

## SAMPLES OF MARBLE FLORENTINE MOSAIC AND RUIN MARBLES FROM COLLECTIONS OF THE FERSMAN MINERALOGICAL MUSEUM IN THE KUNSTKAMERA'S MINERAL CATALOGUE (1745)

Daria D. Novgorodova

*IRAS Fersman Mineralogical Museum, RAS, Moscow, dnovgorodova@gmail.com*

According to the descriptions by M.V. Lomonosov, in the Mineral catalogue of the Kunstkamera 1745, there were identified several specimens, kept in the Fersman Mineralogical museum RAS: five slabs of marble Florentine mosaics with pictures of Tuscany landscapes and, less corresponded, seven slabs of Florentine ruin marble, which are the earliest items in the collection of the Mineralogical museum and the first and the only samples attributed according to the Mineral catalogue of the Kunstkamera 1745. The date of acquisition of Dr. Gottwald's collection to the Mineral Cabinet of the Kunstkamera — the present Fersman Mineralogical museum RAS — is re-estimated and refined.

11 figures, 2 tables, 26 references.

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The fundament of the Fersman Mineralogical museum RAS was the Mineral Cabinet of the Kunstkamera. Collection of minerals appeared in the Kunstkamera almost right after its establishment, when Peter the Great acquired the collection of Dr. Christoph Gottwald from Danzig (fig. 1) — Museum Gottwaldianum — which mostly consisted of minerals.

Russian sources (Halls..., 1744, introduction) indicate 1716 as a year of acquisition of the Mineral Cabinet of Dr. Gottwald. Albertus Seba's "collection of animals, birds, serpents, lizards and other curious creatures brought from Ost- and West-India" was acquired in the same year; a year later — the collection of anatomy items, herb and butterflies by "good old Dr. Frederik Ruysch". These three collections became a fundament of the Kunstkamera collection, which contained mostly personal items of Peter the Great, who added to it during his travels to Europe, and anatomical curiosities (Stanyukovich, 1953). In one of the remained catalogues from the Museum Gottwaldianum, of conchological and anatomical collections (Gottwald, 1714), among the handwritten notes by Jean Hermann, scientist from Strasbourg, we see another date of acquisition of the collection by Peter the Great, the earlier — 1714 (fig. 2): "The Gottwald's Museum after his death was sold out, according to the catalogue. The Museum Gottwaldianum was presented at the public auction in Gdansk in 1714... It was purchased by Russian Emperor Peter the Great for 20000 rubles" (Gottwald, 1714). The price that Russian Emperor paid for the "Museum Gott-

waldianum" mentioned twice (20000 rubles and 500 ducats). Possibly, Peter the Great acquired collection of Gottwald the senior (the founder of collection) — for 20 thousand rubles, and his son, Johann Christoph, who added his specimens to the collection — for 500 ducats.

The mentioned here copy of the Museum Gottwaldianum catalogue is kept in the Fund of Jean Hermann L'Universit  Louis Pasteur de Strasbourg. It belonged to remarkable naturalist and medical doctor from Strasbourg, Jean Hermann (1738 — 1800). In 1830 his extensive library (12000 volumes) was sold by his successors to Strasbourg. A part of his book collection, more than 2000 items, is kept in Strasbourg University. Handwritten notes by Hermann, occur on the title pages, margins and sheets of many books and represent a valuable material for science.

The difference in the dates of acquisition of the Gottwald's collection can be explained by an error in one of the sources — librarian Schumacher, who wrote the introduction to the guidebook of the Imperial Library and Kunstkamera (Halls..., 1744), or naturalist Hermann. Or simply by different understanding of the date of acquisition: the collection could be bought in 1714 in Danzig, and brought to St.-Petersburg only two years later.

The catalogue of the Museum Gottwaldianum was published in 1714, therefore the version about the purchase made same year. Such catalogues were printed in large number of copies and, prior to the auction, were sent to various potential buyers — collectors



Fig. 1. Christoph Gottwald (1636–1700), medical doctor and physicist from Danzig. Engraving by Gérard Edelinck (1640 – 1707). (Gottwald, 1714). Fund of Jean Hermann, L'Université Louis Pasteur de Strasbourg. Le Service de la Documentation de l'Université de Strasbourg (UdS).

Fig. 2. Catalogue of the anatomical collection and collection of shells of the Museum Gottwaldianum (Gottwald, 1714). Fund of Jean Hermann, L'Université Louis Pasteur de Strasbourg. Le Service de la Documentation de l'Université de Strasbourg (UdS): a – the title sheet; b – reverse side of the title sheet with the notes about acquisition of the Museum Gottwaldianum by Peter the Great in 1714 (the second paragraph from the top).

of rarities – in different countries (Margócsy, 2010). The Dr. Gottwald's collection was presented at the auction after death of Johann Christoph (1670 – 1713), son and successor of Christoph Gottwald.

Here is one interesting story: one collector from Danzig, Dr. Johann Philipp Breyn (Breyn, Breynius, Johann Philipp, 1680 – 1764) posted the collection catalogue to Hans Sloane to London. Hans Sloane (1660 – 1753) – English medic, naturalist, member of London Royal Society and its long-term president, was the known collector of curiosities and antiques. After his death his unique collection became the fundament of the British Museum. Sloane's interest to the Gottwald's collection reveals the value of the collection and authority and fame of Christoph Gottwald himself. However, despite this interest, the purchase never happened. The catalogue of the Gottwald's collection was delivered to London too late, and by the time when Sloane replied to Breyn asking to buy some items from the collection, the "Museum Gottwaldianum" was already acquired by the agents of Peter the Great, for the first Russian museum – the Kunstkamera Margócsy, 2010, p. 79 – 80). The letter from Sloane to Breyn where he mentioned about this vexing delay is dated 15 March 1714 (Sloane to Breyn, March 15, 1714, Forschungsbibliothek Gotha Chart. A 788, after Margócsy,

2010, p. 80). Therefore, the Gottwald's collection could not be purchased by Peter the Great (or, for Peter the Great) in 1716.

For the Fersman Mineralogical museum RAS, derived from the Mineral Cabinet of Dr. Gottwald, these details are very important and valuable. The history of the Mineralogical museum RAS traditionally estimated since moment of the purchase of the Christoph Gottwald's collection to the Kunstkamera (Sol'skiy, 1961; Barsanov & Kornetova, 1989, Godovikov, 1989), and, according to the data given above, should begin since 1714 and not since 1716.

The study of the Mineral collection of the Kunstkamera was initiated by Johann Gmelin in 1727 (Stanyukovich, 1953), the work on the Mineral catalogue, the first description of the collection – in 1731. This work was finalized by M.V. Lomonosov, and this was his first job at the Academy of Sciences. Gmelin indicated, that when he started working on description of the mineral part of the Kunstkamera, he found it reasonable to compile all the collections (Gmelin, 1954). This was the birth of the Mineral collection of the Kunstkamera. According to the Mineral catalogue, the collection listed approximately 3000 inventory numbers of minerals and ores, partially from Russian deposits.

Academician Gmelin wrote: "The collection of Dr. Gottwald of Danzig was the major,

but not the most remarkable part. There was another collection – one metallurgist from Saxony – the worst one. Then there were various drawers filled with minerals, partially brought from Sweden or Russia. In addition to that there was the mineral collection from brought from duchy Württemberg by Johann Georg Gmelin. Finally one should say about a few minerals brought by Herr Messerschmidt from Siberia (Gmelin, 1954).

Among the significant mineral collections arrived to the Kunstkamera and could be listed in the first catalogue we name the collection of Robert Areskin (1718) – imperial leib-medec, the first keeper of the imperial Kunstkamera and Library, the Cabinet of natural things of Peter the Great (after 1725) the collection of Y.V. Bruce (1735). Besides, mineral specimens could arrive to the Kunstkamera from the overseas, from I.D. Schumacher (according to the documents, he was a "librarian" and, in fact, a director of the Kunstkamera and adviser of the academic Office). By the order of Peter the Great in 1721 – 1722s he visited Germany, Holland, France, England, where he had to get acquainted with libraries and museums, to visit famous scientists, to find the gaps in the

St.-Petersburg collection and to purchase the missing material.

The first master catalogue of all the collection of the Kunstkamera was compiled in Latin and published in 1741 – 1745. It was titled "Musei Imperialis Petropolitani Vol. I – II. 1741 – 1745" (of Petersburg Imperial museum, Volumes 1 – 2. 1741 – 1745). The catalogue consisted of two volumes and included anatomical, botanic, mineral, numismatic collections, collection of arts and rarities and another collections of the Kunstkamera. The catalogue of the Mineral Cabinet of the Kunstkamera, *Catalogus minerarum*, was completed at the end of 1741 and published in 1745. It was included in the third part of the first volume of the catalogue of the Kunstkamera collections (*Musei...*, 1745).

The foreword of the description of minerals in the catalogue 1745 was "*Catalogus minerarum. Cam. PP. QQ. RR. SCRIN. 1 – 16*" (*Musei...*, 1745). Besides making changes in the completed articles (by Gmelin, who described ore minerals, salts and soils), Lomonosov created in full chapters "resins", "ambers", "objects, transformed into stones", "simple and large stones", "marbles", "rock

**Table 1. Florentine mosaics. Marble. Comparison of descriptions of marble mosaics from the Mineral Catalogue by M.V. Lomonosov and items from the Fersman Mineralogical museum RAS**

Latin text from the Mineral Catalogue 1745 (Lomonosov, 1954, p. 26)	Russian ( <i>translated into English – ed.</i> ) text from the Mineral Catalogue 1745 (Lomonosov, 1954, p. 194)	Marble specimens from the Fersman Mineralogical museum RAS. Inventory numbers. Size. * size of the specimens, indicated in the Mineral Catalogue 1745	Numbers on the reverse side
Tabula quadrilatera pedem unicum circiter longa, latitudinis minoris, in qua opere mosaico turris cum aplustri repraesentatur, cum plantatis in vicinia arboribus, in dentrite a natura pictis.	19. Quadrangular slab, nearly one foot long, smaller in its width, with images of a tower with flag and trees, of dendritic origin.	PDK-657 (fig. 3a) 23 x 16.5 cm  * nearly one foot (30 cm)	21, 161, 657
23-30. Novem tabulae minores, prioris dimidium adaequantur, ubi aedificia varia, adstantibus ex dentrite arbusculis, opere mosaico depicta sunt.	22-30. Nine slabs, half size of the previous ones, with images of buildings and trees.	PDK-658 (fig. 3b) 9.5 x 15.5 cm PDK-659 (fig. 3c) 9.5 x 15.5 cm PDK-661 (fig. 3d) 10 x 16 cm PDK-663 (fig. 3e) 9.5 x 15.5 cm	658  659  27-167-661  663
31. Similis et aequalis tabula in semicirculum efformata.	31. The same slab, in a shape of half a circle.	Absent	



Fig. 3. Florentine mosaics from the collection of the Fersman Mineralogical museum RAS. Inventory numbers from the top to the bottom and from the right to the left: PDK-657, PDK-658, PDK-659, PDK-661, PDK-663. Author's photo.

crystals" and "precious stones". According to this catalogue, marbles were placed in the 7<sup>th</sup> locker (SCRIN. VII), and the Mineral Cabinet itself in 1741–1745 occupied three halls in the Kunstkamera – PP, QQ, RR. We can easily find these halls on the exposition plan of the Kunstkamera in 1741 (Halls..., 1741, Tab. 5) – on the first floor of the building.

The numbering of specimens was unique for every part of the catalogue. The chapter "Marbles" it begins with description of ruin (Florentine, by Lomonosov) marble, numbers

1–18. Plaquettes of Florentine mosaics are described in the same chapter "Marbles" under numbers 19–31 (Lomonosov, 1954).

Only five mosaics, described by Lomonosov, remained out of eleven (fig. 3): one large (16.5 x 23 cm) – the picture of a tower with red flag and four small with pictures of Tuscany landscapes (three – 9.5 x 15.5 cm, and one – 10 x 16 cm). Mosaic plaquettes from the Mineralogical museum still have the indexing of the Mineral catalogue of the Kunstkamera: numbers 21 (A tower with

red flag), 26 and 27 (Table 1). However, description of these samples in the Mineral catalogue gives us enough data for their identification: indication of a "tower with red flag" and "trees in dentrite" could not be missed by anyone with knowledge in the collection of the Fersman Mineralogical museum.

There is a question on the dating of the mosaic plaquettes arises, and it is pertinently to give some brief data on Florentine mosaics – one of the most masterly carving techniques.

Florentine mosaics (or, according to its historical name – *pietra dure*) was widely abundant in Italy in Renaissance epoch. This technique can be conditionally named as "stone inlay". Similarly to the wood inlay (marquetry), Florentine mosaics puts multi-coloured decorative stones platelets onto the surface close to each other, in order them to make a picture. In difference to inlay, there is no matrix in *pietra dure*, and pieces of stones are simply get glued to the stone surface.

In difference to the "Roman" mosaics, where small flat square stone platelets are almost equal in shape and size, and "draw" like an artist, in *pietra dure* there are platelets of different sizes and shapes are being packed close to each other. Quite often, contours of the platelets correspond to a shape of some object or part of a picture, along with that, mosaic masters, alike Chinese craftsmen, use the natural ornament of a stone.

Depending on the material being used there are two types of Florentine mosaics: *pietra dure* (when it consists of hard decorative stones) and *pietra tenere* (which consists of "soft" stones). Hardness of marble varies from 2 to 4 by the Mohs' scale, therefore, speaking of marble mosaics, one should use the term *pietra tenere*. Practically, the term *pietra dure* is often used for any Florentine mosaics.

The heyday of the mosaics *pietra dure* is normally related to Florence. When in 1588 the Grand Duke Medici Ferdinand I founded the mosaics workshop *Opificio delle pietre dure* in Florence, he, probably, did not realize that established a famous tradition that would last more than four hundred years. Stone mosaics became such popular, that starting with the XVII century the workshops *pietra dure* appeared in several European countries simultaneously (Koeppel, Giusti, 2008); however the Medici workshops, located in the Uffizi palace galleries, in Florence, were the leaders in the development of *pietra dure* craft. From time to time another workshops

enticed craftsmen from Florence to teach them the skill. The Medici workshops mastered both mosaics and furniture. The orders were coming from the Grand Duke residence and influential European courts.

Ornaments, patterns, pictures of birds, flowers, fruits and, finally, landscapes were the common plots of *pietra dure*, starting from the XVII century. Besides expensive large-scale things, the workshops created small, "card-size" mosaic plaquettes. Quite often they were used as insets in furniture or decorations for cabinets – lockers with many storage drawers.

Cabinets of the Renaissance epoch, decorated with finest silver, ivory, amber and gemstone insets, or engraved with porcelain platelets, were the most desirable objects for European noblemen. However, decoration was not only esthetic but informative.

Cabinet was the collector's treasure of that time. The famous samples, for instance, Augsburg cabinet of master Philipp Heinhöfer, 1625–1631 (MacGregor, 2008, p. 18), gives us impression about this sort of furniture. They were created not only as a storage space, but also as display cases – for demonstrating the collection of rarities. The "Cabinet of curiosities" itself is a locker with the owner's collection; this kind of furniture was popular exactly in the XVII–XVIII centuries – when the passion hobby of collecting rarities and curiosities was flourishing. Such cabinets could be gorgeous, as collection specimen itself – curiosity and rarity. In other cases they used a usual locker for storage, and then its doors were decorated with the curiosities from the collection.

Small plaquettes of Florentine mosaics, which were crafted in the multiple workshops in Florence, were used not only for the furniture and small boxes decoration, but also had their own value.

Marble in the very first collections of the Kunstkamera, according to the "Mineral catalogue" by M.V. Lomonosov (Lomonosov, 1954), is mostly represented by polished slabs (this shows us how the collectors preferred to keep samples of decorative stone). Naturally, Florentine mosaics platelets made of marble fitted such collections. The workshops *pietra dure* were selling both complete items decorated with stone mosaics, and separate mosaic platelets. Any tourist could bring home a set of Florentine plaquettes and either to leave them in his collection of rarities, or to decorate a cabinet with them. Later, in the XVIII–XIX centuries, such plaquettes were

**Table 2. Ruin (Florentine) marble. Comparison of descriptions of marble mosaics from the Mineral Catalogue by M.V. Lomonosov and items from the Fersman Mineralogical museum RAS**

Latin text from the Mineral Catalogue 1745 (Lomonosov, 1954, p. 25)	Russian ( <i>translated into English – ed.</i> ) text from the Mineral Catalogue 1745 (Lomonosov, 1954, p. 193–194)	Marble specimens from the Fersman Mineralogical museum RAS. Inventory numbers. Size. * size of the specimens, indicated in the Mineral Catalogue 1745.
1. Tabula quadrilatera oblonga, ex Marmore Florentino excisa, in quo rupes, rudera et nubes ad vivum depicta conspiciuntur, coloris fuscus et flaventis, ad extremitates ejus lamellae Marmoris candidioris agglutinatae sunt, cancellorum instar. Longitudo ejus dimidium pedem superat, latitudo vix adaequat.	Quadrangular slab, elongated, carved from Florentine marble. It shows naturally rocky mountains, ruined buildings and clouds; colour – dark-yellow. This slab is framed with the thin boards from white marble. The slab is longer than a half feet and almost equal wide.	PDK-2095 (fig. 4a) 13 x 18 cm  *15 x 15 cm
2. Similis tabula minor per medium vena Quarzi tendente divisa.	2. The same slab, slightly smaller than the previous, divided by quartz vein in its middle.	PDK-2096 (fig. 4b) 10 x 21 cm
3. Tabula hujusmodi adhuc minor fuscioris coloris.	3. The same slab, even smaller than the previous and of darker colour.	PDK-662 (fig. 4d) 10.5 x 21 cm
4. Tabula ex Marmore Florentino, ut Nr. 3, confecta, quadrangula, 5 pollices circiter longa, 2 lata, sine marginibus, ex Marmore candidiore.	Slab from Florentine dark marble, similar to that under № 3, square, approximately 5 inches long, two - wide, with no edges and no white marble.	Absent (?)  *5 x 12 cm
5. Simile Marmor iri tabulam ovalem excisum.	The same marble, carved like an oval slab.	Absent (?)
6-9. Quatuor orbiculi ex Marmore Florentino flavente fuscioris diametri bipollicaris.	Four round slabs from Florentine dark-yellow marble, to inches in diameter.	PDK-672 (fig. 4e) 6 cm *5 cm
10-11. Duo orbes majores ex Marmore Florentino flavente dilutioris.	10-11. Two round slabs, bigger than the previous, from Florentine pale-yellow marble.	PDK-4202 (fig. 4f) 5 x 5.7 cm
12-18. Septem tabulae, quatuor circiter pollices longae, 2 latae ex Marmore Florentino fuscioris, ut est Nr. 6, excisae.	12-18. Seven slabs approximately 7 inches long, two – wide, from Florentine dark marble, similar to that under № 6.	PDK-7835 (fig. 4c) 8 x 15 cm PDK-8099 (fig. 4g) 10.5 x 17 cm * 5 x 10 cm

torn out from the old shabby furniture sold at the auctions, and used again for decorating a new cabinet. Such cabinets are known to be from England, France and Germany – decorated with the platelets of Florentine mosaics brought from different places in Italy and Europe in various times. In this case, the researchers can distinguish the age difference of the mosaic decoration and the furniture (Koepppe, Giusti, 2008, p. 91).

Fortunately, we can date the marble mosaics of the Mineral catalogue with much confidence. These very images of Tuscany landscapes were mastered in the Medici workshops *Opificio delle pietre dure* at the end of the XVII century. Remained cabinet in one of the Medici villas (XVIII – XIX century) – the Villa del Poggio Imperiale – enables the scientists to date such mosaic plaquettes the 90s of the XVII century (Koepppe, Giusti, 2008). Also, similar plaquettes occurs in German furniture of the beginning of the XVIII century (Massinelli, 2000, p. 41 – 43, p. 47).

The samples of ruin marble (Table 2) are attributed less definite. The Mineral catalogue describes 18 samples of Florentine (ruin) marble. In the collection of the Fersman Mineralogical museum there are seven slabs with no date or source of acquisition known, and which description matches the description from the Mineral catalogue. However, they bear no old inventory numbers. The descriptions of the slabs (like any other polished sample of ruin marble) are standard and untypical; their sizes do not match those in the Mineral catalogue (except round medallions). The sizes of the mosaic plaquettes also do not match the description, but, nevertheless, this does not make us doubt our definition is correct. Besides, it is known, that misspells and mistakes in sizes in the Mineral catalogue – is not an unusual phenomenon (Lomonosov, 1954, comments, p. 656).

Five slabs of ruin marble, out of seven (FMM №№ PDK-662, PDK-2095, PDK-2096, PDK-7835, PDK-8099) designed in a same way (framed with white marble) and this design clearly matches with the Lomonosov's description in the Mineral catalogue (fig. 4). The rest two samples (small flat discs, №№ PDK-672, PDK-4202) correspond to descriptions and sizes shown in the Mineral catalogue (fig. 4).

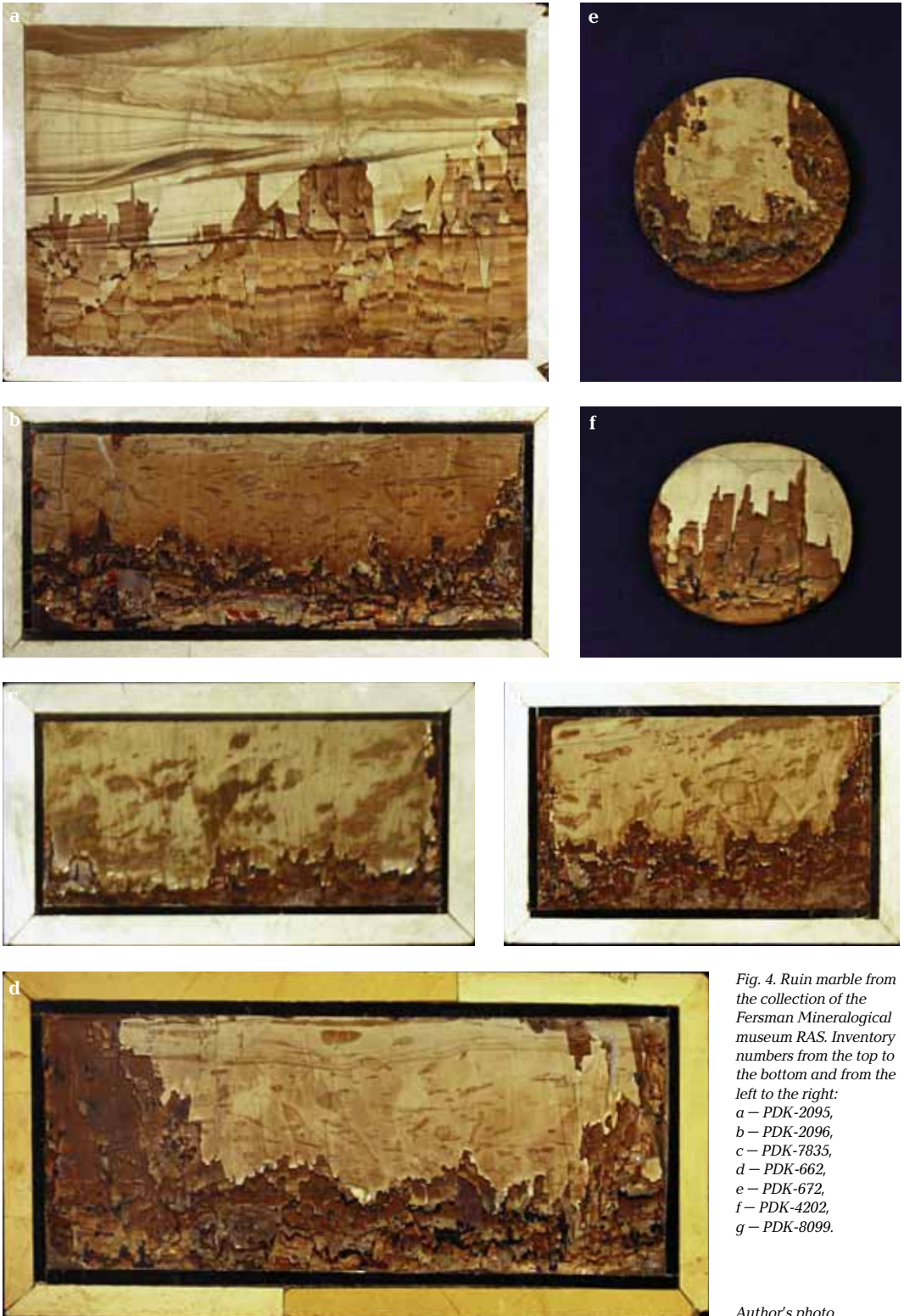
For the sample № PDK-4202 we know the source of acquisition – from V.I. Kryzhanovskiy, in 1936. Besides, edges of this flat

disc were processed with another, more perfect tool, than that used for the disc № PDK-672. However we will note, that rectangular marble plaquettes are also processed carefully, and therefore the disc with jagged edges (№ PDK-672) is out of the series, rather than disc № PDK-4202

Despite the indicated nuance we will leave this sample among the others, before getting the new data, as formally it is almost match this list. The difference of the samples is normal for the cabinets of curiosities (also these discs could be acquired for the Kunstkamera from the different collection). Concerning the time and the source of this acquisition for the Mineralogical museum, which are recorded in the museum inventory, the museum history in Russia experienced even stranger cases (when the old specimens were catalogued in the museum books as purchased from the individual in the XX century) (“Drawn museum”..., 2004).

Another ruin marble samples are not easy to “decrypt” too. We cannot correspond every sample of seven with the only matching description from the Mineral catalogue. However we made an attempt, which results is represented in the Table 2. Besides matching descriptions (and sizes – in two cases), the design of the ruin platelets made us confident: black thin edging and white marble frame. In addition, thin platelets of marble are glued to the solid base – all these not a standard decoration of the ruin marble, but completely matches the design of the marble mosaics described above (doubtlessly matching with those described in the Mineral catalogue). In the museum collection there are other samples of the ruin marble, without frame or background: a platelet from Austria with natural chips on its unpolished edges and almost modern slab from Italy (1980s) – which is considerably thicker and of another design and size.

The important detail is that the decorative slabs of ruin marble reviewed, are made using the technique of Florentine mosaics. Besides composite frames, they have the same background as the marble Florentine slabs described above – solid flaky black slate. In Italy this stone is known as *paragone* (*pietra del paragone*, a touchstone), and was applied as a background for mosaics *pietra dure* in the XVII – XVIII centuries (Koepppe, Giusti, 2008, p. 370). Two samples of Florentine marble reviewed here (FMM, №№ PDK-7835 and PDK-8099) have another background, however it is obviously later museum restoration, as



*Fig. 4. Ruin marble from the collection of the Fersman Mineralogical museum RAS. Inventory numbers from the top to the bottom and from the left to the right: a – PDK-2095, b – PDK-2096, c – PDK-7835, d – PDK-662, e – PDK-672, f – PDK-4202, g – PDK-8099.*

*Author's photo*



light-gray layered marble was never used as a background for mosaics. Sometimes in Florence they used another stone as a background – black Belgian marble, as it was cheaper.

Thus we can assume with confidence, that the samples of Florentine (ruin) marble, described by M.V. Lomonosov in the Mineral catalogue – are those very items catalogued in the Fersman Mineralogical museum RAS collection.

Traditionally, these flat platelets of ruin marble are considered as Florentine mosaics, despite the pattern of ruins in a stone is natural and not made by the artist. Such platelets, "with natural landscape" were massively produced in the mosaics workshops, including Medici Workshops. The museum Opificio delle pietre dure keeps the pair of square panels of Florentine (ruin) marble, which are dated by the XVII century (Koepe, Giusti, 2008, p. 159). Those are framed with wood and were apparently made as a wall decoration. One can tell, that despite the "ruins" observed on the section of the Florentine mosaics is exceptionally natural object, that occurs due to this rock structure, the decorative use of this feature is completely a merit of the carvers and artists, hence this justifies its application in the Florentine mosaics.

Similarly to the mentioned above marble mosaics sample, the plaquettes of ruin marble could be used as insets for furniture or as collectors rarities. We will find various examples of cabinets from the XVII – XVIII centuries, which were decorated with ruin marble plaquettes. The above mentioned Augsburg cabinet (1625 – 1631) was decorated with platelets of ruin marble, these are dissimilar to those described here, but this example shows popularity pietra paesina as a decorative stone in Europe in XVII – XVIII centuries (MacGregor, 2007, p. 18).

In Peter the Great's Kunstkamera the samples of ruin marble were considered as valuable items. Several decades later, after the Mineral catalogue was published, O.P. Belyaev, in his description of the most curious pieces from the different collections of the Kunstkamera, mentioned "several slabs of Florentine marble, where art contributed more into depicting villages and ruined towns than nature", within the collection of the Foreign minerals cabinet (Belyaev, 1800, p. 158).

In the context of the Mineral catalogue, there is a special interest to the materials of the marble plaquettes. Ruin marble (the mod-

ern name of this decorative material), as mentioned above, was described by Lomonosov in the catalogue under name "Florentine". In Italy this stone is known as "pietra paesina" – landscape stone. Strictly speaking, this is not marble, but fine-grained marl limestone with brecciated, displaces and once again harden layers. Different coloration of the various layers creates images resembling landscape forms or ruins.

Italian name of this stone – alberese, originates from the word *albere* – wood, as this rock often contains black manganese inclusions, dendrites, resembling branching plants (Price, 2007, p. 99). Lomonosov in the Mineral catalogue named this stone as "dentrinite", its modern name in Russia – lithography stone. In Italy this rock is considered to be a landscape stone which has three varieties: *alberese* itself – dendritic limestone, ruin marble (Florentine marble, *pietra paesina*) and layered stone from Arno river, *pietra d'Arno*, or *lineato d'Arno* (Koepe, Giusti, 2008, p. 159). These rocks occur in Italy, in Northern Apennines, and were mined since ancient from the river Arno valley. We can find them in many Florentine mosaics of XVII – XVIII centuries (Koepe, Giusti, 2008). It should be said, that the layered stone, *lineato d'Arno*, is the same Florentine ruin marble, the part representing "sky" with distinct layered structure, and not "ruins". The typical pattern of a *lineato d'Arno*, looking alike layered clouds can be seen in the top part of the specimen № PDK-2095 (fig. 4). Here, in one piece of rock there are two patterns – of *pietra paesina* and *lineato d'Arno*. Apparently, geologically strictly speaking, we cannot write about two varieties of a rock. More likely these are two patterns in one rock – Florentine marble.

It is difficult to tell when the first description of ruin marble was made. Some researchers (Serra *et al.*, 2010) consider it was made by the famous scientist-encyclopedist Athanasius Kircher, referring to his work "Underground world" (Amsterdam, 1664 – 65). Others state, that ruin marble was known since the II century BC, and in 1597 is was described by Agostino dell Riccio in his "Istoria delle pietre", with emphasis on its popularity in Florence (Koepe, Giusti, 2008, p. 159).

In the XVII century the interest to a landscape stone increased and spread far away from Florence, and samples of "dentrinites" and "Florentine marble" became almost obligatory for any significant cabinet of

curiosities. One of the stars in the famous cabinet of Ole Worm (which, after his death, became the part of the Dutch Royal Kunstkamera, repeatedly visited by Peter the Great) was the three-dimensional art piece of ruin marble – a miniature globe (Worms, 1665, p. 550). Thus, despite ruin marble can be found not only in Tuscany (it occurs in Austria, Slovakia, Pakistan), it would remain in the world heritage items because of Florentine mosaics and collections of rarities.

Concerning *pietra paesina* (or “dentrite”), besides Italy, similar stone was mined in Germany for a long time; it is known to be “Solnhofen marble”. This is fine-grained limestone with dendritic inclusions.

Deposits of Solnhofen marbled limestone are located within the outskirts of Solnhofen town (Mittelfranken), in the region famous by deposits of marbled “Jurassic marble” limestone.

Probably, these names – “dentrite” (Kircher, 1664, T.1, p. 31), “albarese” (in Italy) and “Solnhofen marble” in Germany (Wirsing, 1775) – co-existed for a long time.

In his remarkable work devoted to mineralogy of Italy, Swedish mineralogist Johann Jacob Ferber describes “dentrite” as *albarese*. Ferber explained the names of Italian ornamental stones: “This marble (dentrite) is not homogeneous, but brought to life with finest and thinnest layers of solid limestone, usually gray, and is accompanied with multiple dendrites... Its name is *Alberese*, *Alberene* or *Albazzano*. Florentine marble, showing ruins, is also called *marmo Paesino*. Landscape marble and that with dendrites is called *Alberino*” (Ferber, 1776, c. 112).

Today, “Solnhofen marble” is a popular decorative material. Besides architecture, due to its fine-grained structure, it can be applied in lithography, therefore its common name in Russia – “lithography stone”.

Description of a landscape stone, or “dentrite”, was placed by Lomonosov into two chapters of the Mineral catalogue: “Marbles” and “Objects, transformed into stone”. We can conclude from Lomonosov’s descriptions, that he called “dentrite” both landscape stone and petrified wood. Now we know of course, that “woods” in a landscape marble are crystalline objects with branching structure, manganese oxides and not petrified plants.

Johann Gmelin explained the conditional name marble for a limestone, in his “A remark, necessary for understanding of the mineral catalogues” – the paper he wrote

after he started with the Mineral catalogue of the Kunstkamera. He specially indicated, that “marbles are only those stones which, besides their usual features have the ability to be processed by metal” – i.e. can be polished (Gmelin, 1954). This approach is being practiced by now – many kinds of limestone and other rocks, which can be polished, are named “marble” (even though it can be geologically wrong).

Mosaic slabs with Toscana landscapes are represented by traditional Florentine *pietra tenera*. All the five mosaics contain “landscape” stone (“dentrite” from the Mineral catalogue, Solnhofen marble) and ruin marble (“Florentine” by Lomonosov, majority of scientists from XVII–XVIII centuries and many modern sources). In general, ruin marble is used for mosaics quite often – both as a basis for painting and as a natural landscape, or as mixed yellowish-brownish stone.

It is interesting to mention, that the large mosaics “A tower with red flag” is framed with reddish marble breccia *Brocatello d’Espagna* (fig. 3). Researchers note, that this bright marble from Tortosa (Catalonia, Spain) was very popular in Spain and Italy since 16<sup>th</sup> century. It was used in architecture; the most famous examples – cathedrals in Tortosa and Naples. This stone was used for mosaics as well, especially in Florentine *Opificio delle pietre dure*, mosaics workshops of Medici – the place where the history of Florentine mosaics began (Price, 2007, p. 164).

The question about the source of these marble samples, described by M.V. Lomonosov in the Mineral catalogue of the Kunstkamera, is still open. Plaquettes of ruin marble and Florentine mosaics could have arrived from various collections – Gottwald, Bruce, Areskin, Peter the Great and others. On other hand, the material and the making of these slabs quite clearly indicate, that their origin is Florence.

Briefly, the results of this investigation are the following. The date of acquisition of the Dr. Gottwalds collection – the fundament of the Mineral Cabinet of the Kunstkamera and later, of the Fersman Mineralogical museum RAS – was specified. The history of the Mineralogical museum of the Academy of Science is traditionally estimated since acquisition of Christoph Gottwald’s collection to the Kunstkamera, and obviously, this date is 1714.

According to the descriptions of marbles from the Mineral catalogue, by M.V. Lomonosov, we identified several items kept in the

Fersman Mineralogical museum RAS collection: five marble slabs with Toscana landscapes in Florentine mosaics technique, and, less corresponded; seven slabs of Florentine ruin marble.

This attribution enables to list these marble mosaics and slabs of ruin marble from the Lomonosov's Mineral catalogue along with another mosaics from the Mineralogical museum. The stone mosaics is widely represented in the Fersman Mineralogical museum (Chistyakova, 2009). The small amount of specimens comprehend almost all known kinds of this arts&crafts: Roman, Florentine (pietra dure, solid rock mosaics), Russian and even three-dimensional. Marble mosaic and ruin marble slabs, discussed here, are the earliest samples of Florentine mosaics in the collection of the Fersman Mineralogical museum. Besides, these pieces belong to the earliest mineralogical collections in Russia, described by M.V. Lomonosov in the Mineral catalogue of the Kunstkamera and the only items from the Mineral catalogue which had been identified in the collection of the Mineralogical Museum RAS.

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