

STONE CUTTING IN THE URALS. ARTICLES OF MASTERS FROM EKATERINBURG IN THE FERSMAN MINERALOGICAL MUSEUM

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A brief history of the Ekaterinburg cutting factory and manufactures of this factory, private works, and artisans from the Urals are described.

20 photos, 20 references

The Urals Stone Belt of Russia, extending for thousands kilometers, was the first that opened its subsoil resources for people in our large country. The Russian stone-cutting art originated from this region nearly 300 years ago.

Everyone who is interested in the art of stone-cutting is familiar with the work of the skilled artisans of the Urals. The modern jewelry products of Russian gem factories are attractive for stone-cutting connoisseurs; appealing and inexpensive sculptures from the Kungur gypsum-selenite and anhydrite deposits gladden the eye of not too wealthy judge; and collectors search antique shops for goods produced by the workshops of A.K. Denisov-Ural'sky and I.N. Lagutyaev. Numerous magnificent articles of the Ekaterinburg stone-cutting factory, which was the pride of Russia's stone-cutting art in the 19th century, are the summit of the stone-cutting art in the Urals and are highly valued within the country and abroad. Undoubtedly, the products of this factory are the finest representatives of the Urals handicrafts, many of which reside in the Fersman Mineralogical Museum.

The Ekaterinburg cutting factory was founded by decree of the Senate on July 24, 1805. However, this was only the formal ratification of its existence. In reality, by this period, the factory had already successfully operated with fine local ornamental stone for many years. The first data on this stone appeared in the middle of the 17th century. In 1668, native Mikhail Tumashev found tourmaline, amethyst, and so called "*tumpasy*" (rock crystal after Mostovenko (1919) or rock crystal and morion after Bobylev (2005)) in the outskirts of the stockade town of Murzinka. Around the same time, Dmitry Tumashev announced about the finding of colored stones near village Murzinka. These stones were white rock crystals, cherry "*fatisy*" (amethyst after Bobylev

(2005) and/or hyacinth after Danilevsky (1948)), green "*yugi*" (chrysolites after Danilevsky (1948)) and yellow tumpasy and two emeralds, three stones with bright-red sparkles and three tumpasy upstream of the Neiva river in a mountain (Semenov, 2001).

The early 18th century, Russia was affirmed as a mighty empire that demanded the corresponding external appearances. Foundation of a new and distinctly well-planned majestic capital built of stone, which was extremely different from the other Russia's towns, had been one its the grandiose goals. This resulted in a necessity for of numerous building and ornamental materials that were practically unknown in Russia at the beginning of the century. The Revel' granite quarries were mined, but they did not play a key role. A special agency responsible for the development of a mining industry had to be created. In 1719, Peter the First established Berg College that had to provide regular exploration and mining of diverse domestic deposits including colored and building stone. At the same time, the state monopoly on mining was constituted (Semenov & Timofeev, 2001).

The Urals was the closest and most encouraging region, where iron and copper ores had been already mined and silver, gold, tin deposits, and gems as byproducts had been prospected. In 1722, the regular mining of malachite in Gumeski was commenced but only for copper (Semenov, 1987); in 1720, diamonds were identified; in 1723, the first marble deposits were found. There were the first attempts to manufacture gems; handicraftsmen had already "touched-up" stones of rock crystals (Shakinko, 1976).

Toward the end of the reign of Peter the First, interest in gems and their processing had become permanent. A project to establish a cutting-stone centre in Tobolsk was initiated but not realized.

In 1721, V.N. Tatishchev, mining chief of the Urals and Siberian works, proposed to build a new plant in the Urals on the Iset' river. According to his intention, therein, not only iron and copper had to be smelted but the finished commodity had to be produced; in the future, stone-cutting and lapidary production were planned at this plant. In 1723, because of the building of this factory, the foundations of Ekaterinburg were laid. In 1726, the small special stone-cutting government workshop was opened. As above mentioned, there were predecessors to this establishment. In 1723, Tatishchev wrote to the Siberian governor: "[I] amuse myself with books and lathe machine. And next summer, I shall cut the local diamonds..." (Semenov & Timofeev, 2001).

To the early 1730s, marble, rock crystal, amethyst, smoky quartz, aquamarine, beryl, tourmaline, and topaz were known in Russia, mostly in the Urals. In Dauria on the Argun' river, jasper was found. In 1735, to process available material, Tatishchev established the first separate lapidary works in the Isetsy plant.

The Swiss craftsmen Ya. Reiner had been invited to teach local workers. However, he had known only techniques of working by hand. Used these methods, the amount of material supplied to the capital was insufficient. In 1747, at the urgently built factory, Russian artificer N. Bakhorev installed a "machine operated by water" to cut marble. The processing of the first large marble block indicated that in cutting by hand, three men had to work for six days (Shakinko, 1976), whereas use of the machine allowed it to be done in 14 hours. Industrial processing of stone had started in Russia.

In 1751, an additional factory to cut hard stones such as agate, jasper and others was established in the Ekaterinburg works. In 1752, there were already three factories and one of them was used for faceting and polishing of stones. In addition, one more similar factory was built in the Siversky works near Ekaterinburg. Thus, an industrial complex for the all-purpose stone processing was established in the Urals. Unique engineering applications were developed. However, the increasing need for decoration of palatial rooms with various stones was still not satisfied due to lack of raw materials.

In 1765, Ekaterina II (Catherine the Great) issued an edict "*On establishment of the Expedition for prospecting of diverse color stones*" to improve the situation. The Expedition was under the leadership of Major General Ya.I. Danneberg, who had played a great role in development of the Urals industry. Numerous deposits, including ornamental stones, were explored during this period. At this time, marble, jasper-tuffite, jasper, chalcidony, perelivt (agate), quartzite, and porphyry were mined in the Urals. For the first time, to classify and estimate materials, rock collections were created that resulted in a necessity to polish hard rocks. Danneberg assured an affiliation of stone-cutting factory to the Expedition for better administration. Thereafter, the Expedition became subordinate to the Chancellery for buildings of Her Majesty of houses and gardens. The Empress became the exclusive owner of gems in Russia and enhanced attention was given to the factory.

Mapping of the colored stone deposits was the remarkable innovation for that time. The first map composed in 1766 was presented together with polished samples to the Empress, for her selection of material.

The 1770s were marked by the appearance of the first goods from hard stone. Initially, there were only pharmaceutical mortars, snuff-boxes, tabletops, and salvers. In 1782, the first bowls from agate and jasper were ordered.

The time of Ekaterina II is notable by the numerous events in cultural life of the capital. The passion for mineralogy was one of them. Mineralogical collection of Cabinet of curiosities was replenished; private collections arose. In 1780–1790, this passion was expressed in terms of the creation at the Ekaterinburg factory of a number of collections as distinctive embellishments of room *dé cor* including pyramids, grottos, and frames of mirrors. These were made from different stones and were accompanied with explanations. Against the background of this interest, the popularity of stone articles, including large ones, was increased. The orders came from the Cabinet of Her Majesty* and private individuals.

In 1784, I.K. Patrushev, manager of the Expedition, reorganized fabrication that had been a step forward for the development of

* The Cabinet of His Imperial Majesty (Cabinet) was established by Peter the Great as his chancellery. In 1832, the Ekaterinburg factory was under the jurisdiction of the Cabinet.

stone-cutting business in Ekaterinburg. In his time, the factory was technically reequipped; novel machines were installed; and the strict stocktaking and sorting of raw material were initiated. The term "rating" of masters and division of labor appeared for the first time. The children of artisans were become getting involved in stone cutting. This resulted in the appearance of many dynasties of the Urals stone-cutters. All these innovations allowed increasing production and the making of large manufactures.

In 1797, by the edict of Pavel I, the Expedition of stone breaking (the name appeared in 1782) was subordinated to the Academy of Arts. This was favorable for a rise in the level of prospecting and stone cutting. In 1880, the President of the Academy of Arts, Count A.S. Stroganov, who made an important contribution to development of Russian art stone cutting, headed the factory. In his time, by diverse innovations, the Expedition turned from industrial stone cutting into the Academy artistic shop of monument-decoration and sculpture art. The highly artistic products were made by individual orders. Designs, but not drawings, created for such projects and alabaster or wood models performed by the famous artist-architects A.N. Voronikhin and K.I. Rossi, made for the most complicated goods. The project development was so careful that even the number of stones recommended by the author was displayed in the design. This led to cost increases, and the funds assignable by the state treasury were insufficient. To increase finances, Stroganov permitted to manufacture small articles, including "...*snuffboxes round, oval salt-cellars, various inkstands, earrings, signets and others, using different kinds of decorative stone*" (Mavrodina, 2000). However, due to lack of money, in addition to public funds of 15,000 rubles, the count paid the remaining needed 5,000 rubles out of his own funds (Semenov & Timofeev, 2001).

The requirement for further development resulted in the opening of the "class for cutting of antiques" attached to the Expedition, where local boys received training in stone cutting. The most gifted children were sent to the Academy of Arts in St. Petersburg. Many of them became top quality masters.

After death of Stroganov, the factory lost its financial support. Strict economy was initiated;

the execution of private orders was forbidden; training in stone cutting was discontinued; despite the fact that most goods were made from hard stone, its mining was nearly curtailed. Curiously enough, these strict measures resulted in much more careful use of colored stone.

The burst of patriotic consciousness in Russia followed the victory over Napoleon was reflected in various arts, including architecture and interior design. Practically all stone-cutting products of this period have a mark of heroism and solemnity.

In the early 19th century, the Kolyvan' factory opened in Altay in 1802 became a serious rival for the Ekaterinburg factory. Therein, the production was based exclusively on the local raw material (jasper, quartzite, and porphyry) mined as giant monoliths. Those were used as a lapidary material for monumental pieces of art. The Urals with its diversity of ornamental stone and the highest professionalism of its masters, were crowded.

The Ekaterinburg factory had to defend its importance by the improvement and reduction in price of articles and perfecting of masters' skills using novel processing techniques. During this period, V.E. Kokovin, the famous Urals master, designed new facilities for stone processing. Shortly, Ya.V. Kokovin, his son, who become the master-in-chief of the factory after death of his father in 1818, had invented the famous machine that facilitated the processing of large products. Soon, this machine was used in Kolyvan' and Peterhof. In 1823, the Cabinet gave an award to Kokovin for this device (Semenov & Timofeev, 2001).

Due to different improvements, the factory began producing large lapidary goods, which were perfect by shape and high-level of master performance. In addition to usual stone cutting, the glyptic and methods of malachite mosaic were applied. Despite the regime of economy, the Cabinet planned radical technical reconstruction of the factory and the erection of new buildings. All predicted prosperity of stone-cutting production in Ekaterinburg, but it had not happened.

In 1830, the event that amazed the world of stone-cutting art in Russia took place and had a regrettable effect on the factory. Maxim Kozhevnikov, a tar extractor, found a few emerald crystals among the roots of a fallen tree and in January, 1831 Ya.V. Kokovin located the

emerald vein. One faceted stone accompanied with the message about the discovery was immediately sent to St. Petersburg. The "emerald rush" began. The Cabinet immediately monopolized mining of this precious stone and entrusted it to the Ekaterinburg factory. As a result, the stone-cutting production was nearly completely turned into mining, and skilful masters for the ornamental stone processing turned into miners.

At the same 1830s, the factory went through one more shock. The abuses permitted by Kokovin, the chief of the factory, who was fine artist, stone-cutter, connoisseur and lover of stone and a graduate of the Academy of Arts in St. Petersburg, had been revealed. The period of his leadership is considered as one of prosperity of stone-cutting art in the Urals. However, the submitted incriminations appeared to be so serious that he was suspended from leadership. The confidential relationship of the Cabinet to the administration of the factory was revised, and the factory was divested of self-dependence and was placed under the direct and absolute authority of the Cabinet. The special "Regulations" ordering the management of production were published to prevent such breaches in the future. A more accurate system of assessment was instituted; carving of the name of the master who had made an article became compulsory; the quality requirements were enhanced. Large pieces were produced only according to projects designed by metropolitan architects, who were outstanding art workers; only small articles were permitted by drawings of local masters. A.I. Lyutin, who had been an assistant of the factory leader since 1839, prepared the numerous drawings of such goods; in 1839, he became a director of the factory.

During this time, a new trend in stone-cutting art was originated at the factory due to effort of Lyutin. Mosaic goods began to be produced and the new techniques for creation of three-dimensional mosaic were assimilated. This original Ekaterinburg art was developed on the basis of Italian Florentine mosaic but instead of plane images, the masters created three-dimensional still lifes from berries, flowers, and leaves and sometimes, humorous subjects with figurines of animals. Mainly, there were "covers on paper" (paperweights). Bowls with fruits appeared to the end of the century. These products became popular and

since 1841, few articles had been produced each year (Semenov & Trofimov, 2003). The special creative period at the Ekaterinburg factory when the stone-cutting art acquired original features and developed simultaneously with the formal traditions was related to Lyutin.

In 1820 – 1840s, the art of malachite mosaic also thrived at the Ekaterinburg factory. During this period, unique goods were manufactured from this material. However, production of expensive large articles gradually declined. This was especially the case after the abolition of serfdom in 1861 when the increasing of remuneration of labor of civilian workers resulted in a significant rise in the cost of goods. The Court began to decline large articles in preference to small cabinet goods. Previously, in 1858, the production of high-priced malachite articles commercially purveyed for the Court was abrogated. After 1873, the factory did not operate with malachite at all (Semenov, 1987).

Fortunately, in the 1860s, the outstanding products of the Ekaterinburg factory were known throughout Europe. In 1851 and 1862, the stone-cutting goods were displayed at the World Fairs in London and in 1867, in Paris. Later, the invitation for the similar fair held in 1873 in Vienna was received. The Cabinet became interested again in large goods, which could amaze Europe. It was planned to produce the bowl from Kalkan jasper for the Vienna Fair. Architect A.I. Krakau developed the project. The work was continued for five years (1868 – 1873) under direct supervision of academician Lyutin.

In Vienna, the bowl made a great impression and was appreciated as the best of Russia's goods, and saved the factory from closing or handing over to private ownership.

The following years, the products of the Ekaterinburg factory were demonstrated at the World Fairs in Chicago (1893), Stockholm (1897), and again in Paris (1900).

In Russia, the products from Ekaterinburg were exhibited in St. Petersburg (1861), Moscow (1865, 1870, and 1882), and Nizhniy Novgorod (1896).

Despite the great success of goods from Ekaterinburg, the end of the 19th century was very stressful and troubled for the factory. Mining and faceting of gems were curtailed; articles from marble, malachite, porphyry, and

jasper were not produced. The Cabinet ordered the large goods mainly from rhodonite and the Kalkan jasper. Most orders were small art things, whereas the large things mainly repeat previous classic forms and ornament that is more complicated. Occasionally, this various ornament with some additions attracted more attention than the stone itself. However, during these years, the unique large articles in which the beauty of stone had been emphasized were produced according to the designs of famous architects, but such sporadic goods shortly disappeared from specification. This was mainly caused by the grandiose and honorable order in 1883 to produce stone ornamentation of two choir icon-cases, the ciborium, and tabernacle in Temple of Ascension that was built at the place of death of Alexander II. The order for the tabernacle in the Cathedral of the Redeemer at the Borki railway station, where the tsarist train crash took place in 1888, was also received. In contrast to the other products of the factory, the various colored stones of the Urals were used for decoration of this temple: various types of jasper, rhodonite, marble, and quartz. The production for the temple was continued till 1916.

During the period from 1885 to 1911, V.V. Mostovenko was the leader of the factory. According to his memoirs (Skurlov, 2001), he received the factory in a state of nearly complete devastation. Due to his energy and resourcefulness, the factory was again put into condition for production. Some new techniques for stone processing, which simplified the production of goods and notably improved working conditions, were initiated. The school for learning in reading and writing, drawing, and modeling was opened again. Methods of stone faceting, etching of stamps, and composition of glues were investigated in the newly established laboratory.

As in the past, the drawings for large goods came from the Cabinet. Occasionally, they were so poor that Mostovenko was permitted to correct them. The models for the numerous small things (cabinet, suite, fancies, and jewels) were elaborated at the factory. These items were supplied in St. Petersburg in abundance.

Despite still being occupied with the order for the temple, the factory was not released from other very important and prestigious orders for exhibitions in Russia and abroad. So,

in 1900, a unique mosaic map of France of 1 x 1 m in size was manufactured for the World's Fair in Paris. Mostovenko suggested the creation of this map and selected the material for its different portions. Diverse semi-precious and precious stones, gold, and platinum were applied. This map had great success, and the Ekaterinburg factory received the highest prize. The map was placed in the Louvre after the Fair and Mostovenko was decorated with the Knight Commander Cross of the Legion of Honour (Skurlov, 2001).

As above mentioned, at this time, the Court ordered mainly small articles. Numerous variegated Easter eggs to be presented to a wide circle of relatives and retainers were needed. According to reminiscences by Mostovenko, it had been the most monotonous work, during which the best color jasper was used up (Skurlov, 2001). At the same time, the Ekaterinburg factory purveyed fine numerous Urals semi-precious and precious stones to the other famous factories and workshops, including the Peterhof Lapidary and company of Faberge.

In 1917, the Ekaterinburg factory was nationalized. At the same time, different plans concerned rearrangement of stone cutting, organization of production of scientific equipment for laboratories and schools to study minerals and rocks, and training of stonecutters and lapidaries. These plans were not realized. A Russian Gems trust was established and the Ekaterinburg factory became one of its departments. The mining and faceting of emeralds was the main target of the factory.

The work at articles with the Soviet symbols had commenced in 1924. The unique mosaic map more than 25 m² in area of the Soviet Union was the greatest product and can never be forgotten. Diverse colored and precious stones including marble, rhodonite, jasper, amazonite, ophite, tuff, quartz, cacholong, opal and lazurite were employed. Meridians were marked with platinum, and Moscow with a ruby star. Emerald, aquamarine, topaz, phenakite, smoky quartz, citrine, almandine, alexandrite, chrysolite, and others (Semanov & Timofeev, 2001) marked the other cities. The map was exhibited at the World Fair in 1937 in Paris, where it received the grand prize and in New York in 1939. For a long time, the map was displayed in the State Hermitage and currently, in Chernyshov Central Research Exploration Museum in St. Petersburg.

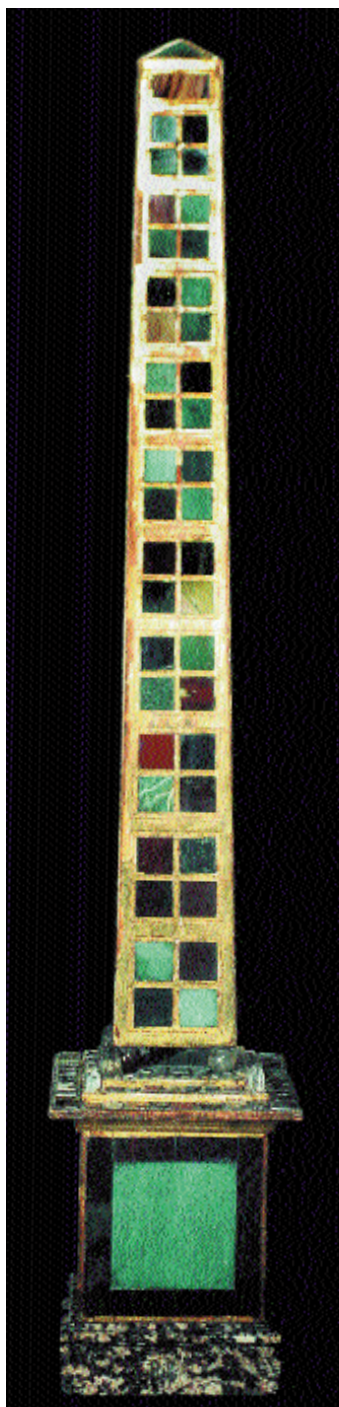


Fig.1. Set of Urals colored stones as a pyramid. Jaspers, chalcedony, quartz. Ekaterinburg cutting factory, 1794–1799. Height is 125 cm. Source and date of receipt are unknown. FMM No PDK-846

Photos to this article are made by Michael Leybov

In the Fersman Mineralogical Museum, Russian Academy of Sciences, goods made at the Ekaterinburg cutting factory had been received from the different state organizations during the 1920s. The activity of the factory during the Soviet period is not described in this paper because the articles manufactured for this time are absent from the Museum collection. Readers, who are interested in the later events related to the factory and its goods, can find information in Semenov & Timofeev (2001).

The small and casual sets of goods produced at the Ekaterinburg factory and stored in the Mineralogical Museum only partially reflect the diversity and magnificence of its articles and the skill of the Urals stonecutters. Nevertheless, there are unique articles in terms of history and art among few museum pieces. In spite of the limited amount of exhibits, the period of their production ranges from the end of 18th to the end of 19th century. Obelisks, bowls, small vases, pencil holders, paperweights, the Easter eggs, and others are among the exhibits. Some of articles are not dated and only by indirect features can they be attributed to any period.

The set of the Urals jaspers as an obelisk-pyramid (Fig. 1) is the earliest article of the Ekaterinburg factory in the Museum. The tetrahedral pyramid slightly convergent upward is based on chalcedony balls mounted on the broader square base. The article is completely faced with polished plates of the various Urals jaspers. On the pyramid, gilded bands separate square plates with scratched numbers corresponding to specific deposits of colored stones of the Urals in "General Description of Deposits" for 1792 – 1796 (Semenov & Timofeev, 2001).

This exhibit has been registered in the Collection of Ornamental and Precious Stones with no. 846 without date and source, but with notice that this article was from the time of Peter the Great. According to this notice, the set was believed to be manufactured at the Peterhof Lapidary that had been opened shortly before the death of Peter the Great. However, at this time, the deposits of jaspers by which the obelisk was faced had been not discovered in the Urals and only glasses were polished in Peterhof. According to research by Semenov and Timofeev, the first sets of the Urals colored stones were made for Ekaterina II in the 1780s, with such sets already including pyramids in 1786. According to these researchers, the pyramid stored in the Mineralogical Museum dates to 1794 – 1799, because numbers of deposits on it correspond to the inventory of 1792 – 1796.

The large obelisk, 195 cm high, from the Fomin marble (grayish yellow with brownish veinlets) produced at the Ekaterinburg factory is stored in the Museum. This obelisk was donated by the Department of non-metal mineral resources of the Commission for study of natural productive forces (CNPF) in 1925.

Since obelisks have been used extensively as park embellishments within the period of the 18th to 20th centuries, there is no basis for any assumptions about the dates of the obelisk production.

The small vase of Kalkan jasper (Fig. 2) is one of the best articles stored in the Museum. It is a square vase with deflected side,

profiled body, and a round bottom decorated with salient stems, and on the expanded downward leg has incurved sides, which is based on the square plinth. In the interior, the vase is also decorated with round rosette carvings on the incurved stems (Fig. 2). "In Ekaterinburg Mast. Kokovin 1828" is engraved on the plinth. A wonderful feature of the vase is its fine metal-like ringing tone during a gentle stroke. The vase was received by the Museum in 1927 from the State Museum Fund.

In 1920s, the Mineralogical Museum was known to make requests to different organizations in Leningrad (the Museum collections were transported to Moscow only in 1934) to deposit stone articles in its collection. Permission was received (December 7, 1926) from the Department of Museums of the Head Commission on Sciences of the National Commissariat of Public Education to issue to the Mineralogical Museum the goods from ornamental stone collected by the Leningrad fund in storerooms of the Gatchina Palace and Stroganov Museum (State Hermitage. File 192, no. 65). According to this permission, the articles listed in two acts by December 13, 1926 and January 8, 1927 were passed to the Museum (State Hermitage. File 192, no. 66).

According to archival documents (Mavrodina, 2000), square vases made according to the drawings of architect I.I. Gal'berg from December 13, 1826 were produced in Ekaterinburg many times from diverse materials and many are displayed in the State Hermitage. The vase stored in the Mineralogical Museum appears to be one of the earliest articles of this variety. According to Semenov and Timofeev (2003), fabrication of it commenced in 1826 and the cost was 1644.63 rubles.

In the Museum, there are excellent vases made from malachite, with the largest one being 75 cm high. If these articles were made at the Ekaterinburg factory, they can be assigned with care to 1830s–1840s. However, the Peterhof Lapidary also produced mosaic malachite articles for a long period. Unfortunately, there are no features which can help to distinguish the products of these two factories. Therefore, it should be confined to the statement of the presence in the Museum of these goods produced from malachite that most visitors associate with the Urals.

The later articles with ascertained dates of manufacturing are assigned to the 1890s. The first of them is the unique rhodonite vase 100 cm high (Fig. 3) cut out from a single block in 1878 at the direction of architect A.I. Valbergh. Round-profiled legs support a high egg-shaped body with two scroll-shaped handles passing into a top terminated by a dome. According to Mavrodina (2000), two pairs of such vases with bases



Fig. 2. Vase from the Kalkan (district of the Kalkan lake, Middle Urals) jasper. Ekaterinburg cutting factory, 1828. Height is 30 cm. FMM No PDK-1610

Fig. 3. Vase. Rhodonite. Ekaterinburg cutting factory; 1893. Received in 1919 from Leningrad City Museum. Height is 100 cm. FMM No PDK-1719





Fig. 4. Pencil holder as stub. Jasper from different deposits in the Urals. Ekaterinburg cutting factory, 1892. Size is 10 x 9.5 x 8 cm. Received from the Gatchina Palace in 1926. FMM No PDK-1782



Fig. 5. Vase. Rhodonite, jasper. Ekaterinburg cutting factory, the end of 19th century (?). Height is 19 cm. Received from V.G. Druzhinin in 1930. FMM No PDK-4146.

of Kalkan jasper were produced at the factory. The first pair was created from 1879 to 1885 (its cost was 28550 rubles, a huge amount at that time). In 1893, the pair was presented to Pope Leo XIII and an additional two identical vases on the bases were then ordered. The work commenced on April 5, 1893. The date of completion is unknown. Currently, one of these vases is exhibited in the George Hall of the State Hermitage (Mavrodina, 2000). The second vase was received by the Mineralogical Museum from the Leningrad City Museum in 1923.

The second exhibit of the 1890s is the amusing article of small plastic art as a hollow stub surrounded by mushrooms and a lizard (Fig. 4). Therein, the variegated Urals jaspers were employed. On its lower part, there are engraved inscriptions in Russian and English: "1892, Russia. The Imperial Ekaterinburg Cutting Factory. Leader V. Mostovenko, 1892". This product was received by the Museum from the Gatchina Palace in 1927. Apparently, this is one of the small articles manufactured in quantity for the Court at the end of the 19th century.

As mentioned above, at the end of the 19th century, rhodonite and Kalkan jasper were the colored stones most frequently used at the Ekaterinburg factory (Semenov & Timofeev, 2001). The combination of these two materials was very popular. Numerous "carved small cups from orlets (rhodonite rock) on the small bases from the Kalkan jasper" appear on the list of articles from 1860s to the early 1890s (Semenov & Timofeev, 2003). The bases of the above-mentioned large rhodonite vases made from Kalkan jasper also indicate this. Based on this, the small rhodonite flat round vase mounted on the octahedral plinth of Kalkan jasper (Fig. 5) is assigned to the products of the Ekaterinburg factory for the last third of the 19th century.

However, there is a description of similar small vases from the State Russian Museum assigned to 1840 (Golomzik, 1983), but the reasons for such dating were not given. In our Museum, the vase was received from a private person in 1930.

In 1926, the State Hermitage transferred to Mineralogical Museum two nephrite vases with bronze handles and two rhodonite plinths. Nephrite and rhodonite articles were registered separately, but with notice that the plinths were appropriated for these vases. The garish color combination did not appear to be appropriate to the Museum workers and the nephrite vases on the rhodonite plinths were never exhibited (Fig. 6).

Publications for the last years stated that nephrite had been combined with rhodonite in the things of the Ekaterinburg factory. So, in 1859, Empress Mariya Alexandrovna received a present the "plinth from orlets..." as additional to her "nephrite cup" (Semenov & Timofeev, 2003). We suppose that Museum stone-cutting exhibits were made at the Ekaterinburg factory. That was in 19th century, but we can't point the dates more exactly.

Two "covers on paper" (blotting paper pads) with berries from colored stones appeared also to be made in Ekaterinburg (Figs. 7, 8). A.I. Golomzik (1983) reported in his book "Rhodonite" two similar products (one of them stored in the Museum of St. Petersburg State Institute, another is private) and dated them to the early 19th century considering them to be articles of the Ekaterinburg artisans. However, as above mentioned, similar covers were typical products of the Ekaterinburg factory over a long period of time and numerous drawings for them were made by Luytin, the outstanding worker of stone-cutting art (Pavlovsky, 1976; Semenov & Timofeev, 2003).

Similar blotting paper pads should be noted also to have been produced at



Fig. 6. Vase (nephrite, Sayan) on plinth (rhodonite, Urals). Late 19th century. Ekaterinburg cutting factory. Total height is 38.5 cm. Transferred by Hermitage in 1926. FMM No PDK-1649, PDK-1650

the Peterhof Lapidary. The described blotting paper pads are attributed to the goods of the Ekaterinburg cutting factory on the basis of practically complete coincidence both of subject and style of performance of the articles stored in the Fersman Mineralogical Museum and reported by Golomzik and identical location of the parts of the general composition with those described by Pavlovsky according to

the drawings by Luytin (colored berries on the black background).

In our case, the still life from berries (Fig. 7) is also on the black marble background and this cover is mounted on the heavy base made from Kalkan jasper. On the other blotting paper pad (Fig. 8), a bunch of grapes from amethyst is also on the base of black marble. One more reason according to which these articles should be



Fig. 7. Paperweight. Jasper, serpentine, rock crystal, cornelian, rhodonite, gypsum-selenite, and marble. Ekaterinburg cutting factory, before 1860. Size is 17 x 11 cm. Gift by A.N. Kupriyanov, 1959. FMM No PDK-4816

Fig. 8. Paperweight. Amethyst, serpentine, ophicalcite, marble. Ekaterinburg cutting factory (?). Size is 6,5 x 10,5 cm. Received from the Stroganov heritage in 1919. FMM No PDK-1138

Fig. 9. Paperweight. Amethyst, nephrite, Korgon porphyry. Ekaterinburg cutting factory (?). Size is 19 x 12 cm. Received from the Stroganov heritage in 1919. FMM No PDK-1062



assigned to the Ekaterinburg factory is the mounting of berries and leaves to the base with mastic rather than metal fids as was done in Peterhof and as later there was ordered to do in the Urals (Pavlovsky, 1976).

The blotting paper pad with berries was presented to the Museum in 1959 by A.I. Kupriyanov, resident of Moscow. According to him, in 1860s, the Siberian manufacturer Mikhailo Petrov gave this article to his grandfather. The second pad with the amethyst bunch of grapes was received from the heritage of Stroganov in 1919.

One more similar pad (Fig. 9) also pertained to Stroganov's family. In this case, the vine from the green Urals jasper with foliage from nephrite and bunch of berries from amethyst are mounted on an octahedral plinth of Korgon (Altai) porphyry. According to the registration book, the "paperweight was manufactured at the Peterhof Lapidary in 1898 for 140 rubles". Since such paperweights have also been produced in Peterhof this note did not give rise to doubt. Information about this article was taken from documents of the Stroganov Palace. At the same time, the vine is mounted on the paperweight with mastic that according to Pavlovsky had been not made in Peterhof. We do not know to what extent this statement is true. Therefore, the problem of the article's origin is not resolved.

It should be noted that similar goods with high-relief mosaic produced by the Peterhof Lapidary were shown at the international exhibition in London in 1851. According to Muntyan (2000), they were considered to be one the wonders of the Crystal Palace and were distinguished by the exact reproduction of reality. The Prince of Wales jokingly wished to eat up the amethyst stick of juicy grapes produced by master Ya. Kokovin.

One more paperweight from the Stroganov heritage is stored in the Museum. This is a specific set of the most abundant and spectacular hard Urals ornamental stones (Fig. 10). The octagonal star composed of diamond-shaped insets made from grayish-green Kalkan jasper is in an octagonal frame from bright pink rhodonite. The rest of the field is filled with rectangular insets from different jasper, agathes, aventurine, and quartz. This variegated composition is in a malachite frame (therein, just one soft stone of the Urals).



Fig. 10. Paperweight. Jasper, rhodonite, quartz, agate, porphyry, malachite and others. Ekaterinburg (?). Size is 16.5 x 11.5 cm. Received from the Stroganov heritage in 1919. FMM No PDK-1112.

This article was received by the Museum in 1919, included in the large collection from the Stroganov Palace. We have no information at all about the workshop wherein this mosaic was produced. Only the selection of Urals stones exclusively, as well as continuous relation of the Stroganov's family with the Urals indicate the probable manufacture of this article in Ekaterinburg (the Imperial factory or artisan workshop).

It should be noted, if the dating of the first of the above-mentioned paperweights (not later than 1860s) is based on the information received from its owner, three others could have been produced at the end of the 19th century both at the factory and by artisans. For example, such articles were displayed at the fairs in Nizhniy Novgorod, Irbit, and other cities in 1879–1880. The cabinet accessories including candelabrum, desk sets, personalized stamps, and other articles were offered to businessmen. The paperweights decorated with filigree sticks of berries were a special appeal of the sets (Dmitriev, 2005). Fersman described in detail the similar artisanal articles from the end of 19th to the early 20th centuries. According to his publications, despite the technical perfection of the artisans, the art importance of these goods was low. Nevertheless, "the cost of the best paperweights with fruits from hard stone reached 500 rubles in 1910", which was a quite high price for that time (Fersman, 1961).

In addition, in the Museum, a few articles received from different sources present the



Fig. 11. Small articles of the Ekaterinburg cutting factory. (a) Vase. Marble. Height is 16 cm. Received from Gatchina Palace in 1926. FMM No PDK-1810. (b) Faceted glass. Rhodonite. Height is 5.5 cm. Received from V.G. Druzhinin in 1930. FMM No PDK-4160. (c) Egg. Malachite. Length is 5 cm. Purchased from V.V. Mostovenko in 1919. FMM No PDK-502. (d) Polished column. Rhodonite. Height is 9.5 cm. Purchased from V.V. Mostovenko in 1919. FMM No PDK-539

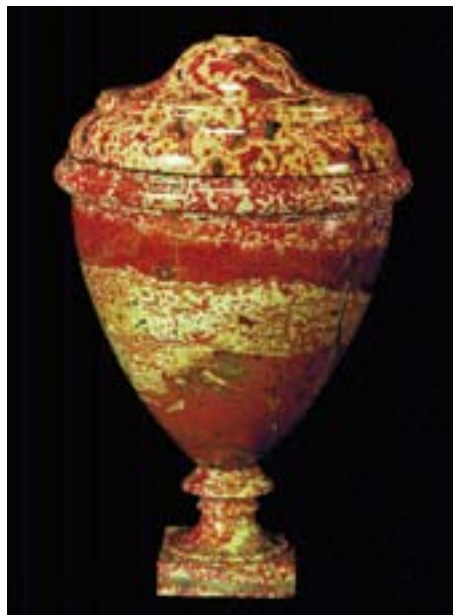


Fig. 12. Vase. Tungotarov jasper (South Urals). Height is 10.5 cm. Received from the Stroganov heritage in 1919. FMM No PDK-1184

Fig. 13. Vase. Amazonite. Ekaterinburg cutting factory. Height is 26.5 cm. Received from the State Hermitage in 1926. FMM No PDK-1633



work of the Ekaterinburg factory. These are a small vase from white marble received from Gatchina, the malachite egg and rhodonite column purchased in 1919 from Mostovenko, and a faceted rhodonite glass received from Druzhinin in 1930 (Fig. 11). Such small articles in quantity were delivered from the Urals.

The small vase of Tungatar jasper (South Urals) displayed in the Museum is included among the similar cabinet articles. A semi-egg-shaped body covered with a broad profiled cap is on the short round stem that is mounted on the square plinth (Fig. 12). It was received from the Stroganov heritage in 1919.

Two hollow amazonite vases with oval bodies (Fig. 13) were received from the Hermitage in 1929. At this time and previously, in Russia, amazonite was known only in the Urals. Therefore, Ekaterinburg is the most probable locality of their production. Goods made from amazonite at the Ekaterinburg factory are known to have been produced since the 1820s. Ekaterinburg is famous for not only the stone-cutting

articles of its cutting factory. Many generations of artisanal stonecutters worked with the varied Urals materials. After the abolition of serfdom, many masters left the Imperial factory. Among them, there were eminent persons. Some of them started as artisans and set up their own workshops, and their shops and were well-known not only in the Urals, but in St. Petersburg. Denisov-Ural'sky, an outstanding artist and stonecutter, was very popular among them. As a gorshchik (this local term means prospector) and artisan by birth, he had an excellent knowledge of the Urals stone, could mine it, and he used it both in natural and processed form, composing usual and decorative collections and creating poured pictures, relief icons, and stone-cutting figurines.

One of the few extant collections as a stone grotto is shown in the Mineralogical Museum (Fig. 14). As above mentioned, collections as rockeries, grottos, and fountains have been produced in the Urals since the times of Ekaterina II.

The grotto by Denisov-Ural'sky was manufactured as an arch, in which is mounted a translucent plate of gypsum-selenite probably simulating an underground waterfall. The grotto is pasted over with crystals and polished pieces of various Urals minerals. Sometimes all minerals of the grotto were with small numbered labels and a list of mineral names with these numbers was supplemented. The grotto is mounted on a malachite base with a label on the lower side indicating that Denisov received a honorary reference from Moscow in 1882 and in 1887 he was decorated with the Greater Silver Medal for pictures, icons, and grottos. In the lower left corner of the label, there is inscription "СПБ" (it means St. Petersburg). Denisov-Ural'sky was known to have a shop at Bol'shaya Morskaya Street in St. Petersburg.

This attractive collection was received from the Gatchina Palace in 1926. Probably, it was used as a visual aid for the tsar's children. As is known, they learned diverse sciences including mineralogy. The catalogue of the miner-

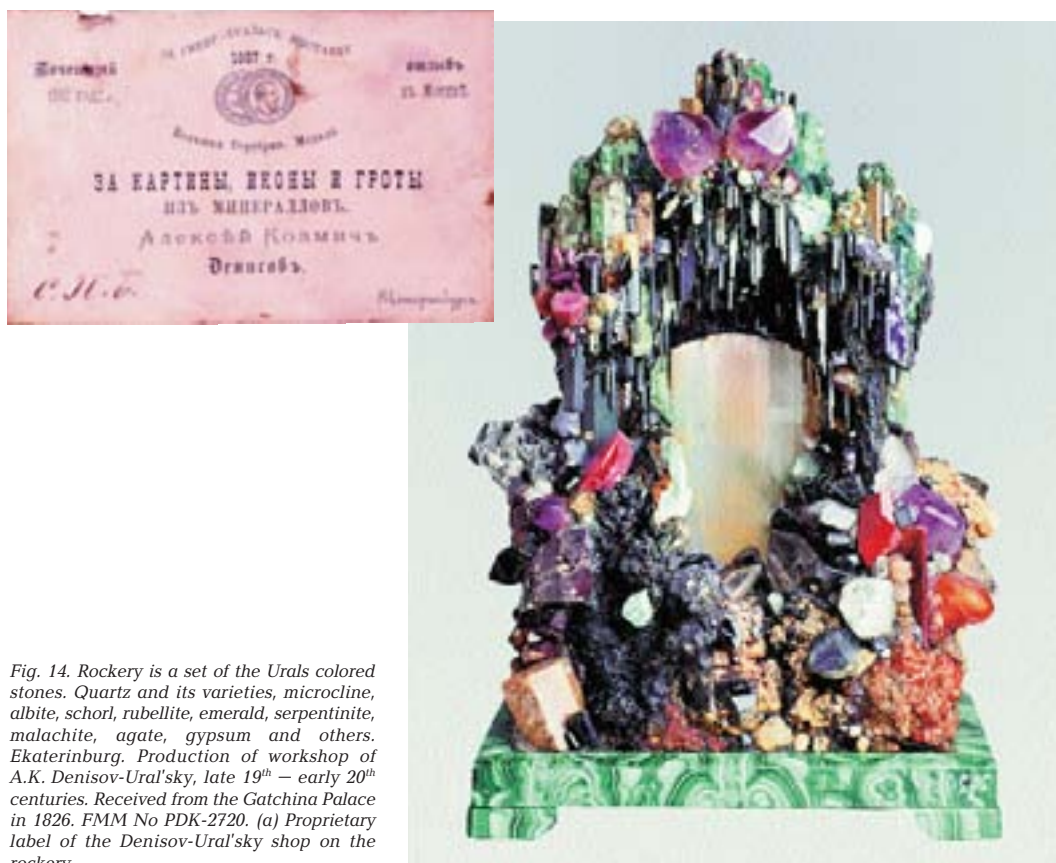


Fig. 14. Rockery is a set of the Urals colored stones. Quartz and its varieties, microcline, albite, schorl, rubellite, emerald, serpentinite, malachite, agate, gypsum and others. Ekaterinburg. Production of workshop of A.K. Denisov-Ural'sky, late 19th – early 20th centuries. Received from the Gatchina Palace in 1826. FMM No PDK-2720. (a) Proprietary label of the Denisov-Ural'sky shop on the rockery



Fig. 15. Donative dish. Jasper, emeralds, rubies, sapphires, beryls, amethysts, alexandrites, demantoids, hessonites and others. Diameter is 32.5 cm. Ekaterinburg. Shop of I.N. Lagutyaev, 1891. Came from Museum of Palace of Arts in 1922. FMM No PDK-2622. (a) Stamp on the proprietary box of the Lagutyaev workshop.

alogical collection of Cesarevitch Nikolay was stored in the Museum and part of the samples from this collection were acquired under supervision of V.V. Nefed'ev, professor of St. Petersburg Mining Institute, the author of the first catalogue of the Mining Museum.

One more interesting article made at the private workshop in Ekaterinburg is a paten on which bread-and-salt was presented to Cesarevitch Nikolay in Orsk when he had returned to St. Petersburg from Japan (Fig. 15). A round dish from the parti-colored Orsk jasper is ornamented with gold with covers from precious stones, which bear the image the crown and monogram of Cesarevitch and the arrival date to Orsk 15.VII.1891. Cesarevitch was late and the solemnity of the presentation took place only on July 24. Prince E.E. Uspensky who accompanied Nikolay wrote: "...the guard of honor was formed up...; therein...the deputation of Cossacks from Novocheerkassk stanitsa with bread-and-salt on the silver paten was placed, then deputies from factorial peasants and Bashkirs also with bread-and-salt: the peasants have presented bread-and-salt on the silver dish, whereas

Bashkirs, on very fine marble paten with inscription, crown, and ornaments being composed of many-colored stones. This paten can be considered as the most elegant" (Uspensky, 1897). Stones from both the Urals and abroad (ruby and sapphire) were applied in the article. The large demantoids, bright colored emeralds, and small alexandrites, which compose the letter "A" in the monogram stand out against the other stones.

The dish was received in 1922 from the Museum of Art Palace in the original red velvet box which bore the manufacturer's mark of the owner of the producing workshop: "Production from the Urals stones by Lagutyaev in Ekaterinburg". The image of two sides of the medal "For diligence and art. 1898" is on the sides of the mark.

Information about workshop of Lagutyaev is very poor. It was established in 1843 (Semenov, 1987) and its goods had appeared to be popular because they were displayed at the exhibitions in Nizhniy Novgorod, Irbit, and St. Petersburg (Semenov, 1987; Dmitriev, 2005). P.P. Bazhov (1976) reported that "sweat for Nurov, Lagutyaev, and Lipin meant faceting of

gems and small articles from colored stone". According to Dmitriev (2005), two Ivans, Stebakov and Lagutyaev, dominated at the stone market in the late 19th century. Many people visited their shops during a fair. Therein, "...specimens and faceted rarities were offered to collectors. Beads, finger-rings, earrings, bracelets, studs, fine caskets, boxes, and poured pictures were offered to devotees of adornments and souvenirs. The "cabinet" accessories..., candelabrum, desk sets, nameplates... were offered to businessmen". In contrast to many other owners of the Urals workshops, Lagutyaev did not own mines but had purchased raw materials. Ten wage laborers worked in his workshop in the early 20th century. In addition, 20–30 artisan-outworkers worked for him (Fersman, 1961).

Currently, we do not know of any other products of the Lagutyaev workshop.

In addition to the already described two articles of the big private workshops in Ekaterinburg, in the Museum, there are products of artisans whose names we have not been able to learn. The artisan production in the Urals was known to be very diverse. Fersman (1961) reported nine specific specialties of artisans in Ekaterinburg among which there had been "signeters" i.e. manufacturers of signets.

A quite large collection of signets received from different sources is stored in the Museum. Part of them was purchased from O.A. Shikhova in 1936 (Fig. 16–18). The correspondence between the Museum and A.S. and O.A. Shikhovs about purchasing and sale of the

stone material was preceding (Shikhovs lived in Ekaterinburg (then Sverdlovsk) that time) (St. Petersburg Branch of Archives, Russian Academy of Sciences). Since the material had been received from dwellers of Ekaterinburg, the signets could be assumed to cut by local masters. Most of them were made from local material including rock crystal, jasper, and rhodonite. Aquamarine from Sherlova Gora in Transbaikalia was applied for one of them (Fig. 16), porphyry from the Kolgon river, Altai, for another (Fig. 17). In Altai, there was lapidary work, which had produced diverse stone articles from huge to the smallest. Therefore, the porphyry signet could have been manufactured far from the Urals. The aquamarine signet can be considered to be from the Urals, because such goods of the Transbaikalia workers are unknown. Aquamarine from Sherlova Gora was delivered for many jewelry and stone-cutting workshops of Russia, including the Urals ones.

One more signet of the Urals masters from rock crystal was received in 1925 from the Commission on Investigation of Natural Productive Forces. It is the article with fourteen facets with zodiacal signs and names of months carved on twelve facets (Fig. 18). Pavlovsky (1976) reported the special subtlety of engraving and accuracy of drawing of such signets.

At the end of 19th to the early 20th centuries, the artisans continued to produce covers of carved berries and fruits on the articles, made from colored stones. Mostovenko, the former director of the Ekaterinburg cutting factory,

Fig. 16. Signets from rock crystal (FMM No PDK-681, FMM No PDK-4249), amethyst (FMM No PDK-4260), aquamarine (FMM No PDK-4263), and heliodor (FMM No PDK-4262). Artisan production, Ekaterinburg (?), late 19th–early 20th century. Purchased from O.A. Shakhova in 1936.

Fig. 17. Signet from the Korgon (Altai) porphyry. Size is 5.5 3.5 cm. Handicraft ware from Ekaterinburg (?). Purchased from O.A. Shakhova in 1936. FMM No PDK-4261



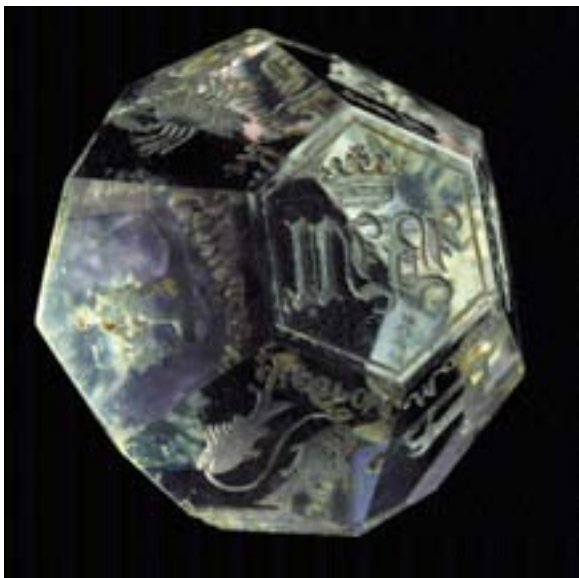


Fig. 18. Signet with zodiacal symbols from rock crystal. Size is 2.5 x 2.4 cm. The product is of the Urals artisans (?). Received from CNPF in 1925. FMM No PDK-2541



Fig. 19. Paperweight (fragments). Microcline, albite, quartz, schorl, cornelian, and serpentinite, Size is 16 x 8.5 cm. The product is of the Urals artisans. Received from V.G. Druzhinin in 1919. FMM No PDK-2621

reported that everything was performed naturally, but general composition had been overloaded. These products were expensive because a lot of work was required to make them. "I have advised for a long time to produce the simplest covers: take a piece of albite and any other fine rocks and drop on it only one branch of raspberry, currants, or others. This will be inexpensive, simple, and nice. Finally, the artisans had followed this advice and these paperweights sold briskly" (Skurlov, 2001).

The similar article of an unknown Urals artisan is stored in the Museum (Fig. 19). The branch of red currants from bright cornelian and small leaf from serpentinite are on a druse of albite and microcline with a few crystals of smoky quartz, schorl, and mica. Here and there, traces of glue are seen on the crystals, but details of the article fell apart before the receipt of this cover by the Museum. The peeled off berries and leaves are attached to the exhibit. However, it is unknown whether they can be attributed to this article. Despite bad preservation, the exhibit provides insight into the nature of such products.

The stone cutting in the Urals also developed in the Soviet Union. A Russian Gems trust was established on the basis of the Ekaterinburg cutting factory; and in 1941, the Urals Jeweller Plant was founded; then, the other stone-cutting and jewelry enterprises supplying and developing stone-cutting and jeweler arts in the Urals were established. New excellent masters known both in Russia and abroad have appeared (Skurlov, 2001; Semenov & Timofeev, 2001). Recently, the artisanal art using both new trends and traditions of the 19th century including tendencies related to Denisov-Ural'sky has been revived. The stone-cutting art based on utilization of the wonderful Urals gypsum-selenite and associated anhydrite is well known.

Unfortunately, the Mineralogical Museum has no articles of the Urals masters from the last 80 years with the exception of selenite and anhydrite figurines deposited in the period from the late 1980s



Fig. 20. Statuettes from gypsum-selenite, Kungur, Perm Region. Sizes are 6.5 cm, 6.1 cm, and 9.8 cm. Products of a Urals stone cutter enterprise, Krasny Yasyl, Perm Region. Purchased by Museum in 1990–1991. FMM, NoNo PDK-7511, PDK-7586, and PDK-7635

to the early 1990s. Generally, these are small figurines of birds and animals (Fig. 20), which are very expressive despite laconic workup. The polished surface of the products without carved details which emphasize the warm golden and cold white luster of silky gypsum. This small collection does not compensate for the absence of goods of the other stone-cutting branches of the Urals, which have not been received for a long time.

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