2019: 201-209). In 1774-1776, the operating models of smelting furnaces were made. M.F. Soimonov wrote in his autobiography, published

in 1887, that furnaces were made for students of chemical classes so that they knew what property and amount of fluxes to use and what degree of fire to keep during the melting process. In mine surveying and mechanical classes ... mining students studied, so that upon graduation and becoming mining officers, being in remote factories and in forest places, where not only mechanics, but also good artisans are difficult to find, they could show the mechanism of machines without error ([Gornyi zhurnal, 1887: 160](#)).

In the school yard, on the initiative of the director and under the leadership of I.M. Renovants, an educational mine was made: mine workings were made in the bulk of the mountain with the placement of “ore veins of those kinds, which are needed, so that students, listening to lectures on mineralogy, having entered these mountains, could more clearly see the properties of those veins with ore bergorts” ([Gornyi zhurnal, 1887: 160](#)).

Along with the resolution of a wide range of problems associated with setting up and operating the Mining School, attention was focused on the admission and accommodation of students. Since the business of schooling had, at that time in Russia, just begun its restoration in the spirit of Peter I’s plans, and also given the high entry requirements for applicants – which included knowledge of a foreign language and the basics of mathematics – no suitable applicants could be found from ordinary schools, so the first students were selected from Moscow University. The approach to student admissions required not only extensive correspondence, but also the personal participation of M.F. Soimonov in the admission process. Ultimately, he managed to select 19 students, whose surnames were first listed by D.I. Sokolov ([Sokolov, 1830: 7-8](#)). In general, the first cohort to study at the school comprised 24 state-supported students, 8 self-supported students and 7 “private” students ([Sokolov, 1830: 74](#)).

In 1776, a significant change was made to the admissions system, as it was considered expedient to admit not only students with appropriate knowledge of foreign languages, mathematics and general education disciplines, but also accommodate those who had not achieved such a high level of preparation. This innovation was driven by the realization that if the school's students were sourced from among the students of Moscow University only, they would soon run out of applicants. It was therefore necessary to look further afield, even at the expense of their own reserves, which fully corresponded to the prospects for developing the Mining School. This change in the admission conditions gave the children of mining officials a chance to enter the school. These young people, whose initial training took place in remote areas, came from what we today would describe as deprived backgrounds: essentially, they would not have received the level education required to meet the high requirements for applicants set out when the school first opened.

Two days before the opening of the school, which took place on June 28, 1774, M.F. Soimonov appointed the first five teachers: A. Martov (arithmetic and geometry), I.M. Renovantsa (mine surveying and mineralogy), A.M. Karamyshev (chemistry), Kh.I. Leshenkol (mechanics), and I. Bogdanov (drawing). Not long after that, I.I. Chemnitzer was appointed to teach French and German ([Gavrilova et al., 2000: 68](#)).

It should be noted that their appointments were made with great care. A native of Saxony and graduate of the Freiberg Mining Academy in 1772, Ivan Mikhailovich Renovants (1744–1798) came to Russia in the 1770s. From 1779 to 1785, he worked with the Kolyvanovo-Voskresensk factories of Altai and did a lot to improve their operations, and in 1779 he was elected a corresponding member of the Academy of Sciences.

Alexander Matveyevich Karamyshev (1744–1791) was no less successful in the scientific field. A student of the Yekaterinburg Mining School, he continued his education at Moscow University, after which, under the guidance of the famous Swedish naturalist Karl Linnaeus, he studied natural sciences at Uppsala University, and he defended his dissertation there in 1766. On his return to Russia, he became the first teacher of chemistry and metallurgy at the Mining School. In 1779 he was elected a corresponding member of the Academy of Sciences, was a corresponding member of the Stockholm Academy of Sciences and the Berlin Society of Natural Science Amateurs ([RBS, 1897: 514-515](#)).

Christian Leshenkol was known as a talented mechanic of the Mint and, quite logically, he became the first teacher of mining mechanics at the Mining School. As for Ivan Ivanovich Chemnitzer (1745–1784), his appointment was based both on his professional qualities and his good relations with the president of the Collegium of Mining. He is also widely known as the author of many fables that have been repeatedly published in Russia and are highly appreciated by literary critics.

The good organization of the educational process and the involvement of experienced teachers made it possible for the school’s first cohort to graduate two-and-a-half years after its official opening, on November 15, 1776.

However, M.F. Soimonov’s hard work led to a deterioration in his health. By 1776 he wanted to resign, but Catherine II instead provided him with leave and allocated him 10,000 rubles with full salary. During this trip, which lasted from October 26, 1776 to October 9, 1777, M.F. Soimonov visited Holland, Belgium, and France, where he not only underwent treatment for his ailments, but also took the opportunity to continue learning about mining.

Having returned to Russia, he found that nationally, mining was in a dire condition, which again required intense work from him. As a result, his health greatly deteriorated again, and this time in 1781, Mikhail Fedorovich retired. In 1783, Catherine II abolished the Collegium of Mining, but this did not improve the work of the mining industry in Russia. Paul I restored it in January 1797 and commissioned M.F. Soimonov to head the department, a

year after he had once again been made director the Mining School (in 1796). Paul I also elevated him to the rank of Privy Councilor and awarded him the Order of Alexander Nevsky.

What was the contingent of the students of the Mining School like when Mikhail Fedorovich became its director for a second time? The data on students, cadets, volunteers, and boarders of the educational institution is of great interest, and can be found in a report from the school's Assistant Inspector, P. Ilman, to the Director, M.F. Soimonov, dated December 20, 1796 (*TsGIA SPb. F. 963. Op. 1. D. 49. L. 1-40b.*). The report provides a detailed picture of the makeup of the student contingent.

The total numbers enrolled at the Mining School on December 20, 1796 were as follows: 15 non-boarding students, 2 boarding students, 90 non-boarding cadets, 23 boarding cadets and 9 volunteers, which gives a total of 139 people. The numbers were not much greater than for previous years for which we have data (1789, 1792 and 1793). This indicates a relatively stable number of students, with only minor changes occurring, mainly due to the number of boarders.

To break these figures down further, at the end of 1796, there were 15 students; all of them had enrolled as cadets between 1785 and 1794 and became students in 1795. In terms of age, four of them were 16 years old, one was 17, four were 18, three were 19, two were 20 and one was 21 years old.

Regarding social class, one of the students could not answer this question, since he did not remember his father. As for the rest, their parents were from various classes: five were children of junior or senior officers, three were children of civil servants, two were children of foreign merchants and the remaining four were sons of a seventh-grade mining official, a mechanic, an engraver and a priest. Of the two boarding students, aged 19 and 21, one was the son of a clerk, the other was the son of a doctor.

The data on enrollment date shows that the admission of cadets in general tended to increase. Of the 88 cadets covered in the data, there is no information about the age of two of them; among the rest, there were 17 aged 6-10, 12 of whom enrolled in 1796; 62 were aged 11-15 (19 aged 12-14, and 10 thirteen-year-olds and 10 fifteen-year-olds). Finally, there were nine people aged from 16 to 19 (there were no older cadets), including six who were 16 years old and one each at the ages of 17, 18 and 19 years old. The last was the son of a former student of Tobolsk seminary, Archpriest M. Karpinsky.

The social position of the cadets is also recorded. Half (45 cadets) were the children of officers. Among these officers, none were generals, only two were colonels, and 18 were chief officers and lieutenants, which, according to the class divisions of society at that time, corresponded to the lower class of officer. A similar picture emerges from the analysis of the children of civil servants, numbering 29 cadets, of whom 11 were children of court councilors and collegiate assessors, thus occupied the middle position in the hierarchical ladder. Relatively few – four cadets – were the children of mining officials. Three were children from families of priests, two cadets were from families of foreign citizens who were also professors (I. Martos and A. Salmaren), and there were also children of nobles. Finally, three were the children of court officials – a head waiter, a coffee maker and a mechanic.

Twenty-three students at the Mining School were boarders, and there were some differences between them: nine were state-supported, and the remaining 14 were not. It should also be mentioned that nine volunteers “without payment”, aged between 7 and 17, studied at the Mining School, having enrolled between 1793 and 1796.

The overwhelming majority of the students of the school were supported entirely or partially at the expense of the state. Admission was carried out throughout the entire calendar year, which created certain difficulties in the educational process. There is no information about the distribution of cadets into classes, taking into account their age. Those who had accumulated a suitable level of life experience by the age of 16-21 became students, especially since most of them spent considerable time within the school. As to the social status of students in all categories, the children of mid-level and, to an extent, lower-level officers and state officials was the norm. The training of children from families of senior officials was very much an exception to the rule. In addition, oddly enough, among the students of that time there were few children from families of mine workers, which can be explained by the relatively small number of mining officials in general. A final feature of the students cohort was that brothers of different ages were enrolled, which led to the formation of mining dynasties (*Vo glave Gornogo instituta, 2017, 2017: 13*).

Through his involvement in practical issues of the development of mining in Russia, combining visits to enterprises with paperwork, M.F. Soimonov undermined his health yet again and once more raised the question of resignation. Paul I refused to accept his resignation, but awarded him with the Order of St. Andrew the First-Called on July 31, 1799. The monarch instructed him to draw up a draft of the Mint, defining its place on the territory of the Peter and Paul Fortress. It was not until January 1, 1801 that M.F. Soimonov finally retired and left for Moscow. He died on October 17 (29 in the old calendar), 1804 in the town of Serpukhov, near Moscow, and was buried there next to his father's grave.

As for his cousin, Petr Alexandrovich was born in 1737. His father, Alexander Ivanovich, was a colonel and chief fiscal officer of the fleet and provided his son with excellent home schooling, which allowed him to attend and graduate successfully from Moscow University. After that, he served in the Izmailovsky Lifeguards Regiment. In 1779, after a long stay in the civil service, he was appointed to the Cabinet of Her Imperial Majesty as Secretary of State and remained in this post until the death of Catherine II in 1796.

Thus, having become Secretary of State, P.A. Soimonov became one of the most powerful officials of the Russian Empire. His work was good, and the empress was pleased with him, as can be judged by the awards and honors he was given. A personal decree dated June 25, 1782 declared: “We command to issue from the Cabinet ten thousand rubles granted from us to Major General Bezborodko, ... to Brigadier Soymonov ... five thousand rubles. Ekaterina” (RGIA. F. 468. Op. 1, part 2, 1782. D. 3897. L. 133).

P.A. Soymonov’s duties in Catherine II’s Cabinet were very diverse. He supervised construction work in Tsarskoye Selo and Pella, he was responsible for the compilation and publication of a new atlas of the Russian Empire, he found the craftsmen and painters who created the interiors of the empress’s palaces, and he provided her court ladies with a dowry (e.g. “By the oral command of Her Imperial Majesty, announced by Major General Soimonov, court lady Zakrevskaya is granted a dowry of twelve thousand rubles from the Cabinet” (RGIA. F. 468. Op. 1, part 2, 1785. D. 3990, pp. 180, 196, 197, 305). However, the main responsibility of Secretary of State P.A. Soimonov was the management of the Kolyvano-Voskresensk mining plants belonging to the Cabinet.

In the empress’s personal decree of June 27, 1784, it was said: “Soimonov has in his jurisdiction all matters relating to the management of the Kolyvan mining plants; however, upon the entry of these new members of the Cabinet into the position entrusted to them, and upon the admission of the Treasury and other things to their department, we will definitely provide them with detailed instructions. Ekaterina.” (RGIA. File 468. Op. 1, part 2, 1784. File 3899. L. 176).

By the empress’s decree of September 19, 1784 “On the transfer of the Mining School to the Soimonov department”, Petr Alexandrovich was appointed a director of the Mining School. She ordered that the educational institution created eleven years earlier “be transferred to the department of Major General Soimonov, who is present in our Cabinet, to manage the Expedition of our Kolyvanov mining plants.” The decree especially emphasized that Soimonov “must observe that knowledgeable people could not be borrowed from this school, not only for some factories of the department of our Cabinet, but in general for the mining.” (PSZ-1. T. XXII. No. 16070).

As head of the Mining School, P.A. Soimonov studied the state of the educational institution in detail and based on his assessment, submitted a memo Catherine II outlining specific proposals for improving the content of the school.

The response to that memo came in the form of another personal decree, given to Major General Soimonov on December 4, 1784. The empress ordered him to establish a post for Latin language teacher with a salary of 300 to 400 rubles a year; increase the budget for the maintenance of the school (paid by the state Treasury) from January 1, 1785 by 7,782 rubles a year; and to allocate 2,000 rubles annually for the purchase of books, tools and other property. The decree ordered the Mining School to “stay in its present place because there is a mountain [there] necessary for experiments; to try to spread this by acquiring a neighboring house for the Treasury and adding everything necessary.” (PSZ-1. T. XXII. No. 16103).

A little more than two years passed until, on January 5, 1787, Catherine II again issued a personal decree addressed to P.A. Soimonov, “On assigning him to the management of the Nerchinsk factories”, in which our attention was attracted by par. 9:

When instructed to run your Mining School, we deign ... to multiply the number of students by another 50 people including teachers, etc. ... so that upon completion of their studies, it would be possible to supply the Nerchinsk factories with them, so that we can meet all the requirements of the province; the sum for the maintenance of these surplus people is 15,000 annually, and for the construction of several apartments for living and classes, as well as for the premises of the library and the study – as required, to receive a lump sum from the Cabinet (PSZ-1. T. XXII. No. 16497).

The text of this paragraph of the decree testifies to the fact that the empress’s trust and his own practical experience of managing mining plants allowed P.A. Soimonov to successfully solve many issues in the interests of the further development of the educational institution. For example, he introduced a practice whereby students, after completing a course in science but before graduating from the School, were sent out to gain work experience at certain state factories. Also on his initiative, distinguished students were sent abroad for two years, mainly to Saxony, Hungary or Sweden, to become acquainted with foreign factories and mines where the art of mining had developed much further. This innovation was later consolidated in the Charter of the Mining Cadet Corps, adopted in 1804, but the practical implementation of the idea began to be widely carried out only in the first half of the 19th century.

Under P.A. Soimonov’s management, the number of students studying at the state’s expense continued to increase and reached 60 people; the cost of maintaining each of them also increased. He made sure that the School was equipped with all the necessary tools and preparations for carrying out physical, mechanical, hydraulic and chemical experiments, as well as the all the textbooks it needed over the entire period.

One of the major legacies of P.A. Soimonov’s term was a significant improvement in the financing of the educational institution. The school’s budget problems were resolved by means of imperial decrees. For example, on January 22, 1784, Catherine II, issued the following personal decree to Chief Prosecutor A.A. Vyazemsky: “Prince Alexander Alekseevich! Having considered the report submitted to us by the Senate on the amount required for the maintenance of the Mining School available at the Local Treasury Chamber,

we command [that on top of] the previously determined 3,657 rubles and 12 kopecks, a further 3,350 rubles per year be issued, starting from the 1st of this January.” (PSZ-1. T. XXII. No. 16103).

The same issues were touched upon by Catherine II in her previously mentioned personal decree of December 4, 1784, given to Major General P.A. Soimonov. Less than a year later, on August 13, 1785, the Senate decree “On the inclusion of money collected from Perm ore miners for the maintenance of the Mining School, to the general state income.” (PSZ-1. T. XXII. No. 16241) was issued.

The periods in which the school was run by M.F. and P.A. Soymonov were united by the fact that they attracted the best specialists of Russian science to teach there. These included the physicist L.Yu. Kraft, mineralogists V.M. Severgin and A.K. Schlegelmilch, corresponding members of the Academy of Sciences A.M. Karamyshev and I.M. Renovants, the mineralogist and chemist F.P. Moiseenko, and mathematician A.M. Wilbrecht. As the student contingent expanded, the teaching staff also grew, although this process was smooth. By the beginning of 1800, 15 teachers were employed, not counting the class inspector (RGIA. F. 1341. Op. 1.D. 284. L. 78).

A second feature of their management of the school was the gradual involvement of former students in the teaching staff, including one of the first graduates, P. Ilman, who matriculated in 1787, and I.G. Wolgemuth, who taught mine surveying, geometry, the fundamentals of physics, mining mechanics and hydraulics from 1799 to 1831. His authority was so great that he taught physics to the children of Emperor Paul I, Grand Dukes Nicholas and Paul. A graduate of 1790, P. Meder, taught geognosy, mining art and mineralogy from 1795 to 1808. Another graduate of the same year, F. Holm, taught drawing, which was one of the compulsory disciplines in the training of specialists-miners, to both students and secondary-level cadets (*Vo glave Gornogo instituta*, 2017: 12-13). It should be noted that the traditions established by the Soimonovs were promulgated throughout all subsequent years of the institution’s existence, and even today, most of its leaders are still its graduates.

P.A. Soimonov paid great attention to replenishing the collection of minerals and other exhibits for practical training of students.

In addition to the management of the Mining School, Mikhail Fedorovich and Petr Alexandrovich actively participated in improvements to the way mining plants operated. For M.F. Soimonov, this activity began immediately after his appointment in 1771 as president of the Collegium of Mining. Catherine II instructed him to deal with a situation at the Olonets factories, built by order of Peter I, where their dire mismanagement was causing serious concern. On December 7, 1771, she signed a decree “On the structure of the Olonets and Petrovsky factories”, instructing M.F. Soimonov to go there, providing for this trip “the required amount of money without frills” so that, “having appointed at his own discretion capable and reliable people to the positions,” he could “experience all the actions himself”. He was instructed to remove those culpable for the problems from the Petrozavodsk Chancellery and to appoint new officials in their place, entrusted with investigating the affairs (PSZ-I. T. XI. No. 13712).

Having familiarized himself with the position of the factories on the ground, M.F. Soimonov came to the conclusion that the situation was even worse than it had seemed in St. Petersburg. The new owners of private factories, instead of producing the necessary products (including armaments), had limited themselves to making tin, of which a small part was converted into lacquered dishes, and the large part, after tinning, was sent to European ports and exchanged for wines of different varieties, English beer, Kaportsa, olives and Provençal oil; of the so necessary and useful skills instituted by Peter the Great, nothing was found, and the guns were all taken to Kronstadt and placed in the merchant’s harbor, Kronstadt and the citadel, which they still serve to this day, and the guard battalion has been withdrawn; at the Konchezersk plant, [only] one small casting of military shells was carried out (*Gornyi zhurnal*, 1884: 157).

The owners were also failing in their social and environmental responsibilities: at the Marcial Waters, the hostels for the sick, established at the very source by the wise sovereign, as well as the palaces ... had rotted and almost completely collapsed; the source of the Marcial waters, which Their Majesties themselves used and the benefits of which were tested, is clogged (*Gornyi zhurnal*, 1884: 157).

During the two months M.F. Soimonov stayed at the Petrovsky plant, he achieved a huge amount. Up to 40 copper and iron ore veins were opened and prepared for exploitation, the deposit of copper ore was cleared at the Voitsky mine, and a convenient place was found for the construction of a new metallurgical plant on the Lososinka River.

On the recommendation of M.F. Soimonov, its construction was entrusted to Anikita Sergeevich Yartsov (1737–1819), a graduate of Moscow University, who was not only one of the leading mining specialists in Russia at the turn of the 19th century, but also headed the Mining School from 1783 to 1784. Finally, we note that, based on M.F. Soimonov’s report, the constructed plant began to be called Aleksandrovsky; it is still operating successfully today.

A notable period in M.F. Soimonov’s life at the end of the 18th century was concerned with supervising the construction of the Luginsk foundry, established by decree of Emperor Paul I on February 25, 1797 (PSZ-1. T. XXIV. No. 17832). The building of the plant began during the reign of Catherine II, but after her death, work was suspended.

Based on M.F. Soimonov’s report, general supervision of the work was entrusted to K. Gascoigne, whom he knew well from the Olonets plant. In addition, in the aforementioned decree of Paul I, we find

questions about the allotment of additional land, about the manning of the construction with labor force, about the forests located on the banks of the Donets river and others. The emperor did not disregard these essential issues, and his decrees of April 21 and August 14, 1798 gave M.F. Soimonov specific tasks, the implementation of which contributed to the completion of the construction of the plant.

While Mikhail Fedorovich's activity in solving mining issues extended mainly to the European part of Russia, the Kolyvanovo-Voskresensk plants of Altai, which were under the jurisdiction of the Cabinet of Her Imperial Majesty, were a subject of special concern for Petr Alexandrovich. This was due to the fact that, along with the Ural factories, they were the main suppliers of gold and silver to the state treasury. It should be borne in mind that while the gold mines of the Urals were mainly owned by private individuals, the Kolyvanovo-Voskresensk plants were owned by the state and the replenishment of the state treasury largely depended on their output.

The mining industry in Russia during this period was going through some difficult times, being negatively affected by ill-considered reorganizations – in particular, the liquidation of the Collegium of Mining in 1783. The state-owned enterprises controlled by the Collegium were transferred to the disposal of state chambers, headed by people who had little familiarity with mining. Predictably, this instantly led to a drop in the rate of development of production, the unproductive use of equipment, and a high staff turnover, all of which caused a decrease in treasury income. This then became a cause of serious concern for the authorities (Gavrilova et al., 2000: 89).

The state of affairs in Altai was of particular concern. A commission headed by P.A. Soimonov was sent there to analyze the situation. Under the personal decree of the empress dated May 20, 1785, P.A. Soimonov was instructed conduct “a personal review of the department of our Cabinet of the Kolyvan factories” and granted him power “for the execution of all the necessary orders, through which the various difficulties encountered here can be averted.” (PSZ. T. XVI. C. 206).

Catherine II took care of her employees. On his trip to Altai, P.A. Soimonov was given huge travel allowances. A decree of May 25, 1785 stated that “Major General Soimonov is granted four thousand rubles for the journey to the Kolyvan factories, until the return from there food money for five months, two hundred rubles per each month – a thousand rubles in total, and a thousand rubles for sending couriers, a total of six thousand rubles.” (RGIA. F. 468. Op. 1, 1785. D. 3999. L. 201). By way of comparison, we can provide data that characterize the level of Soimonov's trip. In the same month (May 1785), a separate imperial decree granted “to the Bergmeister of Nerchinsk factories Razderishin, one hundred-and-twenty-five rubles thirty-four kopecks for going to Perm” to be issued from the funds of the Cabinet (RGIA. F. 468. Op. 1, 1785. D. 3999. L. 243).

Having arrived in Altai, P.A. Soimonov visited mining camps, mines and factories and inspected the work of the main office and the mining expedition. As a result of this audit, he decided to centralize the management. To this end, he appointed G.S. Pitching, a prominent person in the mining department, as manager of the Kolyvan-Voskresensk factories (Rodionov, 1988: 70).

While in Altai, Petr Alexandrovich not only engaged in his assigned task to rationalize the management of mining plants, but also created a collection of semi-precious stones. To put this in context, in the second half of the 18th century, a new fashionable hobby in Russian aristocratic circles – mineralogy. Representatives of high society began to create collections of minerals; Maria Fedorovna, the wife of the heir to the throne, Pavel Petrovich, even took lessons in stone carving (Rodionov, 1988: 68). Having returned to St. Petersburg, P.A. Soimonov showed his collection of minerals to Catherine II, who immediately issued a decree: “We instruct Major General Soimonov to make efforts to spread mines of not just ores, but all kinds of stones and useful minerals.” (Rodionov, 1988: 70).

Not long after this, he sent instructions to G.S. Kachke, noting that “various porphyries and breccias, agates and jaspers, presented to Her Imperial Majesty, in the vicinity of Kolyvano-Voskresensk factories, were awarded the highest favor ... orally, Her Imperial Majesty deigned to indicate to me that from the side of the factory, efforts should be made to seek out those places where the stones I have described above are located, and, when possible, to ascertain where they can be found, then establish stone breaking and grinding workshops at factories for processing columns, vases, tables, fireplaces and other similar devices.” (Gulyaev, Ivachev, 1902: 6).

The same letter specifically indicated a desired timescale: “Upon the beginning of next spring, please send to the mountains of the Altai ridge, and especially to the sources of the rivers Charysh, Uba, Ulba and other flowing rivers from this belt, and other places, several parties” to search for such stones in those rivers. “To their greater encouragement, you can, at your discretion, determine some commensurate reward for being zealous and lucky in this exploration, but as I know, in the local region many of the willing people are accustomed to finding ores, so we can trust that there will be volunteers who will engage in this exercise.” (Gulyaev, Ivachev, 1902: 6-7).

Having received these instructions from St. Petersburg, G.S. Kachka began to implement them immediately, preparing geological exploration groups. In the spring of 1786, the chiefs of nine search parties received detailed instructions from P.A. Soimonov, which listed everything that could be worthy of attention: which rivers are navigable and rich in fish, whether the lands are suitable for arable use, what trees and grasses grow in the mountains and valleys, what birds and animals live in the natural boundaries, and by whom these regions are inhabited and how they live. It is noteworthy that archeology was not forgotten

either: information was provided on “whether there are rare ruins of buildings ... statues or signs carved on stone.” (Rodionov, 1988: 73).

One of the chiefs of the parties, a man called Ridder, was warned: “If you happen to travel to residences and to nomadic peoples, treat them with all kindness so as not to give occasion to any displeasure from them, and observe even more strictly the team entrusted to you.” (Rodionov, 1988: 82).

Nine search parties set off to explore the gems deposits. Their findings were incredible: giant deposits of gems were discovered in Altai, in connection with which the question of building a stone-cutting and grinding factory arose. The initiative and implementation of this project came from P.A. Soimonov.

In 1787, the first batch of items made of black porphyry, which was fashionable at that time, was sent from Barnaul to St. Petersburg: vases one arshine high, two semicircular tabletops and three inlays in the form of books. The products of Altai craftsmen made a strong impression on customers. An increasing number of orders were sent from St. Petersburg to Altai. P.A. Soimonov informed G.S. Kachka that “Her Imperial Majesty would be pleased to have two collections from each kind of porphyry, jasper and other cork stones.” (Rodionov, 1988: 95).

After a short period of time, another demand was sent to Barnaul – the empress had presented corks and books made of stone to the Grand Duke Alexander Pavlovich, and now she required the same for herself and for the Grand Duke Konstantin Pavlovich. A collection for the Mining School in St. Petersburg and one for the Moscow Engineering School was also needed. Further, the Cabinet ordered ten collections at once.

Each collection contained 130 Altai stones. P.A. Soimonov wrote to G.S. Kachka: “Our porphyries infatuated everyone here. That is why there is no day when foreigners do not ask us to deliver some specimen to their courtyards”. The Academy of Sciences did not wait patiently for their share. Its president, Princess E.R. Dashkova, was so persistent that Soimonov complained to Kachka: “the princess tortured me with her demand for pieces of ore; for God's sake, lend her some on my behalf!” (Rodionov, 1988: 95-96).

In 1793, P.A. Soimonov retired from the post of Director of the Mining School, leaving behind good memories of himself among students and teachers. However, his career did not end at this point.

P.A. Soimonov's efforts were greatly appreciated and recognized by the authorities. In 1787, according to the Highest Rescript, he was granted possession of 11,338 dessiatines of land in Saratov province (by way of comparison, Prince G.A. Bezborodko was given 12,000 des. and G.R. Derzhavin 6,000 des.) (RGIA, F. 1374. Op. 1. 1787. D. 361. L. 13). On August 27, 1795, he was accepted as an honorary member of the Imperial Academy of Sciences. The minutes of the academic conference recorded that “Mr. Bakunin informed the conference of the nomination of Lieutenant General Petr Soimonov, Senator and Knight of the Grand Cross of the Order of St. Vladimir, 2nd class, as an honorary member of the Academy. The conference took note of it, approved Soimonov's candidacy and instructed the secretary to issue a diploma.” (Arkhir Rossiiskoi akademii nauk. F. 1. Op. 1. D. 4. L. 444).

In 1796, great changes took place in the administrative structures of Russia. After the death of Empress Catherine II, her son Paul I ascended the throne and immediately began to remove from high posts the employees of his deceased mother. At first, the new emperor was disposed favorably towards the experienced manager P.A. Soimonov.

Two important appointments followed, one after the other. “By the name of His Imperial Majesty's decree, which took place during November of 1796, after His Majesty's own handwritten signature, which depicts: “We most mercifully command Lieutenant General Petr Soimonov to be the president of the Collegium of Commerce.” (RGIA. F. 796. Op. 77, 1796. D. 565. L. 1). In the same year he was inducted into the Governing Senate (Ocherki..., 2010: 14).

The disposition of the emperor, who appreciated the merits and abilities of Catherine II's former Secretary of State, was manifested in his 1797 decree awarding the roles of Privy Councilor and President of the Collegium of Commerce to P.A. Soimonov, along with 800 serfs in the Nizhny Novgorod province (RGIA. F. 1374. Op. 1, 1797. D. 394. L. 14).

However, the good will of Emperor Pavel Petrovich did not last long. In 1799, P.A. Soimonov lost his posts and retired. Disgraced, he was expelled from the capital and left for Moscow, where, on January 2, 1800 he suffered a stroke and died.

## 5. Conclusion

The 18th century occupies a special place in the history of Russia: it was a time of great achievements and a time of storms and onslaughts. The reforms initiated by Peter the Great required the involvement of active, talented and educated people in governing the country. There were few such people in Russia at that time. Mikhail Fedorovich and Petr Alexandrovich Soimonov, with their abilities and energy, were in much demand and both had impressive careers. Moreover, they flourished in completely different fields: both served in the army when they were young, then they both became high-level managers, courtiers of Catherine II, managers of mining plants and scientists. Petr Alexandrovich was the director of the imperial theaters for some time, and finally, both brothers at different times headed the Mining School which was the first higher technical educational institution in Russia. Thus, analyzing the activities of M.F. and P.A. Soimonov in the field of mining in Russia, we can confidently rank them among the country's most outstanding persons in this field.

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