

Afghan Gasimzade

Institute of Archeology, Ethnography and Anthropology Azerbaijan National Academy of Science (Baku, Azerbaijan)

Construction Ceramics of Gabala XI-XIII Centuries

The article deals with the construction ceramics of Gabala in the XI-XIII centuries, including samples of tiles, bricks, tiles, pottery pipes and their main characteristics. Typological and analytical methods were used to study the samples found during the research, and the information and materials obtained from the archeological research reports were thoroughly analyzed by comparison.

Construction ceramics has not been a separate field of research in the medieval city of Gabala, which has a special place in Azerbaijani historiography. Therefore, the relevance of the article is to determine the current state of construction ceramics for the period, the general level of development of the art of construction and the main characteristics.

It is important to study the technology of making tiles used in the roofing of buildings, bricks used in masonry, tiles used to decorate the walls and pottery pipes used in the construction of water lines in the city, their shape and size.

If we look at the shape of the tiles, most of the patterns have a protrusion in the middle. Bricks were widely used in construction because they were cheaper. The main raw material for making bricks was clay. The abundance of clay deposits in the ancient city of Gabala created ample conditions for the production of bricks here. It is noteworthy that during archeological excavations in Gabala in 2009, two bathrooms were discovered. One of the rooms was replaced by baked bricks and the other by pottery.

In the XI-XIII centuries, tiles were widely used by craftsmen as a decorative material in construction. Tiles were mainly used in mosques, baths, palaces and other public buildings. Floral drawings were also made on the tiles of different colors. Such images gave a new shape to the appearance of the building.

In Gabala, pottery was widely used in the construction ceramics of the time for the construction of water lines. The use of a potter's wheel by craftsmen in the manufacture of pottery and the perfect development of water pipes was a great achievement. When the pipeline was laid, the pipes were fastened to each other with lime mortar. The pottery pipes, one of which was inserted into the other, were durable and did not leak water.

Keywords: *Gabala, Archeological Excavation, Clay, Tile, Brick, Water Pipe*

Афган Гасимзаде

Інститут археології, етнографії та антропології Національної академії наук Азербайджану (Баку, Азербайджан)

Будівельні кераміки Габали XI-XIII століть

У статті розглядається будівельна кераміка Габали XI-XIII століть, включаючи зразки кахлів, цегли, черепиці, гончарних труб та їх основні характеристики. Для вивчення зразків, знайдених у ході дослідження, використовувалися типологічні та аналітичні методи, а інформація та матеріали, одержані зі звітів археологічних досліджень, були ретельно проаналізовані шляхом порівняння.

Будівельна кераміка не була окремою областю досліджень у середньовічному місті Габала, яке посідає особливе місце в азербайджанській історіографії. Тому актуальність статті полягає у визначенні сучасного стану будівельної кераміки за період, загального рівня розвитку будівельного мистецтва та основних характеристик.

Важливо вивчити технологію виготовлення черепиці, що використовується для покрівлі будівель, цегли, що використовується в кладці, плитки, що використовується для прикраси стін, та гончарних труб, що використовуються при будівництві водопроводів у місті, їх форми та розмірів.

Якщо ми подивимося на форму плитки, більшість візерунків мають виступ посередині. У будівництві широко застосовувалися цеглини, оскільки вони були дешевшими. Основною сировиною для виготовлення цегли була глина. Велика кількість покладів глини в стародавньому місті Габала створили тут цілком достатні умови для виробництва цегли. Примітно, що при археологічних розкопках у Габалі у 2009 році було виявлено дві ванні кімнати. Одна з кімнат була замінена обпаленою цеглою, а інша – гончарною.

У XI-XIII століттях кахлі широко використовувалися майстрами як декоративний матеріал у будівництві. Плитка здебільшого використовувалася у мечетях, лазнях, палацах та інших громадських будівлях. Квіткові малюнки були виконані на плитці різного кольору. Такі зображення надали вигляду будівлі нової форми.



У Габалі кераміка широко використовувалася в будівельній кераміці для будівництва водопроводів. Використання гончарного кола майстрами у виробництві гончарних виробів та досконалий розвиток водопровідних труб було великим досягненням. При прокладанні трубопроводу труби скріплювали між собою вапняним розчином. Гончарні труби, одна з яких вставлялася до іншої, були міцними і не пропускали воду.

Ключові слова: Габала, археологічні розкопки, глина, черепиця, цегла, водопровід

Introduction

Both ancient and medieval architectural monuments in the territory of Azerbaijan are one of the main sources for studying the main features of the ancient art of construction of our people. The richness of clay, lime, various types of stone, gypsum, wood and other resources used in the construction industry also allowed for the development of the art of construction.

It should be noted that since the IX century, due to the development of productive forces, medieval cities began to develop. This development gradually allowed cities to become centers of crafts and trade. From this period, along with Ganja, Beylagan, Barda, Shamakhi, Nakhchivan, Derbent, Shabran, Baku and other medieval cities in Azerbaijan, the city of Gabala gradually developed and experienced its renaissance in the XI-XIII centuries.

Archaeological study of ancient and medieval cities and architectural monuments of Azerbaijan began in 1945 after the Second World War. There are rich materials on the history of architecture in the works of I. Jafarzade, S. Gaziyeu, I. Shebliki, R. Vahidov, G. Ahmadov and other researchers. These materials were widely used in the preparation of the collection "Architectural monuments of Azerbaijan", published in 1952. (Mammadzada, 1978, pp. 7-8).

Construction ceramics mainly refer to baked bricks, tiles, water pipes and tiles. Archaeological excavations have uncovered examples of this, along with Gabala and other medieval settlements in Azerbaijan.

Compared to the medieval cities of neighboring Georgia, Azerbaijan's construction ceramics seem to have certain similarities and differences. So that, two main groups of ceramics identified as a result of archeological excavations carried out at the sites of various buildings in the city of Dmanisi are distinguished from each other: 1. Construction and utility ceramics. 2. Ceramic dishes (general and household). Different clays were used in the production of ceramics belonging to both groups. Fine clay was used to make construction and utility

ceramics, and relatively oily plastic clay was used for household ceramics (Maysuradze, 1954, pp. 10-11).

It should be noted that baked bricks and tiles have been used in construction in Azerbaijan since ancient times. According to experts, the production of tiles in ancient Albania (Albania – is the name of a medieval feudal state that existed in the territory of the Republic of Azerbaijan from the 4th century BC to the 8th century AD) began during the Hellenistic period. Flat, grooved and double-sided tiles with a length of 75 sm were found in Gabala 2300 years ago. In the later stages of the Middle Ages, the size of baked bricks (19-22x19-22x4,5-5 sm) was significantly reduced. Kashi is first found as a building material in medieval architectural monuments of Azerbaijan (Mustafayev, 2009, p.115).

The purpose of the research

To study in detail the construction ceramics of Gabala XI-XIII centuries and to determine its main characteristics. In this regard, the article provides a detailed analysis of archeological materials, as well as a general overview of the art, economic and social life of the city.

The Result of the research

In the XI-XIII centuries, in the construction ceramics of the city of Gabala, tiles were mainly used on the roofs of buildings. The tiles not only looked neat, but also protected the building from rain, snow, and sunlight, and were more durable.

When the tiles were covered on the building, their narrow side was laid on the wide side, and they were laid side by side in this sequence. Then they were covered with convex or semi-cylindrical tiles to prevent rain and snow. The length of the triangular tiles, which are wide on one side and gradually narrowing on the other, is 35 sm. These types of tiles with a width of 18 sm, a narrow side of 12 sm and a height of 10 sm are reminiscent of a triangular tile (Mammadzada, 1978, pp. 14-15).

During the preparation of the tiles, special attention was paid to their appearance, and a trough was installed for water flow. During the

next archeological excavations carried out in 2011-2012 in the Gala area of the ancient city of Gabala under the leadership of archaeologist G. J. Jabiyev, a large number of tile samples were discovered and studied. These studies are of great importance in terms of determining the main characteristics of the tiles of the XI-XIII centuries. This tile fragment (Picture 1) belongs to the XI-XII centuries from the chronological point of view, its thickness is 2, and the length of the surviving part is 22 sm (Gabala Archeological Expedition, 2013, p. 251). As you can see, the tile is relatively thick, which makes it durable and long-lasting.



Picture 1

In the XI-XIII centuries, along with Azerbaijan, construction was observed in the medieval cities of Europe and Asia. We determine the intensification of residential construction in the 13th century based on samples found during excavations in Kherson, Old Kermen, Mangup and other settlements. The demand for construction created conditions for the production of building ceramics, primarily roof tiles. The shape of the roofs remained the same. Flat roofs (tiles) were used, and semicircular roofs (calipers) were used to cover their joints. Dimensions are 32X36X36-42 sm. However, samples with a size of 34X36X40-42 sm are more common. The roofing material differs significantly. They are light red and yellowish (Yakobson, 1979, p. 147). As can be seen, in terms of use and color, these tiles are similar to the medieval tiles of Azerbaijan, including Gabala.

We see the protrusion in the middle part of the tiles in almost all the examples found in Gabala. (Picture 2). This tile pattern belongs chronologically to the XI-XIII centuries. As for the size, the diameter of the mouth is 13 and the thickness is 2 sm (Yakobson, 1979, p. 256).



Picture 2

A. L. Jacobson, a prominent researcher on the painting of some tile samples, notes that the image on the roof itself is not an ornament, it does not decorate the roof, because it is not visible from below. It is likely that these signs – defender, warrior, birds, roosters, eagles, pigeons, etc., depicted in the sun has a protective character (Yakobson, 1979, p. 153).

The samples we found during the 2013 excavations in the castle area (Picture 3, findings 188) date back to the 12th century. These samples are 36.5 sm long, 32 sm wide in the wide part, 26 sm wide in the narrow part and 5 mm thick (Gabala Archeological Expedition: Reports, Discoveries, 2013, p. 267). Three of these 5 tile samples were found in good condition and two in semi-healthy condition.



Picture 3

It is known that clay is the main raw material for making quality bricks. Due to its low cost and simplicity of preparation methods, clay is widely used in construction as the main building material. Baked bricks have a special place among building materials due to their relative cheapness and ubiquity. Due to its natural color, it gives the wall a painting character. Baked brick, which is the main type of building ceramics, has been produced in Azerbaijan mainly since the VIII century. Baked brick, the main building material of most monuments in Azerbaijani architecture, has been widely used since the 10th century. In medieval buildings in Gabala, mainly low-thickness square bricks

are widespread. In general, square baked bricks were used in ancient Asia in ancient times. The pink and dark red color of the brick indicates its good baking (Mammadzada, 1978, p. 13, p. 89).

No samples of baked bricks were found in the areas where ancient tiles were found in Gabala and in the area of the temple covered with tiles in Mingachevir. However, I. A. Babayev attributed several examples of baked bricks found in Gabala (Jackal) to the first century. The dimensions of these bricks are 39X39X5 sm, 35X35X4,8 sm and 46X63X3,5 sm. These are still considered to be the oldest and largest examples of baked bricks found in Albania (Albania – is the name of a medieval feudal state that existed in the territory of the Republic of Azerbaijan from the 4th century BC to the 8th century AD) (Jabiyev, 2018, p. 256). Professor Gafar Jabiyev suggests that these samples were used not as a wall masonry, but as a coating.

It should be noted that the brick brand has been widespread not only in Azerbaijan, but also in Russia since ancient times. Certain figures are known about the quantity of brick production of 12th century urban craftsmen. These bricks are distinguished by their closeness to the bricks of the XIII-XV centuries in Bulgaria. Their dimensions are 22x22x4 sm. Researchers attribute this more to the construction techniques of the Red Horde. Such bricks are rare in Moscow (Rabinovich, 1949, pp. 96-97).

Archaeological excavations in Gabala have revealed a large number of brick samples, as well as masonry and wall remain. During excavations in 2009, for the first time in Gabala, two bathrooms were discovered and studied in close proximity to each other. The place of one of these rooms is paved with baked bricks, and the place of the other is paved with specially made pottery tiles (Reports of the Gabala, 2012, p. 355).

The brick fragment presented (Picture 4) is 5 sm thick and 18 sm long (Gabala Archeological Expedition, 2013, p. 259). The brick is decorated with carved patterns that perform a decorative function.



Picture 4

Although this brick pattern is not complete, but based on the pattern, it can be noted that the decoration looks like a star. Brick also attracts attention with its thickness, which increased its durability. As for the patterns on the bricks, some of these patterns were cast in a mold, and some were later carved with a sharp object. It is not accidental that during the excavations samples of molds were found (Reports of the Gabala, 2014, p. 289).

Researcher E. Maysuradze notes on the quality of bricks and roofing those well-baked bricks placed closer to the fire in the hearth are stronger and more durable, while the quality of the bricks outside is relatively poor. Roofing is made of more plastic clay than brick, its clay is fine, there is little or no sand and stone. This situation gives them mechanical strength during the baking of roofing (Maysuradze, 1954, p. 11).

In the XI-XIII centuries, tiles were widely used in construction as a decorative and construction material. In the XII century, the extensive development of the production of ceramics in Azerbaijan allowed the use of glazed tiles in wall coverings. The closeness of the coefficients of thermal expansion of the pottery with the lion's solution plays an important role in the strength of the tile (Mammadzada, 1978, pp. 96-97).

Tiles are mainly used in the field of architecture in mosques, baths, palaces, etc. in many cities of Azerbaijan used in places. Tiles used in the artistic design of Azerbaijani architectural monuments are divided into two major groups according to their shape:

1. Rectangular tiles, usually used as a border in friezes.
2. An octagonal star covering the wide part of the wall with a carpet and cross-shaped tiles filling the interstellar spaces (Efendi, 2007, p. 69).

Tiles painted in white, green, turquoise and blue were also decorated with various floral images.

The type of glazed ceramics called tiles has been widely used in Azerbaijani architecture since the 11th century (Salamzada, Rzayev, & Karimov, 1977, p. 47).

Tile samples were also found during excavations in Gabala in 2013 (Picture 5).



Picture 5

The diameter of the first tile was 3,8x4 and the thickness was 1,5 sm, and the diameter of the second tile sample was also 3,8x4 and the thickness was 1,3 sm. The tiles are light blue. They were mainly used to decorate colored walls (Gabala Archeological Expedition, 2015, p. 109, p. 267).

Prominent researcher of medieval cities of Azerbaijan, professor G. M. Ahmadov points out that medieval Azerbaijani cities were supplied with water in various ways. In the mountainous regions, water was brought from the rivers or springs near the city through ditches, canals, and pottery tunnels (Ahmadov, 1989, p. 50).

During recent archeological excavations in Ganja, Barda, Baku, Nakhchivan, Gabala and other medieval cities, a large number of pottery tunnels related to the city's water supply and sewerage systems have been discovered and studied.

Pottery tunnels were mainly used in the construction of sewer lines due to the city's water supply and sanitation. The construction of pottery belts began in the more developed Middle Ages. The use of a potter's wheel further increased the production of pottery. Tungs were made of mineral clay and baked in a sphere after being shaped. When the belt was laid, the narrow side of the tongs was worn on the wide side, and the place was firmly plastered with lime mortar (Farhadoglu, 2006, p. 223).

The water pipes discovered in Gabala during the excavations, as well as the system

of sanitary facilities, show that in the XI-XIII centuries the city was well supplied with water, and craftsmen applied new technologies using pottery pipes to draw and distribute water to settlements. Pottery pipes were also used in various sectors of the economy in connection with the daily needs of the population.

It should be noted that in 1977, during archeological excavations in the Salbir part of Gabala, the remains of a water pipe made of clay tunnels were found. The length of the pipeline is 1,5 m. It was found under a floor made of large and square baked bricks. The length of the tunnels is 43, the diameter of the mouth is 15 sm on the wide side and 11 sm on the narrow side (Gasimov, 2002, p. 91).

The fragment, which consists of the thin side of the water tunnel (Picture 6), was discovered during excavations in the territory of Gabala in 2009 and chronologically belongs to the XIII-XIV centuries (Gabala Archeological Expedition, 2011, p. 178). As you can see, the water well is very well made and neatly designed on both sides to connect the pipes, with circular protrusions. These examples show that masters are already professionals in this field. At the same time, the large number of water holes suggests that the water is already drawn over long distances.



Picture 6

As a result of research, it was determined that the laid water pipelines were not laid along one line, but were connected by highly professionally constructed water lines, as well as the presence of a four-row water pipeline (Reports of the Gabala, 2012, p. 346).



Picture 7

The four-row water pipes presented (Picture 7) consist of earthenware pipes, laid at intervals, not on top of each other. The edges of the pipes are neatly aligned, and the pipes are parallel in a straight line from bottom to top, in the same direction. This suggests that these water lines were discharged to a collection point and then distributed to the population.

During archeological excavations in the castle in 2009, two bathrooms were discovered and studied for the first time in Gabala. One of them is paved with baked bricks, and the other is paved with specially made pottery. One of the pottery slabs was 47 sm wide, 48 sm long and 4 sm thick. The large pottery tiles found here were found for the first time in the territory of Azerbaijan. A special sambo well was found near both baths for sewage disposal (Reports of the Gabala, 2012, p. 355, p. 372). The baths were mainly used by the wealthy sections of the city.

Conclusion

It is known that Gabala has long been the capital of the Albanian state, (Albania – is the name of a medieval feudal state that existed in the territory of the Republic of Azerbaijan from the 4th century BC to the 8th century AD) which has played an important role in the history of Azerbaijani statehood. Economic and social development in the city in the early Middle Ages entered a new stage in the XI-XIII centuries. Along with the growing economic and political importance of the city, trade and crafts also developed. Along with other medieval cities, Gabala also made progress in the technology of making pottery and building materials during the period under study.

During the production of tiles, bricks, and pottery, which are the main building materials, special attention was paid to their appearance. During the examination of the samples, it was determined that they are both high-quality and well-cooked without pores, and the outer surface

is smooth. The gutters on the tiles helped the water to flow more easily, and the ledges helped to secure the tiles to the structure.

Although baked bricks were produced in Azerbaijan in the 8th century, baked bricks were widely used in construction in the 11th and 13th centuries. Low-thickness, square-shaped bricks were more common. The presence of colored bricks at night was an indication of its good cooking. Some of the patterns on the bricks were cast in molds, and some were scratched with a sharp object. Of particular interest is the drawing of a star-like image on the brick samples found during archeological excavations.

The fact that pottery water pipes were mainly used for pumping water and distributing water to the population in the city made the masters more responsible in this field. Water lines were laid not only in one line, but in several rows. At the same time, it became necessary to adjust the pottery elbows to change the direction of the water lines. Along with the manufacture of pottery pipes, their location according to the area, and the fastening of the perimeter and surface were also important. This protected the pipes from breaking and other external influences.

Thus, as a result of the research, it was determined that construction ceramics developed in Gabala in the XI-XIII centuries along with other fields of craftsmanship, and new technologies were applied in the construction art and architecture of the period.

REFERENCES

- Ahmadov, Q. M. (1989). Medieval city of Beylagan. Baku. Science.
- Efendi, R. S. (2007). The art of Azerbaijan. Baku. East-West.
- Farhadoglu, K. F. (2006). Baku. İcharishahar. Baku. S-G & Chinar-Print.
- Gabala Archeological Expedition 2005-2010. Discoveries. (2011). Baku: CBS.
- Gabala Archeological Expedition 2011-2012. Discoveries. (2013). Baku: CBS.
- Gabala Archeological Expedition: Reports, Discoveries 2013. (2015). Baku: CBS.
- Gasimov, E. Ə. (2002). Water Supply of Medieval Cities of Azerbaijan (IX-XV Centuries). Historical-Archaeological research. Baku.
- Jabiyev, Q. C. (2018). Basics of Azerbaijani Archeology. Baku: Science and education.
- Mammadzada, K. M. (1978). Construction Art in Azerbaijan. (IV-XVI centuries). Baku: Science.
- Maysuradze, Z. (1954). Gruzinskaya khudozhestvennaya keramika XI-XIII vv. (Angobirovannaya keramika Dmanisi). [Georgian art ceramics of the XI-XIII centuries. (Dmanisi engobed ceramics)]. Tbilisi. [in Russian].
- Mustafayev, A. H. (2009). History of Material Culture of Azerbaijan. (Typological Research Based on Ethnographic Materials). Baku: Baku University.
- Rabinovich, M. G. (1949). Moskovskaya keramika. Materialy i issledovaniya po arkheologiya SSSR №12. [Moscow ceramics. Materials and research on archeology CCCP №12]. Pod red. A. V. Artsikhovskogo. Moskva, Leningrad, tom 2. [in Russian].
- Reports of the Gabala Archeological Expedition (2005-2010). (2012). Baku: East-West.
- Reports of the Gabala Archeological Expedition 2011-2012. (2014). Baku: East-West.
- Salamzada, A. R., Rzayev, N. İ., & Karimov, K. C. (1977). The Art of Azerbaijan. Baku.
- Yakobson, A. L. (1979). Keramika i proizvodstvo keramiki srednevekovoy Tavriki. [Ceramics and Ceramics Production of Medieval Taurica]. Leningrad: Leningradskaya Nauka. [in Russian].

Gasimzade Afghan

Ph.D. Student, <https://orcid.org/0000-0001-6167-0938>, efqan.qasimov@mail.ru

Стаття надійшла / Article arrived: 04.08.2021

Схвалено до друку / Accepted: 28.08.2021