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## DIGEST

# INTERNATIONAL MUSEUM DAY

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INSTITUTION OF HIGHER EDUCATION

SAINT PETERSBURG MINING UNIVERSITY

# INTERNATIONAL MUSEUM DAY

## MAY 2023

## DIGEST

St. Petersburg
2023

## Abstract

*Every year on May 18, the world celebrates International Museum Day. This issue of the digest includes articles of the scientific journal "Journal of Mining Institute" and is dedicated to the St. Petersburg Mining Museum, one of the largest natural-science expositions in the world, opened concurrently with the Mining School in 1773. Its unique collections include rare minerals, precious stones and metals, the largest collection of meteorites, historical and operational models of mining equipment, paleontological collection, archival documents, and a number of other exhibits.*



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# The Mining Institute: Founding, Development and Cooperation

*The founding date of the Mining Institute is November 1 (October 21), 1773 – the day when the Empress Catherine II signed a decree on the establishment on the banks of the Neva River of the first in Russia higher technical educational institution, training specialists in the field of mining. The articles in this section focus on the history and development of the institute, as well as notable figures, famous explorers and researchers, and leading specialists, who made a significant contribution to the development of Russian science as well as inestimable collections of unique exhibits which are widely used for studies and work by specialists and students.*

***Boldyrev A.K., Grigoriev I.F. Mapping of mineral deposits (With a map of polymetallic deposits of the Russian Altai). Journal of Mining Institute. 1926. Vol. 7(1), p. 97–136. https://pmi.spmi.ru/index.php/pmi/article/view/15230.***

**Abstract.** Mapping of mineral deposits is one of the most important objective methods of their study. The present work is devoted to the development of rational methods of mapping, treating this issue in a general way. The first reason for this work was the urgent need for a rationally constructed map of the Altai polymetallic deposits. The need for such a map immediately became clear in the early years of the Geological Committee's research in the Altai, and then the work was undertaken by both of us in two directions: a mapping technique was developed, and literary, archival and new unpublished by the Altai workers Geol. Committee material, necessary for compiling a map of the Altai deposits, was collected. This article is the result of work in the first direction.





***Vladimirskaya E.V., Pnev V.P., Kagarmanov A.H., Pavlov A.M. et al. Vitaly I. Bodylevsky. Journal of Mining Institute. 1969. Vol. 58(2), p. 3. https://pmi.spmi.ru/index.php/pmi/article/view/12096.***

**Abstract.** August 9, 1968 Leningrad Mining Institute suffered a great loss: died Vitaly I. Bodylevsky, professor of the Department of Historical Geology. Fifty years of his life Vitaly Ivanovich gave his life to the Mining Institute, and during these long years he trained and tutored hundreds of geologists, became a leading specialist in the field of paleontology and stratigraphy of the Mesozoic, and a world famous scientist.

***Karpova G.A., Tkachev V.A., Heide G., Talovina I.V. Museums of Saint Petersburg Mining University (Russia) and Freiberg Mining Academy (Germany) as the Basis of Scientific and Educational Tourism Cluster. Journal of Mining Institute. 2018. Vol. 232, p. 341–346. DOI: 10.31897/PML.2018.4.341.***

**Abstract.** University museums are a group of specialized educational museums with different profiles that are created to increase the effectiveness of the educational process and are a base for scientific research of teachers and students and contribute to the development, transfer and popularization of knowledge. Formation of scientific and educational tourist cluster on the basis of two of the oldest mining museums and universities in the world will create a modern multifunctional structure with a high degree of interdisciplinarity, which will enable to develop new forms of cluster interaction, which will include elements of various branches and areas of knowledge and guarantee not only economic benefits, but also perform an important social role in the development of social relations. The core of the cluster structure of a new type could be educational organizations, cultural institutions, the research sector, specialized organizations in the sphere of physical culture and sports, enterprises and organizations of the entertainment industry. The options of combining these spheres for popularization of knowledge in a new, modern format deserve a special attention, in particular, by means of formation of scientific and educational tourist cluster on the basis of university museums.

***Grigoriev D.P. The Mining Institute and the Emergence of the Geological Committee. Journal of Mining Institute. 1983. Vol. 95, p. 3. https://pmi.spmi.ru/index.php/pmi/article/view/10738***

**Abstract.** Among a number of institutions genetically related to the Mining Institute, a very prominent place was occupied by the Geological Committee, the foundation of which marked the beginning of the entire state geological service of our country, headed by the Ministry of Geology of the USSR. It is quite logical that the history of the Geological Committee turned out to be connected with the Mining Institute. Since 1773, the Higher School of Mining was intended to prepare engineers for practical activities – "to join the mining factory and mint services" in order to "manage ... metal and mineral plants". At the same time, it is important to note that it was admitted that the future mining engineers must be taught the science of "explaining... the geographical and historical knowledge of minerals, in reasoning of their location in the mountains and their birth". So in the "Charter of the Mining School" of 1774 the task of knowledge and application of the laws of formation and distribution of minerals as useful minerals, solvable only on the basis of the study of geology of the country, was already essentially set.

***Shalygin L.M., Polarnaya J.A., Brylevskaya E.A. Prominent personalities of the russian history of the late 18th – early 19th centuries in their involvement in the stages of development of the Mining Institute (for 230th Anniversary of the Mining Institute, 250th Anniversary of Paul I, 200th Anniversary of M.F. Soymonov's Death). Journal of Mining Institute. 2005. Vol. 163, p. 105. https://pmi.spmi.ru/index.php/pmi/article/view/8360.***

**Abstract.** The article is devoted to the personalities of prominent figures of the first higher technical educational institution of Russia – St. Petersburg State Mining Institute (Technical University). The authors focus on the undertakings of M.F. Soymonov, A.A. Musin-Pushkin, N.A. Lvov, V.V. Kapnist, A.N. Olenin, D.I. Khvostov, G.R. Derzhavin, I.I. Chemnitser and others in connection with their work at the Mining Institute, patronage of the first Russian higher technical school or acquaintance with the students of the Mining School. In the fascinating and lively form, the authors acquaint the reader with the participation of prominent personages of Russian history of the 18th – early 19th centuries relating to the Mining Institute in the cultural and scientific life of the Russian Empire of that time.





***Bazhin V.Y., Alexandrova T.A., Kotova E.L., Gorlenkov D.V., Susorov R.S. Metallurgists of the Mining University and Development of the Monetary Industry. 245 Years of History. Journal of Mining Institute. 2018. Vol. 230, p. 131-138. DOI:10.25515/PMI.2018.2.131.***

**Abstract.** Coinage combines several stages of metallurgical processes, which are constantly improving with the development of technology and the level of knowledge in the field of metallurgy of non-ferrous metals. The graduates of the Mining Institute, metallurgists of several generations were involved in the formation of the Mint and the development of coin production technology. On January 24, 1718, when Peter I signed a Decree "On making small and large coins..." the history of Russia's monetary system and issue of the first silver rubles which later became the basis of monetary relations began. Twenty four graduates of the Mining and Metallurgy faculties of the University worked as managers and mint maesters of the Mint. Silver rubles and work of domestic mint maesters ensured financial stability in Tsarist Russia from 1718 to 1917 and laid the foundation for further development of mint business in view of new knowledge in enrichment, preparation of poly-metal ores and their smelting, as well as stamping and processing of noble metals. his is the history of Russia and St. Petersburg, which united the history of the Mining University, which this year celebrates its 245th anniversary. Of scientific interest is the restoration of historical correctness and the updating of methodological knowledge in the technology of coinage and metallurgical processes.

***Borovkova N.V. In Memory of Labor and Care. Journal of Mining Institute. 2005. Vol. 163, p. 25. https://pmi.spmi.ru/index.php/pmi/article/view/8341.***

**Abstract.** The Mining Museum has attributed a marble bas-relief, which had been kept in its storerooms for a long time. This portrait has decorated the Conference Hall of the Mining Institute for 130 years. During the study of the exhibit, based on archival documents, its history and time of entry into the Museum of the Mining Institute – 1805 – were established. Also, it was found that this is the portrait of P. Soimonov, the fifth director of the Mining Institute, a senator, an outstanding statesman of the 18th century, who contributed significantly to the development of the Mining Institute and the museum.

***Bazhin V.Yu., Telyakov N.M., Alexandrova T.A., Gorlenkov D.V. (2019). Production of Silver Ruble and Participation of the Saint Petersburg Mining University in the Development of Monetary Industry of Russia. Journal of Mining Institute, 2019. Vol. 236, p. 201-209. DOI: 10.31897/PMI.2019.2.201***.

**Abstract.** This article is a continuation of a series of works on the study of the production of silver rubles and the development of the Russian mint. Graduates of the Mining University contributed to the formation of the reputation and history of the St. Petersburg Mint as an advanced and high-tech facility. The article examines the beginning of the development of silver ruble production, the use of ores from the Nerchinskoye deposit in Transbaikalia to produce the main raw materials in the form of concentrates and silver alloy. Unique exhibits from the Mining Museum of Mining University, which are connected with the history of minting and the St. Petersburg Mint, were used as materials for the study. A study of some samples of lead-silver ore, cast blanks and stamped coins has been conducted in order to determine the technological features of their manufacture. Analytical study of minting and making of the first Russian silver coins has been carried out according to some data of the tsar's decrees. The modern level of technology and knowledge, as well as special equipment of the laboratories of Mining University allowed a new assessment of the characteristic features of silver coins production.

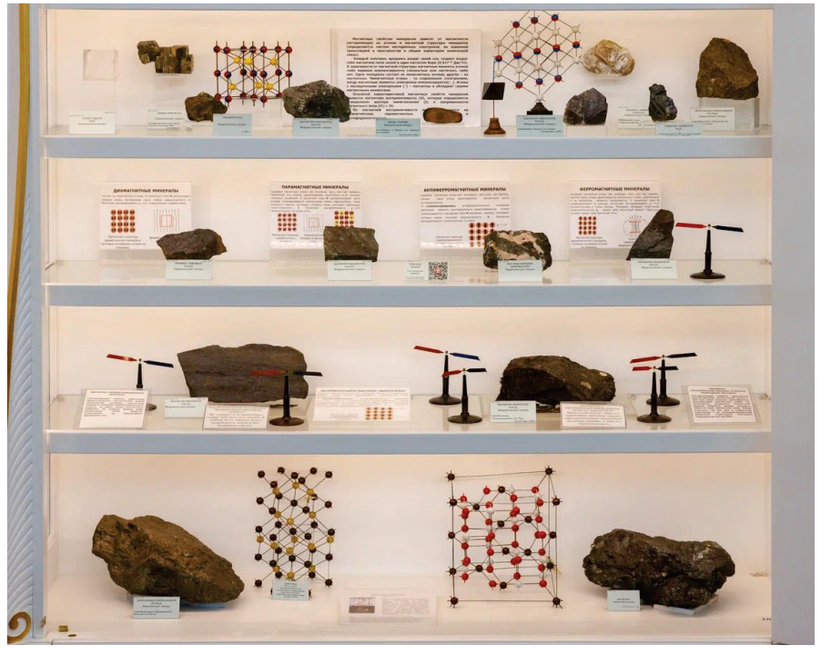


# Articles by the Staff of the Mining Museum

*The authors of the articles in this section are former and current employees of the Museum, one of the oldest natural science museums in Russia.*

***Grigoryev D.P., Kuznetsova V.G. Magnetic properties of minerals (new exposition in the Mining Museum). Journal of Mining Institute. 1967. Vol. 52(2), p. 140. https://pmi.spmi.ru/index.php/pmi/article/view/12435.***

**Abstract.** The Magnetism exhibit at the Mining Museum is part of the Mineral Properties section of the General Mineralogy Department. This section introduces the concept of minerals, then characterizes the constitution of minerals, and then discusses the properties of minerals as a function of their constitution The goal of the new exposition is to provide more information on this property of minerals and its dependence on the specifics of the minerals' constitution. The exposition is made according to the basic principle of the museum, which is to be a stone book of mineralogy. It consists of samples of minerals and explanatory texts, diagrams and other exhibits, allowing to get acquainted with the question completely in the museum.



***Chernykh V.V., Grigoryev D.P. Physico-chemical studies in connection with stonemasonry. Journal of Mining Institute. 1935. Vol. 9(1), p. 45-50. https://pmi.spmi.ru/index.php/pmi/article/view/15315.***

**Abstract.** The aim of our synthetic experiments was to artificially produce individual components of stone casting in a well-individualized form and in sufficiently large quantities. We had to synthesize, firstly, those minerals which were determined by petrographers in the microscopic study of stone castings and, second, those minerals whose presence in the castings can only be assumed. The latter could be present in the form of microlites and not optically detectable, but detectable in the X-ray diffraction study of the castings. The minerals we synthesized had to be subjected to X-ray diffraction study in order to obtain the etalon debyegrams necessary for the deciphering of the stone casting debyegrams. In accordance with the task, the method of synthesis was also chosen, namely the method of crystallization of minerals from the corresponding melts.

***Bazhin V.Yu., Alexandrova T.A., Kotova E.L., Suslov A.P. A modern view of anomalies in the metal groups of the periodic system of D.I. Mendeleev. Journal of Mining Institute. 2019. Vol. 239, p. 520-527. DOI: 10.31897/PMI.2019.5.520.***

**Abstract.** The article is dedicated to the 150th anniversary of the Periodic Table of Chemical Elements by D.I. Mendeleev. The fundamental law of nature discovered by D.I. Mendeleev has anomalies and paradoxes associated with certain metal groups. When studying physical and chemical properties of complex metal compounds, you can find a large number of inconsistencies, namely, the locations of elements in groups, which primarily relate to metals with different valence. Studying the approaches and methods for predicting the arrangement of the chemical elements, we can find that many of the differences in some of the metals were eliminated by D.I. Mendeleev in the process of forming the Periodic system of chemical elements. Mendeleev had developed a principle which excluded such errors in the finding and discovery of new elements. The Russian scientist's analytical studies helped to calculate the atomic weights and describe the properties of the three elements unknown at that time-"ekabor", "ekasilicium", "ekaaluminum," whose existence was proved and confirmed by the subsequent discoveries of scandium, germanium, boron, and gallium. The paper provides a meaningful





assessment of the prediction of metals in different groups of the periodic system. Changes in the properties of some metals significantly affected their position in the table of D.I. Mendeleev.

# The Collections of the Mining Museum

*The fund of the Mining Museum includes more than 200 thousand samples of minerals and rocks, models of mining and metallurgical equipment, works of fine and decorative and applied art, a unique collection of meteorites. The section features collections related to the names of outstanding scientists of Russia and foreign countries, prominent statesmen, famous travelers and explorers. The articles of this section are devoted to the museum's unique collection, in particular, rare minerals, as well as literary and archival materials.*

***Fedorov E. S. Mineralogical Museum Crystals. Journal of Mining Institute. 1908. Vol. 1(3), p. 192-222. https://pmi.spmi.ru/index.php/pmi/article/view/15300.***

**Abstract.** Natural crystals are the most difficult object for the method of crystal-chemical analysis, and I must admit that the attempt made by me to give all minerals a correct setting turned out to be imperfect in many points. But it was precisely this imperfection that prompted the further development of the criteria of the correct setting, and pointed to the need for repeated study and individual investigation of crystals of many minerals.

***Zavaritsky A.N. Some of the samples of graphite deposit rocks belonging to the mineralogical collection of the Mining Museum. Journal of Mining Institute. 1908. Vol. 1(4), p. 295-301. https://pmi.spmi.ru/index.php/pmi/article/view/15321.***

**Abstract.** The samples studied represent host rocks of graphite from its various deposits: the Mariinskiy mine on the Botogolskiy Golts (the Aliberovskiy deposit), the Barrowdel deposit in Cumberland, and two Uralian deposits, one near the Sysertskiy plant; the other one location is not known – probably from the Ilmensky mountains.





***Sokolov V.I. Druzoid from the Sliudyanka River. Journal of Mining Institute. 1908. Vol. 1(3), p. 235. https://pmi.spmi.ru/index.php/pmi/article/view/15305.***

**Abstract.** The sample No. 169/3 from the Museum of the Mining Institute was sent to the Mineralogical Cabinet for study No. 169/3 with the label: "Bronzite from Sliudyanka river". Two thin sections showed that the sample is a rock, which really contains as a part, rhombic pyroxene, close to bronzite. The rock itself presents some features in its composition and structure, which make it be attributed to the type of druzite rocks.

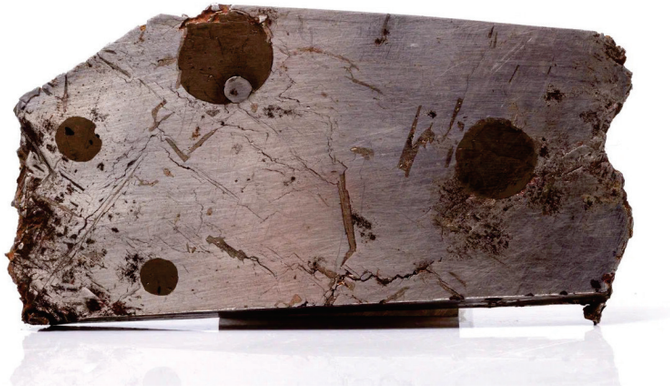
***Fedorov E.S. Crystals of the Mineralogical Museum. Journal of Mining Institute. 1909. Vol. 2(4), p. 285-328. https://pmi.spmi.ru/index.php/pmi/article/view/15386.***

**Abstract.** Amphibole. Pyroxene. Aegirine. Enstatite. Hypersten. Babingtonite. Lievite (ilvaite). Beryl. Fenacite. Trustite. Willemite. Sphene (titanite). Parisite. Gold. Cerussite. Aragonite. Quartz. Olivine. Neptunite. Cinnabar. Celestine. Barite. For a detailed description of crystals, see the article.

***Fedorov E.S. New acquisitions of the Mineralogical Institute. Journal of Mining Institute. 1909. Vol. 2(4), p. 330-332. https://pmi.spmi.ru/index.php/pmi/article/view/15388.***

**Abstract.** Nowadays crystallography widely uses graphical techniques to solve its problems. Among the goals set in the development of graphic operations is also the increase of accuracy. Regarding the design of the new device, mainly let us note the much larger size of the device, of which the black hemisphere, as the main working part of the device, has a diameter of a little over than an arshin. The second device is a universal prismatic goniometer with three axes. It serves for universal measurement of crystals so large that they can no longer be mounted on the crystal carrier of ordinary goniometers. The third device is designed to facilitate the crystallization process. The principle of operation consists in rhythmic heating and cooling of a vessel with a solution in which crystallization takes place.

***Kupffer A.E. To the description of meteorites from Augustinovka, Petropavlovsk and Tubila. Journal of Mining Institute. 1912. Vol. 3, p. 315-318. https://pmi.spmi.ru/index.php/pmi/article/view/15392.***



**Abstract.** The descriptions of the named meteorites available in the scientific literature are made on insufficient material from large meteorite collections and need more detailed characterization. The distribution of the main masses of these meteorites currently in the Museum of the Mining Institute, made earlier, was very imperfect and did not allow a detailed and complete description of them; partly because the huge main piece of meteorite from Augustinovka, left to its fate, is covered with a thick layer of rust.





***Fedorov E.S. Thin-plate crystals of brukite. Journal of Mining Institute. 1909. Vol. 2(3), p. 253. https://pmi.spmi.ru/index.php/pmi/article/view/15375.***

**Abstract.** Crystals of this mineral from the Museum of the Mining Institute have already been systematically described by me in a special article. Recently two new interesting crystals of this mineral have arrived to the museum. The most striking thing is their unusual thinness, reaching up to 0.1 m.m. at a planar size greater than a square centimeter. On such extreme differences it is especially instructive to raise a question about the existence of dependence between the form and combination.

***Artemiev D.N., Lomberg V.M. Crystallization of cobalt-nitro-acvo-dimethylgluximine. Journal of Mining Institute. 1910. Vol. 2(5), p. 353-356. https://pmi.spmi.ru/index.php/pmi/article/view/15392.***

**Abstract.** Cobalt-nitro-acvo-dimethylgluximin was first discovered by L.A. Chugaev, who gave it to the Mineralogical Institute (Mining Institute) for crystallographic study. See the results of the study and the tables of crystal measurements in the article.

***Mikheev V.I. Cassiterite crystals from the Atlyanskiye placers in the Urals. Journal of Mining Institute. 1941. Vol. 13(3), p. 119-128. https://pmi.spmi.ru/index.php/pmi/article/view/15073.***

**Abstract.** The subject of the present report appeared under somewhat unusual circumstances – during a student class. In the spring of 1938, as in the previous years, a course in goniometry of crystals was taught at the Leningrad Mining Institute. The main emphasis in this course was on practical exercises. The latter were arranged in such a way that each student was given a crystal of some substance which they did not know, and by the end of the class the substance of the crystal had to be determined by the results of measurements. Mineral crystals from the collection of natural crystals in the Mining Museum and crystals of artificial compounds were used for this purpose. The classes were held in several sessions. The first four hours were devoted to measuring a crystal on a two-circle reflective goniometer by E. S. Fedorov; then processing of data obtained during measurement and, finally, determination of substance with the help of crystal identifiers.

***Lubalin M.D., Dudnik E.P., Kuznetsov A.S. 1977. On the morphology of one sample of germanium from the LMI museum. Journal of Mining Institute. 1977. Vol. 74(2), p. 64. https://pmi.spmi.ru/index.php/pmi/article/view/11212.***

**Abstract.** The mineralogical museum of the LGI received a spectacular sample of germanium, which was the upper part of a large crystal, grown from the melt by the method of stretching.

***Bulakh A.G., Popov G.N., Jansson S.Y., Ivanov M.A. New data on the granite pedestal of the "Bronze Horseman" monument to Peter the Great in St. Petersburg. Journal of Mining Institute. 2021. Vol. 248, p. 180-189. DOI: 10.31897/PMI.2021.2.2.***

**Abstract.** In order to expand and popularize knowledge about the stone decoration of St. Petersburg, new data on the mineralogy and petrography of the famous Thunder-stone, whose parts serve as the basis for the monument to Peter the Great – the legendary "Bronze Horseman" are presented. When considering the geological documentation for the granite base of the monument, the mineral composition and internal structure of granite was studied, as well as the fragments of pegmatite vein and pegmatite veins found in it. Methods of electron microscopy, electron probe and X-ray phase analysis were used to study 25 mineral samples separated from the surface of the pedestal by available microscopes. It was found that potassium-sodium feldspar in granite is represented by microcline, mica is represented by annite-siderophyllite and muscovite. The accessory minerals are monazite, xenotime, thorite, zircon, rutile, apatite, fluorite, minerals Ti, Nb, Ta, and uranium phosphates. Pegmatites are characterized by topaz. As a result of consideration of the structural and testicular features of four granite blocks, from which the monument pedestal is collected, their mineralogical composition, the chemistry of the main and accessory minerals revealed signs of similarity of this rock with the Precambrian biotite-muscovite granites and topaz-bearing pegmatites (stockworkers) of the late phase of the Vyborg massif of Rapakivi granite. The results of studies are considered as a basis for further geological-mineralogical study of the nature of the Grom-stone and determination of the place of its separation from the root source.





***Stepanov S.Yu., Zhirnov Y.V. New information about "delivery" to the St. Petersburg Mining Cadet Corps of blocks of malachite and corundum and two sets of images for the Cadet Church. Journal of Mining Institute. 2012. Vol. 196, p. 368. https://pmi.spmi.ru/index.php/pmi/article/view/6086.***

**Abstract.** In 1826 in the Mining Cadet Corps in St. Petersburg from town Zlatoust were delivered two unique icons – typesetting images, the background of which was set from a variety of Ural stones. These icons became a subject of historical researches, the results of which are given in this article. The documents, kept in the archives of St. Petersburg and Zlatoust, served as a basis for reconstruction of a history of creation of typesetting images. The article also reflects the history of receipt by the Museum of the Cadet Corps of blocks of malachite and corundum, information about which was found in one of the archival files.

***Petrov D.A., Ryzhkova S.O., Gembitskaya I.M. Rare minerals of noble metals in the collection of the Mining Museum: new data. Journal of Mining Institute. 2022. Vol. 255, p. 493-500. DOI: 10.31897/PMI.2022.42.***

**Abstract.** Modern analytical methods (optical and electron microscopy, X-ray microanalysis) were used to study unique samples of sulfide ores from the Norilsk ore field from the collections of the Mining Museum of St. Petersburg Mining University. Samples containing rare minerals of silver and platinoids (sobolevskite, urvanzevit, sperrylite, argentopentlandite, frudite, cotulskite and others) were studied. The chemical composition, grain size, isolation forms, and mineral associations of more than ten nobodometallic minerals were clarified. The effectiveness of combining different techniques of electron microscopy and X-ray microanalysis to study samples of this type was shown. The results of the work allowed us to obtain high-quality images of rare minerals, to detail information on the museum objects, and to compile their scientific passport. The conducted research showed the relevance of studying museum objects from known deposits of complex genesis and mineral composition in order to find and describe samples with rare minerals.



# Geology (Paleontology)

*The Mining Museum's paleontological collection consistently shows the history of life on Earth from the earliest geological eras and introduces various groups of extinct organisms. The exhibits have been collected in Russia and abroad by renowned paleontologists for many years. The articles in this section tell about the extensive collection of ammonites, brachiopods and other invertebrates.*

***Mikhaylova E.D. Ostracods of Silurian-Devonian boundary deposits of the western Zeravshan Range. Journal of Mining Institute. 1978. Vol. 73(2), p. 37. https://pmi.spmi.ru/index.php/pmi/article/view/11199.***

**Abstract.** FAMILY ROZHDESTVENSKAJITIDAE MS GILL, 1966 GENUS ROZHDESTVENSKAJITES MS GILL, 1966 Rozhdestvenskajites zeravshanensis sp. nov. Tab. I, figs. 4-6 Holotype, No. 1/297, LGI Museum; whole shell; Obi-Saphit section; Upper Silurian, member 11; Tab. 1, fig. 4. Material. 114 specimens; shells and shells of larvae and adults from 13 sites.

***Bezgodova D. V. Attribution of ammonites from Jurassic stratotypic sections of England. Journal of Mining Institute. 2002. Vol. 152, p. 15. https://pmi.spmi.ru/index.php/pmi/article/view/9317.***

**Abstract.** The collection of ammonites from typical sections of the Jurassic system of England is characterized. The collection was assembled in the early 20th century and is stored at the Department of Historical and Dynamic Geology, St. Petersburg Mining Institute. The diagnostics of ammonite forms carried out at the beginning of the 20th century were revised and refined. The collection includes the following specimens: Psilloceras eruatum Phillips (old name Psilloceras planorbis Sow.), Sinemurian, Radstock location; Gleviceros victoris Sow. (old name Oxynoticeras victoris), Sinemurian, Radstock; Androgynoceras capricornus Schl. (Aegoceras capricomis Schl.), Lower Pliensbachian, Charmouth; Echioceras regulare True.-W. (Ophioceras raricostatum Zief.), Lower Lias, Lyme Regis; Acanthopleuroceras valdani

(Aegoceras capricomis Schl.), Lower Pliensbachian, Charmouth; Soninia sp. (Sonninia sp.), Middle Jurassic, Bristol; Witchellia laeviusculata Sow. (Witchellia sp.), upper Lower Bajocian, Bristol; Ludwigia Murchisoni Sow. (Cosmogyria), Lower Aalennian, Bristol; Euaspidoceras ex. gr. perarmalum Sow (Aspidoceras per am atum Sow.), Lower Oxfordian.

***Bezgodova D.V. Representatives of the suborder ammonitina from stratotypic and reference sections of the Jurassic of England, France, and Germany. Journal of Mining Institute. 2003. Vol. 155(2), p. 10. https://pmi.spmi.ru/index.php/pmi/article/view/8988.***

**Abstract.** The collection of ammonites from typical sections of the Jurassic system of Germany, England, and France is characterized. The collection was assembled in the early 20th century and is stored at the St. Petersburg Mining Institute. The diagnostics of ammonite forms is revised. An analysis of the lobate lines is given. The collection includes the following forms: Psilloceras eruatum Phillips; Gleviceros victoris Sow.; Androgynoceras capricornus Schl.; Echioceras regulare True.-W.; Acanthopleuroceras valdani; Soninia sp.; Witchellia laeviusculata Sow.; Ludwigia Murchisoni Sow.; Euaspidoceras ex. gr. perarmatum Sow.

***Tsinkoburova M.G., Bezgodova D.V. Peculiarities of the orthambonites pander – orthis dalman brachiopods complex) from the lost outcrops of Middle Ordovician deposits at the Pulkovka River (Leningrad Region). Journal of Mining Institute. 2015. Vol. 212, p. 72. https://pmi.spmi.ru/index.php/pmi/article/view/5230.***

**Abstract.** The authors reviewed the complex of Middle Ordovician orchiids (brachiopods) from the lost outcrop at the Pulkovka River (Leningrad Region). The source material for the article was a large collection of brachiopods from the collections of the Mining Museum, collected in the 19th century from a series of incisions on the Pulkovka River. The sections were unique outcrops in their stratigraphic range from the Lower Cambrian to the Middle Ordovician. An extensive collection of Early Paleozoic marine invertebrates: brachiopods, cystoids, bolboporitoids, pelecypods, and gastropods was collected from the described sediments. In the middle of the 20th century,





outcrops of the Pulkovka River were lost as a result of landslide processes. The authors identified a complex of 12 Ortidae from this collection. The composition of the complex indicates that the stratigraphic interval from which the brachiopods were collected can be defined as the Volkhov, Kundian, and Azerian horizons of the Middle Ordovician.

*Scientific edition*

**INTERNATIONAL MUSEUM DAY**

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Digest

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