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STUDY OF GEORGIAN FRESCOED PAINTED CHAPEL FROM THE VACHEDZORI MONASTERY 10th-13th AD (OLUR, ERZURUM, TURKEY)

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ABSTRACT

St. Grigol Khandzeli (759-861) and her followers' monastery construction operations in the Tao-Klarjeti region, as well as the art works of these monasteries, indicate that the foundations of the Medieval Georgian Art Academy were built in the region. The Painted Chapel, the subject of our study, is a part of this tradition. It has a single nave. It is dated to 12th-13th centuries AD.

Contrary to what was claimed, our research in 2022 discovered that the chapel architecture differed from traditional Byzantine architecture and was built in the Georgian architectural style. It has been established that the medieval Georgian painting art, which grew under the influence of Byzantine art, attained a local quality. There are scenes showing Jesus' First Bath, Baptism, the Virgin Mary, and Warrior Saints. An inscription written in the old Georgian alphabet Asomtavruli was discovered. The inscription offers information about the chapel's history and the clergy. Analysis measurements were taken using μ -XRF, μ -Raman, and μ -FT-IR analytical instruments on samples taken from the chapel's plaster layer and the paints on this layer. The chapel's walls are painted in the secco fresco technique and are composed of a matrix of white plaster lime, sandstone (feldspar, quartz), limestone, and embedded aggregates. Red and yellow ocher pigments for red, burgundy, orange, and yellow colours; Carbon black and lazurite pigments for black and gray colours; Lazurite, barite and ultramarine blue pigments for light blue; Calcite lime white and calcium carbonate pigments are defined for the white colour. Plaster and pigments (except blue paint) were most likely made and supplied locally or regionally. This provides information regarding the technical knowledge of the Vank Valley residents.

KEYWORDS: Pigments, Byzantine, Georgian Art History, Tao-Klarjeti, Baptism, King David IV, Raman, FTIR, Lazurite, Iconography, Architecture, Archaeometry

1. INTRODUCTION

The painted chapel is located within the borders of Keçili Village, 25 km from the Olur District of Erzurum, in the northeast of Turkey (Fig. 1). The chapel is a building belonging to the Vachedzori (Niakomi) monastery located in the Vank Valley, southeast of Keçili. According to Old Georgian history, this place

is the Tao-Klarjeti (ტაო-კლარჯეთი) region. Geographically, the region begins in the Strait of Georgia and extends to the Lesser Caucasus. Tao-Klarjeti generally covers the historical and geographical areas that remain within the borders of Turkey. The provinces of Kars, Ardahan, Erzurum and Artvin define this historical geography.



Figure 1. Map showing the Tao-Klarjeti region and Vachedzori monastery (from the author's archive).

From the 9th to the 13th centuries AD, one of the most significant political and cultural centers in medieval Georgia was the Tao-Klarjeti. St. Grigol Khanteli and her followers pioneered the creation of monasteries throughout the region, resulting in the development of all fields of culture, including mural painting (Merchule, 1987: 524-587). This rise of the powerful movement that aimed to unite the Georgian kingdoms and principalities is closely related to the history of the monasteries. This date is the 9th and 10th centuries AD, which constitutes the most important period in the history of Georgia (Didebulidze, 2013: 215 et al.). Similar historical developments must have led to the construction of the Vachedzori monastery.

We limited information about the Vachedzori monastery consists of the studies of E. Takashvili (1938: 34), D. Winfield (1968: 66), N. Thierry (1984: 141-147), W. Djobadze (1992: 154), D. Khoshtaria (1997: 23-35) and M. Kadiroğlu-Leube (1998: 100-101). According to the information obtained from these studies, the monastery is dated to the 9th-10th centuries AD. The monastery's plan is draw. St. Stephen's Church, three chapels, the bell tower, and some rectangular planned spaces were all investigated. Two inscriptions belonging to the monastery were found. These inscriptions belong to the 13th century AD.

These inscriptions, according to sources, have something to do with monastic structures being restored (Takashvili, 1938: 34; Winfield, 1968: 66). In this respect, the monastery is dated to the 10th-13th centuries AD. The features of the place where the monastery was founded are closely related to the location choices of the monastic buildings in the region (see Bayram, 2005: 23-25). Due to its location, it is in a place suitable for defense. It is located near the water source flowing from the Vank Valley. There are fertile, small-scale agricultural lands and gardens in this area.

The chapel under study was created by rearranging a section of a structure from the Vachedzori monastery complex in the northwest (Figs. 2-3). This shows that the structure has two different space. It is unknown exactly what this structure was constructed for in the beginning. However, the purpose of usage of the building has been differentiated as a result of various structural and architectural changes that were found to have been implemented in the subsequent phase. Structurally, with the construction of the apse section, it is seen that the building was transformed into a small-scale place of worship, that is, a chapel. The plan of the chapel was drawn for the first time by E. Takashvili (Thierry, 1984: 143, fig. b). During our investigation, we noticed that many architectural elements were ignored in this plan. Another subject that draws our attention is the chapel's wall

murals. The paintings were first studied by N. Thierry (Thierry, 1984: 144-146). Scenes of Orthodox origin here are noteworthy for their Georgian iconography. However, it was determined that the murals were examined in the same approach as the building's architecture. During our investigation, we discovered an inscription that had not previously been noticed in the literature. The inscription is written in the Old Georgian alphabet Asomtavruli. For the medieval Georgian culture, the chapel's architectural features, theological scenes, and inscription are very important. The chapel is situated in a structure designed in the Georgian architectural style. It differs from Byzantine architecture in this respect. Byzantine iconography was taken into account when looking at the descriptive and instructive scenes of Eastern Christian Orthodox Georgian iconography. This is reason enough for us to understand the content of and strength of the relationship between Byzantine and Georgian art. The inscription, on the other hand, is belongs to an alphabet that was widely employed in

Georgian communities in the medieval. This inscription is thought to include important information regarding the chapel's build process as well as historical events in the region. Plaster and pigment samples were gathered without damaging the plaster layer of the walls during the work in the chapel. These specimens have been analyzed using μ -XRF, μ -Raman, and μ -FT-IR elements. The plaster and colour spectrums in the wall gypsum layer were researched, as well as the fundamental characterization of the primary components of the pigment samples and the molecular structure of the plaster components and the pigment. In this way, the organic relationship between Georgian and Byzantine painting is studied from a new viewpoint. At the same time, the results here are significant in that they confirm what the historical and archaeological evidence in the chapel reveal. It is not a regular occurrence in the region to conduct archeometry studies that generate such analytical results in houses of worship. In this respect, analysis measurements in the chapel are of great importance.



Figure 2. View of the Frescoed Chapel from the south and southeast (from the archive of M. K. Doğan).

The important places of worship of medieval Georgian Christianity are at an important stage in Turkey today with their restoration and conservation work. Oskhi and Iskhan monasteries are among the most important places of worship. Research here continues with the work of scientists in Georgia and Turkey. In this respect, doing a comparable study at the Vachedzori monastery will greatly enhance cultural

legacy. This situation is also important in terms of history, culture and faith tourism. In this regard, the relevant information was provided to the Olur Municipality, the Olur District Governor's Office, the Erzurum Directorate of Culture, and the Erzurum Governorship for the preservation and restoration of the monastery. This work also serves as stimulus for more in-depth reflection and action on this subject.



Figure 3. Structure A in its general view, including the Frescoed Chapel and wine cubes section.

The Painted Chapel is the main subject of this study. The chapel is important in demonstrating Georgian Orthodox identity in the Tao-Klarjeti region in the medieval. There are several reasons for us to examine this issue. Firstly, the fact that the chapel has not been fully researched by historians and art historians, and that information about it is offered anecdotally, has revealed a chronic and paradoxical understanding of history. Secondly, despite the presence of numerous religious centers in the Tao-Klarjeti region, the identity of Georgian art is described through Byzantine history and art. The historical and artistic reality that is ignored here is the basis for our orientation in this study. Of course, while studying Eastern Christian art, it cannot be isolated from Cappadocia, the center of Western Christian art. The influence of Byzantine art in the region is very high. Yet, Georgian art and the presence of this art in the region should not be overlooked when formulating an assessment. Because it is known that religious structures have been constructed in the Tao-Klarjeti region since the 8th century AD. I should mention that the same is true for the Vachedzori monastery, to which the chapel is architecturally tied. Thirdly, to examine and introduce the paintings from an iconographic point of view. Fourthly, the introduction of the inscription and the determination of historical developments; this inscription has just been found and is being introduced for the first time. Fifthly, the analysis of the plaster layer, technique and pigments of the chapel. Many houses of worship in the Tao-Klarjeti have paintings on the walls. There has been few technical research on the dyes and pigments used in these paintings. In this respect, the analysis measurements here are remarkable. Because the interaction between archaeological materials and archeometry results will be the most concrete illustration of the outputs. Therefore, in this study, the architecture, wall paintings, epigraphic document, and archeometry studies of the chapel

were attempted in some detail. Our goal is to reveal the identity of Georgian art in the region by drawing attention to the presence of peoples in the region in the medieval through the chapel, to emphasize the importance of re-examining existing archaeological structures, and to obtain reliable results with analysis measurements. Thus, the need to re-examining and questioning the studies in the region will become apparent. This development will also pave the way for restoration, conservation and consolidation studies. In this respect, comprehensive archaeological surveys are absolutely very important.

2. PLAN, ARCHITECTURAL AND TECHNICAL FEATURES

The structure was constructed by leveling a sloping ground in the northeast-southwest direction and placing right-angled foundation sections on top of it. This situation, which we encountered during the construction of architectural structures, is among the main features of the structures built in the Tao-Klarjeti region (Djobadze, 1978: 117). The structure consists of a two-story space. For this reason, the spaces are named and defined as A and B structures (Figs. 4-5). Structure A is 7.20 x 11 m in size and has a rectangular plan. The veneer wall technique was used to construct the walls. On both sides, the inner infill wall is compacted and integrated with mortared, rough-worked, and strong wall structures constructed with polygonal, rubble, and irregular rectogonol stones of similar kind. The wall thickness is 90 cm (Fig. 6). The wall structure has been preserved up to 5.50 m (Fig. 5). Slaked lime quarries can be found in the area known as Vavuser hill by the locals. This hill is northwest of Vank Valley and is about 10 km away. It is thought that the lime hauled from here was used to make mortar, which was then applied to the walls.

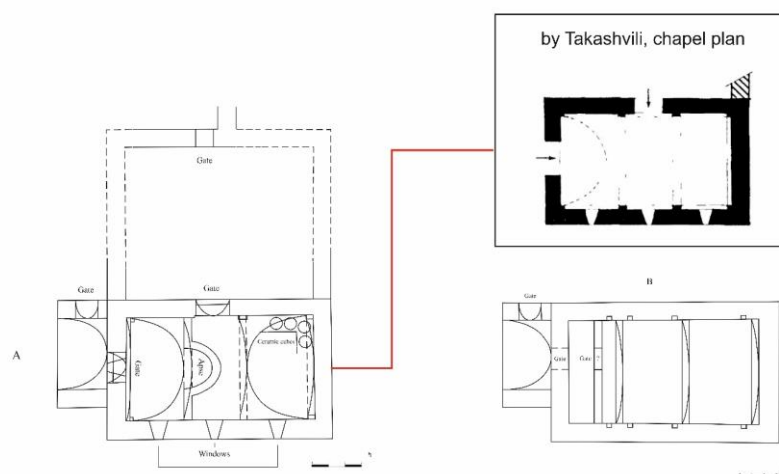


Figure 4. Plan drawings of the Frescoed Chapel (structure A-B).

The inner infill wall is 1/3 the thickness of the wall. Wall surfaces are covered with plaster. The space has a door on both the west and south faces. The main access to the space is through the west door. On the exterior, the door features a lintel and a semicircular plan from the inside. The width of the door is 1.70 m, the depth is 90 cm, and the height is 2.30 m. Rectogon blocks were used to veneer the door jambs. The south façade door has the same plan as the west door, but the jambs are different and have the same features as the building's walls. The width of the door is 1.50 m, the depth is 90 cm, and the height is 2 m. The area has four crenellated windows. The structural characteristics of these types of windows are quite different; the inner angle is wide and the outside angle is narrow. The first and second windows are 35 x 85 cm in size, 90 cm deep, and 1.20 m high. The third window is 40 x 90 cm in size, 90 cm deep, and 1.30 m high. While the windows on the east wall open at eye level, allowing a medium-sized person to readily observe the outside, the window on the south wall is above the south door, parallel to the door. The fourth window on the south wall is 40 x 90 cm in size, 90 cm deep, and 1.40 m high. There are four blind arch structures that are not built to be equal distances apart, in carrier position and seem elegant. While the first three arch structures are intact up to their profiled capitals, the arch on the south façade wall is almost intact the exception of two blocks in the center. The arches' legs have a rectangular body formed of polygonal stones up to 1.70 m from the ground. On the body, there is a profiled cap. The arch structure, a body of basalt rectogon blocks, rises over the capital and encompasses the space in an east-west manner from one end

to the other. The thickness of the arch is 20 x 30 cm. The Bulanik neighborhood in Eglek Village, which also includes Vank Valley, has a basalt stone type. The locals refer to it as *Bulanik Stone*. The building's upper cover has been damaged, but the structural impression of the arches, the sloping structure of the west wall, and the solid structure of the south wall up to the area that gives the roof profile indicate that it has a barrel vaulted roof. The walls of the roof portion may be seen standing up to the vault return (Fig. 6). An examination of the largely preserved upper cover of the Vachedzori monastery in the northwest reveals that the rubble stones were mixed with a dense mortar and converted into a hard and heavy concrete that resembled the ground, which was then used as a roof. Therefore, it is assumed that the structure's roof was built using a similar application. Four conical shaped wine cubes were discovered buried high above the ground in front of the walls on the west and north façades, constructed of terracotta and narrowing towards the bottom. It was determined that the wine cubes and the first two windows opening to the east face of the wall are parallel angled. Because the inside of structure A is covered in wall remains, earth, and plants, it is unclear if the floor is a plastered floor or a mosaic. Yet, when the illicit excavation hole opened on the ground at the entry of the west door was studied, it was established that the floor was covered with a very thin plaster and the floor structure was approximately 90 cm thick. From this, it is understood that the floor of structure A is as thick and substantial as the walls.

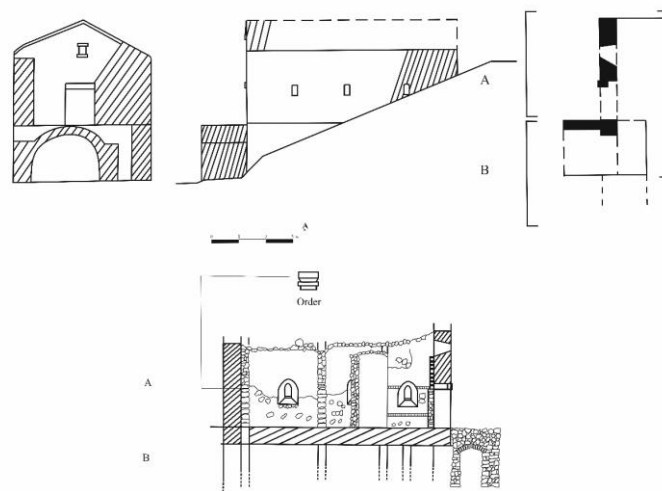


Figure 5. The Frescoed Chapel's section view and interior detail (structure A-B).



Figure 6. Remains of structure A's vaulted roof and view of wall structure.

It is seen that the southern part of structure A, which we have so far defined, has been rearranged and turned into a small-scale chapel (Fig. 7). It is rectangular in shape and measures 5.10 x 4.10 m. It is directional northeast-southwest. It has single nave. The third blind arch structure is where this part begins. Structure A is divided into two halves by an apse wall, which is formed as a semi-circular interior and exterior. The apse is 3.20 m in height, 2 m in width, and 1.45 m in depth. The back of the apse wall is not plastered (Fig. 8). The apse's front is plastered. Furthermore, it was discovered that red brick pieces were utilized as filler between the rubble stones that formed the apse wall, although this sort of brick was not used on the walls of structure A. Traces of frames were discovered on the east wall of the apse, which were determined to have been made for hanging plates or paintings. In the door and window components were not altered structurally. Likewise, the entrance door is on the south side. A two-line inscription in the Old Georgian alphabet Asomtavruli was discovered on the jamb wall to the west of the south

door. The chapel's walls are quite plastered. On top of the priming plaster, another layer of plaster is visible. The requirement to plaster again must be owing to the paintings covering the walls; the plaster thickness has been determined to range between 3-5 cm. The murals consist of the life cycle of Virgin Mary, Saints, Priests, and, most notably, Jesus, as well as different floral and geometric ornaments.

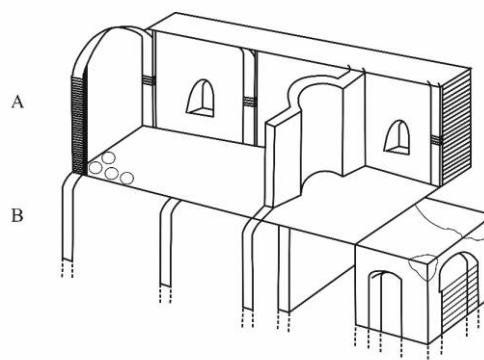


Figure 7. View of the Frescoed Chapel in 3D (structure A-B)



Figure 8. The Frescoed Chapel's north view and interior detail (structure A).

To the west of the chapel is an area connected with the building and formed as a courtyard. However, apart from the partially solid wall structure in the west, the walls that make up the courtyard walls are visible from the surface. The starting point of the courtyard's south wall is connected with the west wall of structure A. The thickness of the wall is 90 cm, and the south wall has a wall extension of 8.40 m in the west and 7.50 m in the north. The courtyard area is accessible through a door opening on the west wall.

This door is across from structure A's west door. The door is 90 cm in width and is fully destroyed. There are walls in this area that are both connected to the chapel and assumed to belong to other constructions, the ruins of which may be seen from the surface. Because of the dense soil, vegetation, and wall remnants in the northern and western areas, making definitive conclusions regarding the structural situation appears impossible. When we look at the south side of the courtyard area in terms of plan, the fact that the

north extension wall in the west direction creates a corner in the east direction and that building A forms integrity with the west wall exposes the courtyard's general layout (Fig. 4). This plan appears to be consistent and harmony with the plan of the main structure, where the chapel is housed. In the courtyard area, no building remnants were discovered.

Another structure is the B structure, which was formed as a basement or ground floor. In terms of plan, it is similar to structure A (Figs. 4-5). It is accessed through a vaulted structure (Fig. 9). This

vaulted structure also provides access to the chapel's south entrance door. Unfortunately, the south wall of the vaulted structure was demolished by locals in order to open a large door to structure B and easy fill in the hay and grass piles. Structure B's entrance door is the semi-circular arched section on the vaulted building's west façade. The gate measures 1.10 m wide, 90 cm deep, and 2.85 m tall. Several of the steps created to descend to structure B are encounter while entering from here.



Figure 9. The vaulted section that provides as the entrance to the B structure.

The entrance, however, could not be reached after the first two steps because the people had filled it with hay and grass piles. Therefore, this part has not been fully defined. According to the information we received from the local people, after entering the door, one descends the steps to the B structure, and from there, the entrance is made through the door that opens to the south wall. This information is correct in terms of plan. By entering the illicit excavation hole created in the ground right in front of structure A's western entrance, the inner architectural elements of this part were attempted to be described (Fig. 10). The thickness of the base is 90 cm. The base structure was created by mixing polygonal stones with a dense mortar. Accordingly, it was determined that all three arch structures up to the apse section of structure A were on the ground floor likewise, and an approximately 45 cm thick wall structure was encountered just after the third arch. This wall was built as an intermediary wall between the third arch and the main structure's south wall. The fourth arch that we saw on the south wall of building A could not be seen here due to the

wall structure. This arch, however, is thought to have been built integrated with the south wall, as in structure A. This expectation is a structural need for the plan, as we would like to emphasize. Furthermore, its ceiling, like the building's roof, is barrel vaulted. Parallel to the arches that compose the B structure, there are rectangular beam slots measuring 25 x 20 cm. Structure B, on the other hand, is mostly filled with grass and straw heaps, as previously stated. In addition, building B was filled with grass piles to leave a gap of 1.70 m on the ceiling. Therefore, we lack detailed information about the interior of structure B. Yet, because of the wine containers in structure A, it is probable that this structure was utilized as a warehouse or workshop area. Moreover, it is noteworthy that building B was designed as a dark room as a requirement of its plain plan, space structure and solitary life. Because of these characteristics, it is believed that this location could have been utilized as a chamber tomb (crypta), sarcophagus, coffin, or a room for the preservation of precious artifacts.



Figure 10. View from the inside of Structure B.

3. ICONOGRAPHY PROGRAM

Scenes of orthodox origin dominate. Scenes depicted include the First Bath (II), the Baptism of Jesus (I) and Virgin Mary (III), Saints (IV, XI), Warrior Saints (V-IX), and Priests (X), (Fig. 11). Virgin Mary, John, Angel, Salome, Mae, Military Saints (five), Saints (nine), Priests (five), and unnamed characters (four) appear in the scenes. There are a total of twenty-eight figures portrayed. Plant and geometric embellishments are also featured. The main sources, according to the iconography, are the Gospels of Matthew, Mark, Luke, and John, as well as Jacobs' Protoevangelion. Black, orange, yellow, light blue, burgundy, cream, gray, dark green, light brown, dark brown, brownish red, and red were used in the scenes.

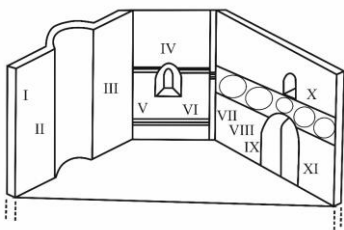


Figure 11. The paintings' location in the Frescoed Chapel.

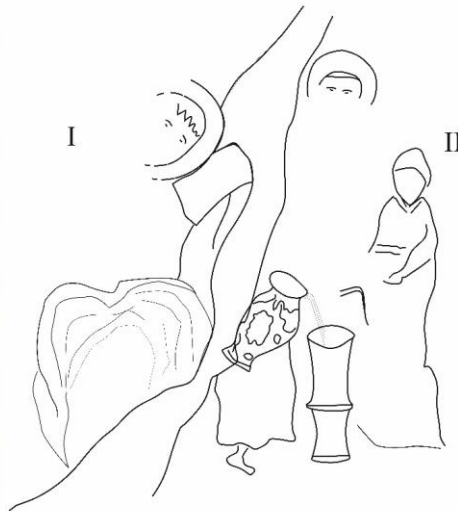


Figure 12. The Frescoed Chapel's First Bath and Baptism scenes.

The Virgin Mary is depicted on the apse's east wall (III), (Fig. 13). The upper portion has been preserved. It has its head and body turned to the right. Showing in profile. The forehead, nose and chin structure has hard and sharp lines. His eyes are large, his eyebrows are curved, and his lips are fleshy. The head was slightly inclined forward. There is a focus on an event. This expressive expression reflects Virgin Mary's elusive gaze. Virgin Mary is dressed in a burgundy mophorion that reaches from her head to her shoulders (Schiller, 1971: 36). Identification of limbs such as fingers, hands, and arms was not possible. The rough

3.1. Jesus' First Bath (II)

It is a canonical and apocryphal iconography. For this reason, there is a close relationship between descriptions of the postnatal bathing scenes in ancient times and Jesus' first bathing. The birth scenes of Dionysus and Achilles, in particular, have produced a religious source (Weitzmann, 1951: 37; Kitzinger, 1963: 100; Bell, 1979: 237-239).

The bathing scene of Jesus is shown on the apse's west wall (II), (Fig. 12). The presence of Salome and Mae, as well as the jug and water bathtub (small water pool) in the scene, indicate that this was Jesus' first bath (Jacobus, *Protoevangelio*, 14: 14; 13: 20). Salome, one of Jesus' midwives, is seen on the left filling a water bathtub with a jug in her hand. The lower part of the figure has been preserved. It is dressed embroidered and a dark green skirt. His right foot is unharmed. In front of Salome is the orange water bathtub, and in front of her is Mae, one of Jesus' midwives. Mae is dressed in a dark green skirt. His body lines, particularly his left arm stretching towards the bathtub, are evident. In fact, Mae is holding Jesus in her arms at this scene. But, because the scene had been destroyed, it was not possible to identify Jesus.

lines of a figure, however, appear in the direction Meryem tilts her head. This figure must be Jesus. Because both Virgin Mary's facial expression and body movement require a meaning to the scene. From this point of view, we think Virgin Mary is depicted in a maternally affectionate attitude, looking at Jesus, who is thought to be in her lap. As a matter of fact, it can be said that the bathroom scene on the west wall of the apse completes the composition here and strengthens our view on this subject.



Figure 13. Frescoed Chapel Virgin Mary scene.

3.2. Baptism (I)

This icon represents a person's acceptance into God's kingdom through the acquisition of a new identity (Bertholet, 1962: 550). There are important statements about this scene in the Bible. (Matthew 3: 1-17; Mark 1: 9-11; Luke 3: 1-21; Yuhanna 1:29-34). The major topic is represented by the Holy Spirit, Jesus, John, and Angel figures. In addition, the axe, tree and river are complementary elements that facilitate the perception of iconography.

The baptismal scene of Jesus is located on the west wall of the apse, next to the First Bath scene (I), (Fig. 12). In the scene, there is a representation of John, an angel, and a river. These two defining elements, angel and river, are closely associated with Baptism. These provide information about the general status of the icon. The angel is located to the left of the stage. He has an orange halo on his head and a garment in his hand. The left brown wing of the angel is visible. The angel's head is inclined forward depending on his body movement. Parallel to this movement, he is holding the garment in his hand. Fine lines gave depth to the garment, which is left natural accordance with the movement. The angel's eyes are focused, as if he is witnessing something. In other words, the angel seems to be waiting for the right time to do the task he has taken on. There is a river flowing north-south in the angel's viewpoint. On the right bank of the river, there appears a haloed figure. This figure is thought to be John who baptized Jesus. This event is also seen as evidence of Jesus' Baptism symbol.

3.3. Warrior Saints (V-IX)

Those called Holy Warriors or Military Saints are known as soldiers during their lifetime and martyrs of Jesus when they die. They are the heavenly and divine guardians of Christians.

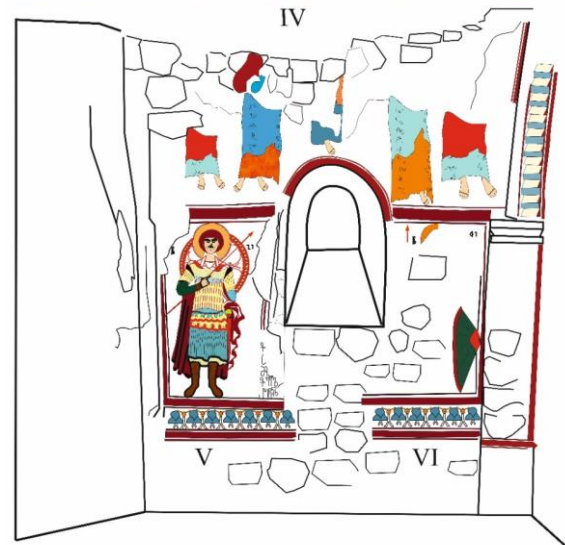


Figure 14. Scene of Saints and Military Saints in the Frescoed Chapel.

A horizontal strip border embellishment divides the eastern wall of the chapel into two different scenes. Two Military Saints are depicted to the right and left of the window in the scene below (V-VI), (Fig. 14). The figure on the left is St. George, as indicated by the "LT" monogram next to it (V), (Fig. 15). His shield is on his back. He holds his spear crossed at chest level with his right hand, while his left hand rests on the sword in its scabbard. The saint's head has an orange halo. He wore a light blue tunic with a yellow plated

breastplate (clivanion) wrapped by a belt or girdle from the armpits, a brownish red cloak (lacerna) tied from the neck to the lower limbs, and legging as protection (cremasmata). With the movement of his left hand, the cloak is folded and it is seen that this movement adds vitality to the figure. He has a youthful profile with curly brownish red hair, beardless face and fair skin. Eyes and eyebrows are given as if alive. Their ears are little. On the right side of the window, there is another saint figure. As can be understood



Figure 15. A depiction of St. George in the Frescoed Chapel.

The chapel's south wall is separated into two scenes by horizontal stripes that connect the single knitt embellishment motifs. Three Military Saints are depicted on the left side of the south gate in the scene below (VII, VIII, IX), (Fig. 16). The first saint from the left is St. Demetrius, whom we know from the "ϠΤ" monogram (VII). With her right hand, she holds her sword crossed at chest level, while with her left hand she holds her yellow-edged white shield at shoulder level. The saint wears a yellow-plated armor, a light blue cloak, and leggings, and his head has an orange halo. The folds he formed on his dress, holding the sword in his right hand, are remarkable. He has a young face, straight black hair, beardless face and fair skin. Eyes and eyebrows are alive. Its ears are large. The second saint to the left of St. Demetrius is St. Eustathius, as understood from the "ΤΓΒΡΣΓΒ" monogram (VIII). With his right hand, he holds his spear upright, while his left hand holds his shield. A sword is strapped around the saint's waist to his right. The sword is cross due to its position at the waist. The saint's head is surrounded by an orange halo. He wears a light blue tunic with a yellow-plated breastplate and a brownish-red cloak. It has a mature face, brownish-red silky hair, a beard, and fair skin. The eyes are small, the eyebrows are thin. Its ears are

from the "ΓΤ" monogram next to this figure, this person is St. Theodore (VI), (Fig. 14). It has, however, been largely destroyed. He holds his spear erect with his right hand while holding his shield upright with his left. Saint's head is surrounded by an orange halo. The lower section of the scene with two saints is finished with an arch embellishment of palmettes and trifoliate flowers.

large. The third saint to the left of St. Eustathius is St. Procopius, whom we know from the "ΥΙΩΒΩΥΥ" monogram (IX). The Saint's sword, spear, and shield equipment, as well as his facial feature, are similar to St. Eustathius. The saint has an orange halo on his head. He was dressed in a white tunic, a brown-coated breastplate encircled by a belt or girdle under the armpits, a green cloak, and leggings. The breastplate's craftsmanship detail, similar to St. George's armor. The folds of the dress on the arm are remarkable while gripping his sword with his right hand.

3.4. Other Figures (Saints (IV, XI), Priests (X) and Unidentified Figures)

The above scene on the east wall of the chapel, which is divided into two scenes, shows five Saint figures (IV), (Fig. 14). The upper part of the saints is not intact. Despite this, it is seen that the saints' clothing was two-piece and draped. The saint in the second row from the right is seen holding the holy book in his left hand. Other from that, because no data could be found to identify the saints, comments were avoided.

The south wall of the chapel is divided into two separate scenes by the extension formed by horizontal stripes coming out of single knit motifs. These motifs

feature depictions of priests (X), (Fig. 16). As it is seen, the clothes of the priests are uniform, large in size and closed in front. While the priest in the first row holds the holy book with his right hand, the palm of his left hand is shown from the front. The priest in the second row is hands on his chest. The portrayals of the third and fifth priests are badly damaged. Therefore, comments are avoided. The fourth priest is the Syrian St. Ephrem, as indicated by the “ԻՓԵ” monogram (X), (Fig. 16). The saint has a thin face, fluffy, curly hair, and a white beard. He is shown as an old and experienced person. His hands are partially visible on his chest.



Figure 16. Scene of Priests, Saints and Military Saints in the Frescoed Chapel.

There are some figures on the south door and door jambs. They are, however, not robust enough to be identified. In the middle, there is a figure with a halo on his head, and figures on the jambs stand opposite each other. We believe that the person with the partially visible halo is Virgin Mary, and that the figure

next to her should be Jesus. The other two figures must be saints. But, as previously said, the upper portion of the door has been destroyed, and the colors of the remaining figurines have faded.

To the left of the triple military saint portrayal and the south door are four saint figures (XI), (Fig. 16). The saint figures are badly damaged. The halos on the heads of some saints are partially visible (1st, 2nd and 4th saints). The saint in the first row holds the holy book in his right hand. As the monogram “ԻՓԵ” indicates, this saint is St. Catherine. The saint is dressed in a yellow tunic and a light blue cloak, with a white loros hanging from her left arm. The fourth row saint is clutching the holy book with her right hand, while the palm of his left hand is shown from the front. On the west wall, an unidentifiable figure with a halo on her head was also seen.

4. INSCRIPTION

The inscription can be found on the west jamb of the chapel's south door (Fig. 17). It consists of two lines. The letter characters indicate that the inscription was written in Asomtavruli, the Old Georgian alphabet employed in the medieval. I would like to thank Dr. Davit IOBIDZE for translating the inscription from Old Georgian to contemporary Georgian, and Ass. Prof. Neriman YILMAZ for translating it from contemporary Georgian to Turkish. The translation of the inscription is as follows;

“Jesus, protect Ephrem and his people and have mercy on them! Amine”, “Jesus, protect Bartolomeo and David and mercy on them! Amine”.

This inscription was written in the form of the chapel's epitaph. The inscription mentions two priests named Ephrem and Bartolomeo, as well as King David. The clergymen mentioned must be in charge of the chapel. Considering the king's political, military, and cultural ties in the region, it will be understood that he was David IV (1089-1125), King of the Bagrationi Dynasty. David is a founding king known by the title “Agmashenebeli”. Following the end of the Seljuk dominance in Tao-Klarjeti, the king promoted religious and cultural developments in the region and secured the realization of construction activities. With these achievements, he established “Golden Age” in the Georgian history and built a name for himself.



Figure 17. Inscription of Asomtavruli in the Frescoed Chapel.

5. ARCHAEOMETRIC STUDIES: ANALYSIS AND RESULTS

5.1. Materials

The Painted Chapel is a structure that belonged to the Vachedzori monastery, dating to the 9th-13th centuries AD. It is one of the oldest religious buildings in the Tao-Klarjeti region. One of the monastery's most remarkable architectural structures is the chapel. The Orthodox faith's didactic and salvation scenes are in the foreground. There are twenty-eight figures in all, (three scenes from Jesus' life First Bath (II), Baptism (I), Virginia Mary (III), and saint figures) in a small chapel (5.10 x 4.10 m). This is a feature that makes the chapel important. The murals are dated to the 13th century.

In this study, a total of eight samples from the chapel's depictions of Baptism (II), Virginia Mary (III), Saints (IV, XI), St. George, (V), St. Demetrius (VII), St. Eustathius (VIII) ve Syria St. Ephrem (X) were taken and subjected to analysis.

5.2. Methods

On the chapel's *in-situ* wall paintings, analyses were done. At Süleyman Demirel University (Turkey), these analyses were conducted. Techniques used are μ -XRF (X-Ray Fluorescence Spectrometer), μ -Raman spectroscopies and μ -FT-IR (Fourier Transform Infrared Spectroscopy), (Vandenabeele, 2004: 607-609; Khramchenkova et al., 2018: 195-207; Ganetsos, 2019, 51-61; Khasawneh and Elserogy, 2019: 85-91; Ali et al., 2020: 37-52; Christopoulou, 2020: 67; Liritzis et al., 2020; 48-98; Ashkenazi et al., 2021: 89-122; Mastrotheodoros and Beltsios, 2022: 147-159). The isotopic compositions of wall paintings made of primer, plaster, and pigment were determined in these analyses using a variety of electromagnetic spectrum-based techniques. The μ -XRF spectroscopy is based on the measurement of electromagnetic beam emission, absorption, scattering, fluorescence, and diffraction. By exposing a sample to a potent laser source that emits a near-infrared monochro-

matic beam, μ -Raman spectra are obtained. A appropriate spectrometer is used to measure the scattered light's spectrum while it is being irradiated from a specific angle. The intensities of μ -Raman lines are at most 0.001% of the source intensity. Therefore, they are a little harder to define and measure than the infrared spectrum. The difference between the wave numbers (cm^{-1}) of the seen beam and its source is the wavenumber shift, which occurs on the horizontal axis. μ -FT-IR, on the other hand, was used to reveal the elemental characterisation of the elements derived from plaster components and pigment basic components. The above analyses determined the plaster's properties, colors, and plaster components. With the use of a scalpel, samples were taken in micro size from specific spots on the accessible areas of the church because the gadgets under investigation take accurate measurements. These samples were put into an eppendorf tube measuring 0.2 mm. The tube is labeled with the sample name written on it. Plaster and pigment samples were gathered without damaging the plaster layer of the walls during the work in the chapel. The samples were carefully protected from sunshine. These specimens have been analyzed using μ -XRF, μ -Raman, and μ -FT-IR elements. The elemental characterisation of the principle components of the mural pigment samples was determined using μ -XRF. μ -Raman determined the molecular structure of the plaster's components and pigment by comparing the plaster and color spectra in the chapel's plaster layer.

5.2. Analysis and Results

Colours are similar to a person's identity. We personalize and load meanings. These are coloured chemical materials that have been used since prehistoric period. The elemental origin of the colours was revealed with μ -XRF measurements after separating the samples taken from the chapel into visually perceived colour groups (Table 1). From the chapel, examples of primary, mixed, and neutral colours were gathered. Eight colours were examined. Figure 18 shows the locations of the samples that were gathered

from these colours. According to the analysis results, red (St. George (V)) Ca, Fe, S, Cu, Ti, Sr, K, Rb; black (Saint (XI)) Ca, Fe, Pb, Hg; orange (St. Demetrius (VII)) Ca, Fe, As, S, Mn, P; light blue (Baptism (II)) Ca, Fe, Pb, Mn, Ti, Sr, K; burgundy (Virginia Mary (III)) Ca, Fe, Sr; yellow (St. Eustathius (VIII)) Ca, Fe, As, P; white (Syrian St. Ephrem (X)) Ca, Fe, Sr, K; gray (Saint (IV)) is of Ca, Fe, As, S, Ti, Ba, Sr, K element origin. Burgundy contains the least amount of elemental doping (Ca, Fe, Sr), whereas red (Ca, Fe, S, Cu, Ti, Sr, K, Rb) and gray (Ca, Fe, As, S, Ti, Ba, Sr, K) have the highest. The colours have been determined to be of

major element origin. It has come to light that the colours contain a significant amount of Fe and Ca components. This is due to the colours being alkaline earth. When these colours are classified, red, black, orange, light-blue, claret red, yellow, white, gray colours are alkaline earth (Fe, Sr) and alkaline earth metal (Ca, Sr); alkali metal (K, Rb) of gray, light-blue, red and white colours; gray, orange and yellow, semi-metal (As); orange and gray, other metals (S); black and light-blue, weak metal (Pb); transition metal of red, gray, light-blue and orange colors (Mn, Ti, Cu); It has been determined that gray, yellow and orange contain nitrogen (P).

Table 1. Results of μ -XRF Analysis of Colour Samples Obtained from the Chapel.

Results of μ -XRF Analysis of Colour Samples Obtained from the Chapel																
No	Colour	Location	Elements													
			Ca	Fe	As	S	Cu	Pb	Mn	Ti	Ba	Sr	K	P	Rb	Hg
1	Red	St. George (V)	••	••		••	••					•		•	••	••
2	Black	Saint (XI)	••	••					••							••
3	Orange	St. Demetrius (VII)	••	••	••	••				••					••	
4	Light Blue	Baptism (II)	••	••					••	••	••		••	••		
5	Burgundy	Virginia Mary (III)	••	••									••	••		
6	Yellow	St. Eustathius (VIII)	••	••	••									••		
7	White	Syrian St. Ephrem (X)	••	••									••	••		
8	Gray	Saint (IV)	••	••	••	•					••	••	••	••		

Major Element (•••) (> % 1), Determined Element (••), Minor Element (•) (< % 0.1)



Figure 18. Locations of the chapel's pigment samples.

Eight pigment samples were taken from the chapel and examined using μ -Raman and μ -FT-IR (Tables 2-3). According to the results of these analyses, three of them are red ochre (red, burgundy, orange), two are carbon black and lazurite (black, gray), two are yellow ochre (orange, yellow), one is calcite lime white, calcium carbonate (white) and one is lazurite, ultramarine blue, and barite (light blue). The pigments are all of mineral origin, according to the analysis. Also, the pigment samples taken are in the alkaline earth metals group. The pigments are all of mineral origin, according to the analysis. By using μ -Raman and μ -FT-IR analysis, the pigment measurements made with μ -XRF are confirmed. These analyses revealed that all save the light blue pigment have gypsum and lime impurities. They are major elements. Red iron

oxide and red ochre are components of the red colour (Fe_2O_3). This colour belongs to the alkaline earth group. It is an inorganic. It was determined that the intensity of the red in dark color was obtained from the Fe element. The red pigment's μ -Raman Shift (cm^{-1}) is 588.30, 495.78, 411.19, 288.33, 249.88. It has been proved that the pigment's red iron oxide plays a significant role in the formation of this circumstance. The black colour (C) is carbon black. It's made of burned bones. It is in the alkaline earth group. It, like red, has been used in wall paintings since prehistoric period. The orange (Fe O (OH)) is made up of earth yellow and red ochre. This mixture added redness to the pigment. It belongs to the transition metal, other metals, and semi-metal group. The light blue ($\text{Na}_8\text{-}_{10}\text{Al}_6\text{Si}_6\text{O}_{24}\text{S}_{2-4}$) is contained ultramarine blue, lazurite

and barite pigments. The barite was generally utilized as a colour lightener. This component is used in blue and dark blue pigments. It was probably used as a colour lightening or colour thinner in the chapel. Its μ -Raman Shift (cm^{-1}) is 1080.66, 567.80, 288.44. This colour originates from Afghanistan. Therefore, it is an imported product. It has gained importance as a blue pigment since the 6th century AD. It was widely utilized in the medieval in the art of painting, particularly in religious wall paintings. Because this colour was imported, it was rather costly. Nonetheless, because the color blue is regarded sacred by Christians,

this colour was utilized in important paintings. The white colour (Ca CO_3 $\text{Ca SO}_4 \cdot 2 \text{H}_2\text{O}$) is from the alkaline earth metal group. It was detected in two different ways in chapel. The first is pure paint colour. The other is the colour created by gypsum and calcite lime white components. This confusion has been cleared up by μ -Raman and μ -FT-IR analyses. Its μ -Raman Shift (cm^{-1}) is 1007.15, 650.26, 490.30, 412.16. The changes in the here were a result of the calcite lime white pigment's intensity.

Table 2. μ -XRF Elements, μ -Raman, and μ -FT-IR Analysis Results of Chapel Pigment Samples.

μ -Raman (Characteristic μ -Raman Shift (cm^{-1})) and μ -FT-IR Analysis Results of Chapel Pigment Samples					
No	Colour	Pigment	μ -Raman	μ -Raman Shift (cm^{-1})	μ -FT-IR
1	Red, Burgundy	Red ochre	Red ochre, Lime, Gypsum	588.30, 495.78, 411.19, 288.33, 249.88	Red iron oxide, Lime, Gypsum
2	Black, Grey	Carbon black, Lazurite	Carbon black, Lazurite, Lime, Gypsum	1506.87, 1578.88, 1328.80, 1292.67, 679.94	Lime, Gypsum
3	Light Blue	Lazurite, Barite, Ultramarine Blue	Lazurite, Barite	1080.66, 567.80, 288.44	Lazurite
4	Yellow	Yellow ochre	Yellow ochre, Lime, Gypsum	1001.55, 612.7, 601.24, 528.10, 466.68, 402.86, 375.19, 270.22, 209.50	Lime, Gypsum
5	White	Calcite lime white, Calcium carbonate	Lime, Gypsum	1007.15, 650.26, 490.30, 412.16	Lime, Gypsum

Table 3. Pigments identified by μ -Raman.

Pigments identified by μ -Raman			
No	Colour	μ -Raman	Chemical Formula
1	Red, Burgundy	Red ochre, Lime, Gypsum	Fe_2O_3
2	Black, Grey	Carbon black, Lazurite, Lime, Gypsum	C
3	Orange	Yellow ochre, Red ochre, Lime, Gypsum	Fe O (OH)
4	Light Blue	Lazurite, Barite	Na_8 $_{10}\text{Al}_6\text{Si}_6\text{O}_{24}\text{S}_2\text{O}_4$
5	Yellow	Yellow ochre, Lime, Gypsum	Fe O (OH)
6	White	Calcite lime white, Gypsum, Calcium Carbonate	Ca CO_3 $\text{Ca SO}_4 \cdot 2 \text{H}_2\text{O}$

Pigments are the primary component of paints. It has been established that the colors employed in the chapel's paintings also contain a variety of pigments. These pigment samples were taken from the colours red, black, orange, light blue, burgundy, yellow, white and gray. Their samples were drawn from the depictions of St. George (V), Saints (IV, XI), St. Demetrius (VII), Baptism (II), Virginia Mary (III), St. Eustathius (VIII), and Syrian St. Ephrem (X), respectively (Fig. 18). By analyzing them with a μ -Raman measurement device, the slip rates and the characteristic rates of the pigments that induce these changes were determined. As a result of μ -Raman measurements, it was determine the characteristic Raman shifts of the pigments calcite lime white, calcium car-

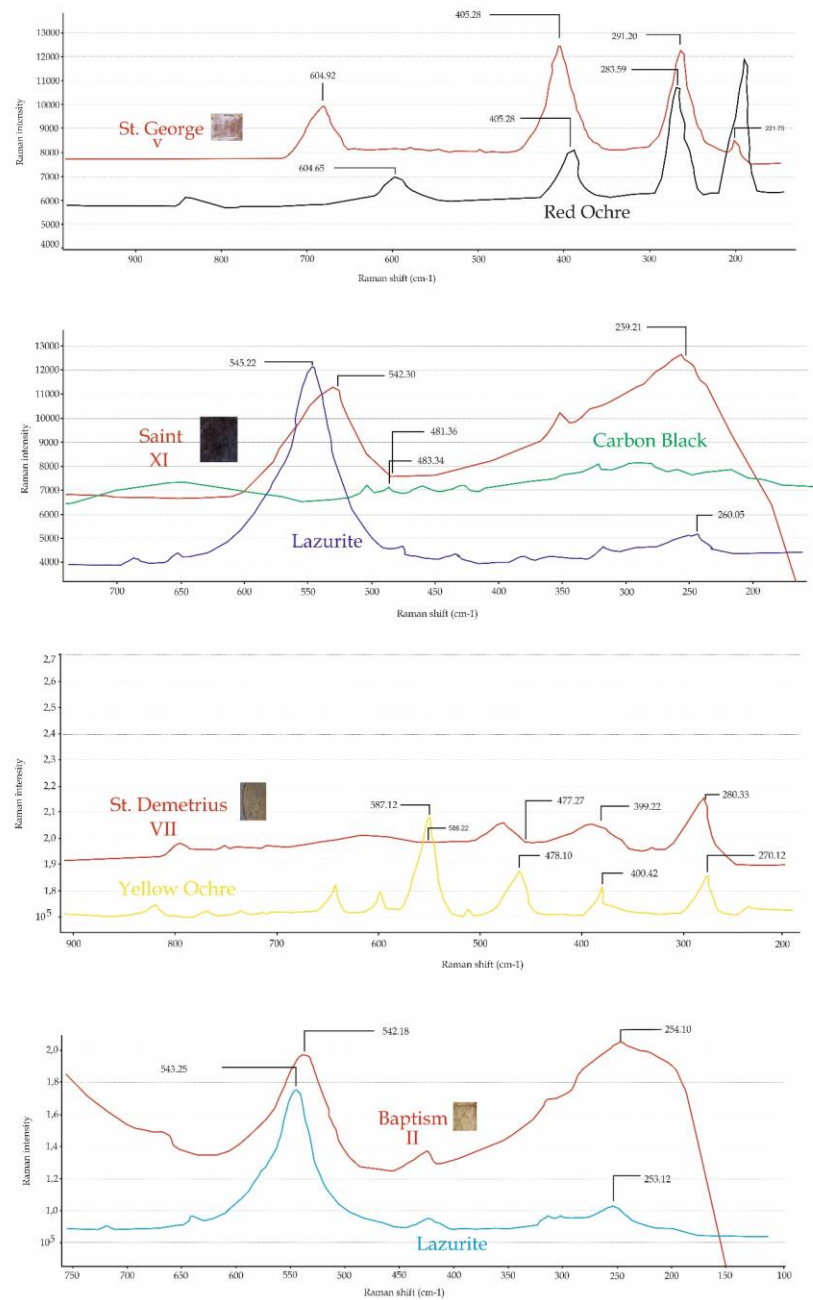
bonate, gypsum, ultramarine blue, lazurite, and barite. By figuring out how the components of μ -XRF and μ -Raman characteristic vibrations related to one another, the pigments were identified. Moreover, representative μ -Raman spectra for various colors are displayed with reference spectra in the graphs below. These are pigments identified by μ -Raman spectroscopy and analytically explained (Table 4, Graphics 1-2). Red's μ -Raman shift (cm^{-1}) is 604.92, 405.28, 291.20, 221.70. These μ -Raman shifts are similar to the red ochre pigment's characteristic μ -Raman shift (cm^{-1}) rates/measurements 604.65, 405.22, 283.79. It was determined that the red elements Ca, Fe, S, Cu, Ti, Sr, K, and Rb were crucial in the formation of this circumstance. Fe is the major element in here. Black's μ -Raman shift (cm^{-1}) is 481.36. This μ -Raman shift is

similar to the carbon black pigment's characteristic μ -Raman shift (cm^{-1}) rate 483.34. In the components of the pigment are mercury dense. Also, the lazurite pigment's μ -Raman shift (cm^{-1}) was determined to be 545.22, 260.05. Orange's μ -Raman shift (cm^{-1}) 587.12, 477.27, 399.22, 280.33. These μ -Raman shifts are similar to the yellow ochre and red ochre pigment's characteristic μ -Raman shift (cm^{-1}) rates 586.22, 478.10, 400.42, 270.12. Ca and Fe are the major elements in here. Light blue's μ -Raman shift (cm^{-1}) 542.18, 254.10. These μ -Raman shifts are similar to the lazurite, barite ve ultramarine blue pigment's characteristic μ -Raman shift (cm^{-1}) rates 543.25, 253.12. It was determined that the red elements Ca, Fe, Pb, Mn, Ti, Sr, K were crucial in the formation of this circumstance. Burgundy's μ -Raman shift (cm^{-1}) is 1007.15, 607.44,

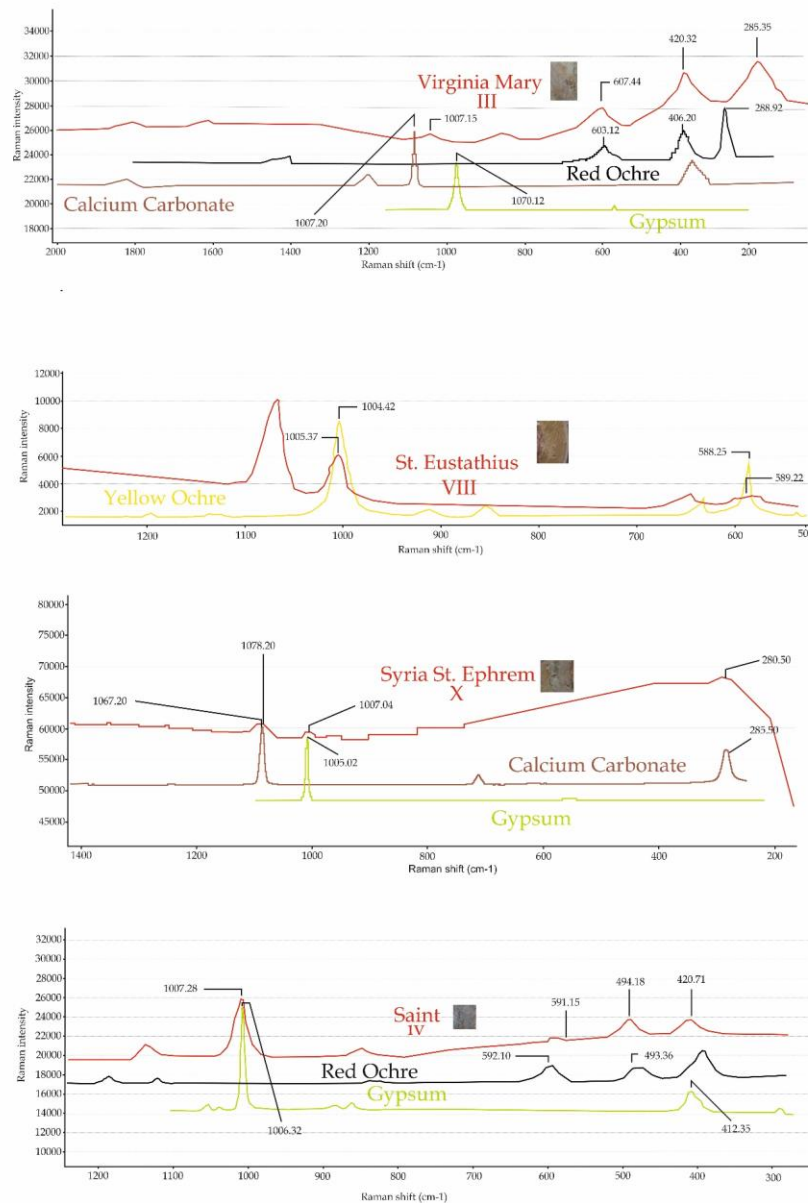
420.32, 285.35. These μ -Raman shifts are similar to the characteristic μ -Raman shifts (cm^{-1}) of red ochre pigment 603.12, 406.20, 288.92 and 1007.20 ratio of calcium carbonate pigment. Ca and Fe are the major elements in here. Yellow's μ -Raman shift (cm^{-1}) is 1005.37, 589.22. This μ -Raman shift is similar to the yellow ochre pigment's characteristic μ -Raman shift (cm^{-1}) rate 1004.42, 588.25. White's μ -Raman shift (cm^{-1}) is 1078.20, 1007.04, 280.50. In these μ -Raman shifts, the characteristic gypsum/calcite lime white ratio (cm^{-1}) is 1005.02. The ratio of calcium carbonate is 1067.20 and 285.50. Ca is the major element in here. Gray's μ -Raman shift (cm^{-1}) is 1078.28, 591.15, 494.18, 420.71. The characteristic μ -Raman shifts (cm^{-1}) of gypsum pigment and carbon black are 1006.32, 592.40, 493.36, and 412.70.

Table 4. Results of μ -Raman Analysis of Pigment Samples Obtained from the Chapel

Results of μ -Raman Analysis of Pigment Samples Obtained from the Chapel					
No	Location	Colour	μ -Raman Shift (cm^{-1})	Pigments	Characteristic μ -Raman Shift of Pigments (cm^{-1})
1	St. George (V)	Red	604.92, 405.28, 291.20, 221.70	Red ochre	604.65, 405.22, 283.79
2	Saint (XI)	Black	481.36, 542.30, 259.21	Carbon Black, Lazurite	483.34, 545.22, 260.05
3	St. Demetrius (VII)	Orange	587.12, 477.27, 399.22, 280.33	Yellow ochre, Red ochre	586.22, 478.10, 400.42, 270.12
4	Baptism (II)	Light Blue	542.18, 254.10	Lazurite, Barite, Ultramarine Blue	543.25, 253.12
5	Virginia Mary (III)	Burgundy	1007.15, 607.44, 420.32, 285.35	Red ochre, Calcium Carbonate	1007.20, 603.12, 406.20, 288.92
6	St. Eustathius (VIII)	Yellow	1005.37, 589.22	Yellow ochre	1004.42, 588.25
7	Syria St. Ephrem (X)	White	1078.20, 1007.04, 280.50	Calcite lime White, Gypsum, Calcium Carbonate	1005.02, 1067.20, 285.50
8	Saint (IV)	Gray	1078.28, 591.15, 494.18, 420.71	Carbon Black, Gypsum	1006.32, 592.40, 493.36, 412.70



Graphic 1. Reference spectra (red line) and μ -Raman shift analyses from the scenes of St. George (V), Saint (XI), St. Demetrius (VII), and Baptism (II).



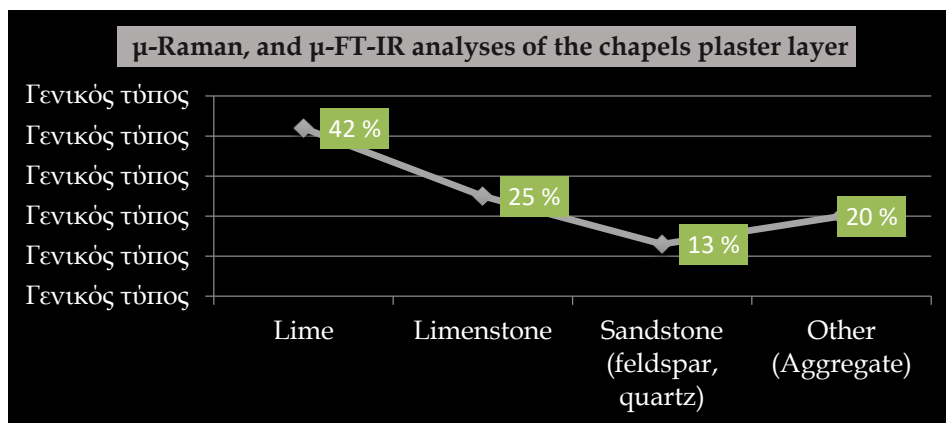
Graphic 2. Reference spectra (red line) and μ -Raman shift analyses from the scenes of Virginia Mary (III), St. Eustathius (VIII), Syrian St. Ephrem (X), and Saint (XI).

The chapel is heavily plastered. μ -Raman and μ -FTIR analyses were performed on samples taken from the plaster layer on the chapel's western façade (Graphic 3). According to the results of these analyses, the plaster contains Eocene-aged sandstone, limestone, and clayey sandy limestone. Because the plaster contains a significant proportion of lime and limestone, its binding properties stand out. The plaster has the follows mineral ratios: lime 42%, limestone 25%, sandstone (feldspar, quartz) 13%, and additional additives (aggregate) 20%. According to the analysis results, aggregate was utilized as protein to increase the mortar's binding features. When the proportions inside the plaster layer are evaluated, these results suggest that it has a substantial strength. It has been

proven that this plaster is of lime origin. There were no inorganic fillers or additives of vegetable origin found in the plaster layer. It was determined that a huge amount of water was added while creating the mortar. Yet, no bubbles or pores were observed on the plaster. This shows that the amount of water is properly adjusted. Although the plasters in the chapel appear to have the same homogeneous structure, there are time differences between them. In other words, it has been determined that some areas were replastered at different occasions. Two different types of lime and additions were found in the chapel, according to μ -Raman and μ -FTIR analyses, but their use did not alter significantly over time. We already understood from our research that the chapel's walls

were two-layeredly plastered. We have mentioned in the this study that the need for plastering the second floor is due to the conversion of the space into a chapel and the wall paintings. The analysis' support of this finding has also justified our belief that the building in which the chapel is located belongs to two

different buildings and times. The sections that have survived to the present day are smooth and well polished, as may be seen. The permanence of the depictions in the chapel demonstrates that it is closely related to the quality of the plaster layer.



Graphic 3. μ -Raman and -FTIR analyses of the chapels plaster layer.

6. DISCUSSION AND CONCLUSION

6.1. Architectural

The chapel was created by reorganizing a section of a structure in Vachedzori monastic complex. This demonstrates that the structure has two different architectural structure. In this context, some determinations have been made about both the structure and the chapel.

The plan of the building where the chapel is located was first drawn by E. Takashvili, N. Thierry, on the other hand, used this plan as a reference while describing some of the chapel's wall paintings (Thierry, 1984: 143, fig. b). Because the building here is handled in a very simple perspective, it has been established that an incomplete plan has been revealed. Because of this, an effort has been made to illustrate the architectural features of the chapel in detail by taking this situation into account. Fig. 3 also includes the drawing made by E. Takashvili.

We do not have any information about the purpose for which this building belonging to the monastery was built. However, it is known that the structures that comprise the Tao-Klarjeti Georgian monastery complex were utilized as a chapel, library, manuscript (scriptorium), refectory (refectorium), dormitory, monk cell, baptistery, warehouse, workshop, tomb (crypta), and infirmary. It is stated that additional buildings were constructed to monasteries and churches in Georgian architecture, particularly in the 11th-12th centuries AD (Takashvili, 1952: 15-19; Ahunbay, 1997: 1159; Bayram, 2005: 115; Kaffenberger, 2018: 207-234; Skhirtladze, 2021: 192-193 et al.). There are many examples in this regard; Parethi

(Kadiroğlu-Leube, 1997: 402); Opiza, Handzta, Gunatlis Vani, Tskarostavi, Berta, Şatberdi (Bayram, 2005: 25-29, 39-48, 49-64, 64-69, 70-72, 83-88, 89-94); Oskhi, Vank, Chakarstov (Kadiroğlu-Leube, 1998: 97-125); Nuka Saq-dari (Kadiroğlu, 1999: 81-82); Otkhta (Dört Kilise - Tekkekale), (Takashvili, 1960: 74 et al.); Balvana (Kirazlı), (Kadiroğlu, 2003: 4); Haho, (Özkan, 2013: 23 et al.), Saviour Church in Chvabiani (Zakharova and Sverdlova, 2015: 11-23). Rubble stones were used to construct the structure's walls. The wall is 90 cm thick. Looking at the walls of the structure, it appears to be made up of a single wall. However, three walls are made together. These walls were combined together to form a single wall. The wall structure in the middle is the filling wall (Fig. 6). In this respect, the building's wall was designed as a covering wall. This technical craftsmanship is seen in several of the Vachedzori monastery's buildings which date back to the 9th-10th centuries AD (Takashvili, 1938: 54-61; Hills, 1964: 227; Khoshtaria, 1977: 23-35; Mepishacvili and Tsintsadze, 1978: 78; Skhirtladze, 2021: 192-193). Covering both sides of the infill wall with blocks or rubble stones is a common architectural tradition in Tao-Klarjeti architecture. Since the 9th-10th centuries AD, the covering wall technique has been commonly utilized in Tao-Klarjeti (Djobadze, 1978: 118 et al.; Özkan, 1997: 105; Kadiroğlu-Leube, 1998: 105-106; Bayram, 2005: 116-118; Khoshtaria, 2009: 79 et al.). Benzer örnekler; Handzta, Gunatlis Vani (Beridze, 1981: 294 et al.), Anchi (Ança) (Kadiroğlu, 1998: 106), Nuka Saq-dari, Parethi (Bayram, 2005: 39-48), Sinkot, Esbeki (Kadiroğlu-Leube, 1996: 402; Kadiroğlu, 1999: 82-94), Iskhan (Kadiroğlu, 1991: 10 et al.; Bayram, 2005: 117), Doliskhana, Oskhi (Bayram, 2002: 179-

185), Hahuli, Örtülü Vank, Pertus/Bobosgiri (Kadiroğlu, et al., 2002: 30-31), Ahiza I-II, Şindobani, Ahud, Sıhızır, Yusufeli (Kadiroğlu, 2003: 1-16). The use of blind arches in the medieval is very common in Georgian architecture. Its use in Georgian and Armenian architecture is also closely related (Edwards, 1985: 27-32; Marutyan, 1989: 144-236; Hasratian, 2000: 33, 336-337 et al.; Kazaryan, 2010: 27-59). Blind arches in the carrier position have brought the structure movement. Similar arches were utilized at the church of St. Stephen in the Vachedzori monastery complex. The arch blocks are made of basalt stones, which are common in Tao-Klarjeti architecture. Blind arches like these is common in medieval Georgian architectural structures from the 10th and 11th centuries AD (Kazaryan, 2011: 350-357; Donabedian, 2020: 63-112). It was widely used in cathedrals, monasteries and church buildings; Opiza (Chitishvili 2020, 61-62, 66), Otkhta (Takashvili, 1960: 10 et al.; Beridze, 1974: 163, 302 et al.), Kumurdo (Kaffenberger, 2020: 31), Parhal (Kadiroğlu-Leube, 1997: 399-400), Hahuli, Oskhi (Kadiroğlu, 2003: 8-9; Özkan, 1997: 97-119), Tibet (Kadiroğlu, 2003: 6-8), New Rabat (Kadiroğlu-Leube, 1998: 104-105 et al.; Kadiroğlu, 2003: 2-3), St. Ninos, Vardzia (Gedevanishvili, 2020: 20-25, 38). We determined that the structure's cradle-vaulted roof was destroyed. St. Stephen's church's partially solid roof is structurally similar. The roof cover is thought to be built of hard and heavy concrete formed by mixing rubble stones with a dense mortar. This is how the Tao-Klarjeti architectural structures' roofs were created. The roofs of structures built as places of worship, on the other hand, are covered with tiles or bricks (Djobadze, 1978: 121). Handzta and Gunatlis Vani monasteries are similar examples on this subject (Bayram, 2005: 56-57, 64-69). This type of roof is common in Byzantine architectural structures (Didebulidze, 2019: 150 et al.). Furthermore, this technique was used in the construction of the barrel vaulted roofs found in Cappadocia's Byzantine architecture (Çelebioğlu and Ağaryılmaz, 2008: 158). While the doors on the building's western and southern faces are similar in design, the jambs are architecturally different. While the jambs of the western entrance are covered with basalt rectangular blocks, the jambs of the south door are covered with rubble stones, as are the walls. The west entrance being created as a central or primary door must have caused this architectural change in the door structures. The use of various types and colors of stones is a common feature of Tao-Klarjeti. Volcanic tuff, granite, basalt, andesite, and limestones in light purple, brown, black, red, gray, blue, and green colors were employed on roofs, walls, doors, windows, columns, niches, figures, and numerous ornamentation. There are important examples in this regard; Iskhan, Doliskhana, Oskhi

(Djobadze, 1978: 119-120; Skhirtladze, 2010: 112). At the same time, this situation demonstrates the significance placed on the use of polychrome color in the region's architecture. Between the 11th and 14th centuries AD, the polychrome tendency in Georgian architecture is fairly common (Schmerling, 1954: 12). The structure is illuminated by four crenellated windows. This type of window has a wide inner angle and a narrow outside angle. This is explained by the design, which allows light to enter through a narrow opening while illuminating the space from a wide aspect. This sophisticated technique should be closely related to the mystery of mystical structures as well as the proclivity to benefit from daylight. Crenellated windows are commonly employed in Tao-medieval Klarjeti's Georgian architecture. There are similar examples; Opiza, Parethi, Handzta, Gunatlis Vani, Tskarostavi, Berta, Şatberdi (Bayram, 2005: 25, 31, 41, 56, 65, 75, 81 et al.), Iskhan (Skhirtladze, 2022: 233-300). Four conical shaped wine cubes made of clay and narrowing towards the bottom were discovered buried in a location high above the ground in front of the west and north façade walls of structure A (Figs. 4, 20). It can be noticed that the locations of these pots and the first two windows opening to the wall on the east façade are at parallel angles. This situation can be attributed to both grape fermentation and an increase in sugar rate due to rapid water loss (Diler, 1995: 446). Vineyards can be found in the Vank Valley and in the locations where the valley ends in the south. The grapes and wine cubes have an organic relationship with here. It is a probable possibility that the monastery's vines are run by monks for wine production and used as a socioeconomic resource for the monastery. It is necessary to mention some information on this subject. Monastery monks were interested to orchards because they lacked big pastures and wheat fields due to poor geography (Djobadze, 1978: 116). The rock-cut chapels and churches, modest chambers, and wine workshops at İlyas Father Lodge are inextricably linked to the monks' production work. The presence of ascetic life is shown by the spaces carved into high and sheltered rocky places. It is a significant advancement that Christians who come to continue their worship make wine and ensure that this production occurs while performing their devotion (Ataç and Pekak, 2021: 2-3). Priests worked in the fields and made their living by weaving fabric. They are also known to be involved in skills such as pottery, basketry, fishing net weaving, construction, and handicrafts (Ahunbay, 1997: 1159; Özkan, 2013: 69 et al.). Furthermore, the holy drinks for the rites performed in the monastery and church can be obtained from here. From this point of view, it occurs to mind to use the portion containing the wine containers as a "prothesis" room where the sacred bread and wine

are prepared. Corner rooms (pastoforia) first appeared in Syrian churches in the 4th century AD, with the establishment of the customs of bringing bread and wine to the bema. Corner rooms originally emerged in Christian architecture in the sixth century AD (Mathews, 1977: 146, 155 et al.; Ceylan, 2001: 193; Marica, 2002: 195-211; Leeming, 2018: 130-147 et al.). The wine cubes must have also been used to memorialize the "Last Supper" that Jesus shared with her apostles before her crucifixion, as well as to keep the wine prepared for the "eucharist" occasion (Liguori, 1887: 68-109 et al.; Chwila, 2021: 19-34; Hopej, 2021: 233-264; Kornek, 2021: 141-156; Pawlak, 2021: 35-52). Similar examples exist in this regard. Wine cubes were found buried northwest of Haho Monastery (Özkan, 2013: 20; Ocak, 2016: 54 et al., 136, fig. C.63) and at Parethi Monastery (9th century AD), (Djobadze, 1992: 154 et al.). Because the locations of the wine containers are associated with monasteries and church structures, it is highlighted that these locations can be used as prothesis rooms by alluding to Jesus' eucharist occurrence (İşler, 2010: 402).



Figure 20. In the Frescoed Chapel, wine cubes (structure A).

Structure B has the same plan features as structure A and was built as a ground floor. However, by the villagers was filled this area with hay and grass heaps to store winter food for their animals. Therefore, we do not have precise information about the use of this place. We would like to make some suggestions about this place. Because of the wine containers in structure A, this location could have been utilized as a warehouse. In addition, it is noteworthy building B was designed as a place, it was a dark room as a prerequisite of mystical life, and it had a simple plan. For this reason, it is considered that this location might be utilized as a sarcophagus, coffin, chamber tomb (crypta), or a room to keep holy goods. The researchers I. Giviashvili and N. Khizanishvili mentioned that there was a chamber tomb beneath the church ruins (Giviashvili and Khizanishvili, 2021: 241). It is possible to compare with some examples; Gunatlis Vani (Bayram, 2005: 66), Opiza (Marr, 1911: 163), Nuka Saq-dari (Kadiroğlu, 1999: 81), Otkhta (Takashvili, 1952: 166, fig.

B.1.), Oskhi (Djobadze, 1992: 45), Haho (Djobadze, 1992: 158) and Balvana (Kirazlı) (Marr, 1911: 4). The vaulted structure on the south façade provides the entrance to structure B. The lower floor of Gunatlis Vani Monastery is entered through a similar vaulted structure (Bayram, 2005: 64-67).

There are some architectural differences between the chapel and building A. This difference, as we noted in our previous narration, must be due to the later conversion of a portion of the building into a chapel. We findings are as follows;

- I- The places of worship in Georgian religious architecture were erected in the east-west direction, the apse in the east direction, the chapel here in the northeast-southwest direction, and the apse in the northeast direction.
- II- The window sections of houses of worship, which serve as the center of spiritual life, are typically built in the building's highest points. In accordance with this plan, both the illumination event and the interactions with the outside environment were minimized so that people could devote more time to worship and uninterrupted connection with God. However, the building's windows are positioned at eye level of a medium-sized person and at an angle to view the outside. It is not possible to see this feature in Georgian religious architecture. Because the windows were placed in high places. Therefore, if the building had been designed as a house of worship when it was first constructed, windows would have been placed on high positions, and additional windows should have been built on the west wall so that the pictures could be viewed clearly.
- III- The walls of the chapel were plastered in two layers with mortar. The building's other facade walls were created with a single layer of plaster. In this situation, wall murals have shown to be effective.
- IV- While all of the building's walls, including the chapel, were plastered, the back wall of the apse left under construction.
- V- It can be seen that the brick fragments that are not utilized as filler material on the building's walls were extensively used in the construction of the apse.
- VI- While theological themes and vegetal and geometric embellishments were embroidered on the chapel walls, no design was used on the building's other walls.
- VII- On the western jamb of the chapel's south door is a two-line inscription written in the Old Georgian alphabet Asomtavruli. This inscription was written in the style of the chapel's epigraph.

Taking these developments into account, it is clear that the building where the chapel is located was originally a structure connected to the monastery located in the northwest, but the southern section was converted into a small-scale chapel after some architectural additions and theological scenes. In this state, it became a place of worship attached to the monastery. These indicate that the building has a two-phase structure, that it was erected during the same period as the monastery, and that the chapel was added afterwards.

6.2. Iconography

N. Thierry was the first person to examine the chapel's murals (Thierry, 1984: 144-146). However, the comments here are anecdotal. Our opinion on this matter further strengthened when we took into account the conditions of the scenes in the 1980s, when the examinations were conducted. Because we believe that the paintings, which have been partially preserved to this day, were significantly more robust about 45 years ago. Given that the Byzantine paintings of the Cappadocia region were among the most popular works of art during those years, it is unfortunately possible to overlook these original works of Georgian art. When the Tao-Klarjeti region's geographical conditions are added to this situation, it is probable that the lack of interest in the art works of the region has increased. The figure of Virgin Mary and the First Bath and Baptism scenes of Jesus, which N. Thierry mentions but does not elaborate on, are studied in detail in this my research. All other paintings of the chapel were studied and introduced.

The Tao-Klarjeti region, which is part of the empire and Eastern Christianity, contains instructional scenes of Orthodox Georgian iconography. The icon controversies of Western Christianity have had little impact on the region. For this reason, the subject and pictures of the iconographies were applied within the framework of traditional Christian art without much interruption. This situation is demonstrated by the chapel's wall paintings, which are the subject of our investigation.

The First Bath (II) and the Baptism (I), two significant scenes in Jesus' life, are shown in the chapel. The bath scene is a canonical and apocryphal subject. These scenes are not a very common depiction in Tao-klarjeti painting art. This situation makes the chapel important. This scene is associated with the nativity scene of the Virgin Mary and Jesus, which is popularly depicted in Byzantine Cappadocia art (Pekak and Gür, 2015: 175-226). This situation is understood to have become widespread in wall paintings in the 11th century. Although the figure of Jesus could not be seen due to the damage in the bathroom scene, traditional elements such as Salome, Mae, the jug, and

the bathtub, as well as clues that could create ideas about the stage have been identified. Also, the figure of Eleousa Mary (III) depicted on the west side of this scene indicates that it is one of the important elements of the bathroom scene. This is also the scene in which God comes face to face with his mother's son, displaying enormous commitment and emotion. The love of both is endless. It is understood that no distance exists between the ideal human model Virgin Mary and God's son Jesus.

The baptism scene is an orthodox-sourced icon (Matthew 3: 1-17; Mark 1:9-11; Luke 3: 1-21). This scene is situated to the west of the First Bath scene. The chapel is thought to be dedicated to Jesus in this respect. The stage's descriptive elements include the angel bearing a garment or clothes, John the baptist, and the river. The garment held by the angel in this scene denotes that Jesus was dried after being baptized by John in the Jordan Şeria (Erden) River (Mckenzie, 1965: 79; Kirschbaum, 1972: 249; Meslin, 1987: 59-62). In accordance with the movement of the angel, the dress is left natural and depth was given with fine lines. Waiting angels by holding garments in their hands are usually recognized by their facial expressions in didactic and descriptive icons (Restle, 1969: 28-302 et al.; Rodley, 1983: 301-339; Epstein, 1986: 69; Jerphanion, 1925-1942: 1-2, 393-431, 454 et al., figs., 95, 2. 96-110, 11, 1-3, 112-124; Ousterhout, 2005: 52). This event is also seen as evidence of Jesus' Baptism icon. One of the important data on dating is that Jesus' baptism changes periodically. In fact, while it was one of the most important icon scenes in the 11th century AD, it was gradually abandoned in the 13th century AD (Ötüken et al., 2010: 33). The angels' holding the garment in their hands and their bodily gestures in the 11th century AD resemble those in the baptism icon, which appears to have been created using the same template. The baptism scene in the chapel can be compared to paintings seen in churches in the Cappadocia region from the 11th to the 13th centuries AD in this context. There are some examples in this regard; Saklı (Restle, 1967: figs. 21-22-24; 1969: 28), Çavuşin (Güvercinlik), (Restle, 1969: 302; Rodley, 1983: 301-339), Tokalı (Epstein, 1986: 69), Karanlık (Jerphanion, 1925-1942: 1, 2, 393-430, figs. 95, 2. 96-110, 11, 1-3, 112; Özil, 1984: 75) and Elmalı (Jerphanion, 1925-1942: 1, 2, 431, 454, figs. 113-124). It is can also be compared with the baptism scene in Cilicia region's Kızılgeçit Rock Church (Yıldırım and Doğan 2020: 165, 172, figs. 12-13).

The First Bath and Baptism scenes in the chapel are can be seen as evidence that the Christians' struggle was finally getting stronger when Jesus' presence was embodied in iconography. Because these scenes are the salvation scenes that are heralded. It is seen as sign of Christ the Redeemer's intercession on behalf

of her followers. We want to establish an association between the images of liberation here and the Tao-Klarjeti's historical events. During Georgian King Giorgi II (1072–1089) from the Bagrationi Dynasty, a sizable portion of this territory was ruled by the Seljuks. The region's peoples had lost their independence. Even some groups from Georgian societies are known to carry on by running away to the mountains. However, during King David IV, the Seljuk rule over the area came to an end. The liberation of the societies that gained independence was thereby ensured. In this respect, the liberation scenes depicted in the chapel and the societies that survived the Seljuk domination must be closely related. In other words, the communities that were saved by the intercession of Jesus and those that attained freedom as a result of David's victory share the same status and destinies. Because of this, it can be said that historical occurrences are connected to the paintings' theological message.

The chapel's representations of the saints (warriors) are remarkable. They are called to as Holy Warriors or Military Saints they are known as soldier while they are alive and as Jesus' martyrs after they pass away. By sticking with Jesus and her religion, they fought against torture and persecution. They are portrayed as having armor and cloaks. Saints sometimes hold crosses, spears, swords and shields. They are depicted alone, in groups, and on horses.

There are figures of “ԼԻ” St. George (V), “ԳԴ” St. Theodore (VI), “ԾԴ” St. Demetrius (VII), “ԴԲԸԸԳԵ” St. Eustathius (VIII), and “ՄԵՕՁՍԻ” St. Procopius (IX) in the chapel. They are described as rider, hunter, and dragon slayers (Paissidou, 2015: 193). They were the subject of poems by D. Akrites and M. Philes (Walter, 2003: 63-64). This suggests that the subject of saints was significant in Byzantine iconography. Saints are portrayed single as well as in groupings as distinct pairs or triplets in iconography (Weitzmann, 1966: 48-49, 62-65, 79 et al.). On the chapel's west wall, St. George and St. Theodore are positioned on the same stage, and St. Demetrius, St. Eustathius, and St. Procopius are positioned next to one another on the south wall. The Byzantine Army tradition known as “adelphopoiia” is closely tied to this pairing of saints in groups (Walter, 2003: 133, no 151). The depiction of three figures in Çavuşin, whose identities have not yet been determined, but who are determined to be Military Saints, is an important example of the above traditional understanding (Dawson, 2007: 4). According to the traditional understanding, figures of St. George, St. Theodore, and St. Procopius are shown in groups in the Çarıklı (Jölivet-Levy, 2001b: 77), St. George and St. Theodore in the Karşı (St. Jean) in Gülşehir (Jölivet-

Levy 2001a, 338, 345-347 et al.), and St. Theodore Tiro and St. Theodore Stratelates in the Hagioi Anargyroi in Kastoria (Maguire, 1996: fig. 11; Walter, 1999: 163-210). St. George, St. Theodore, and St. Demetrius are usually depicted riding horses in iconographic tradition. St. George and St. Theodore are depicted on their horses in the churches of Yılanlı (Nicolle, 1979: 167, pl. 179), Kılıçlar (Shevchenko et al., 2021: 281-283, figs. 7-8), Adishi, and Svaneti (Tsurtsunia, 2011: 78-80, fig. 11). However, all of the Military Saints in the chapel are standing and not depicted on horseback. By considering the place, position, and stance of the saints on stage, their integration with iconography and tight ties to imperial imagery can be explained in this circumstance. In this respect, there is a parallel relationship between the depiction of the saints as ready for war and mobilizing of the moral courage of the society. Physiologically, the saints' body movements and erect postures in the chapel, as well as their equal weight distribution on both feet, show that the archaic posture tradition has been abandoned.

The leading warrior saints of Byzantine iconography are St. George, St. Theodore, and St. Demetrius. They are known as the Byzantine army's protectors (Walter, 2003: 270-272 et al.). In this respect, the saints' harsh and cold expressions, upright posture, and their being fully equipped coincide with their mission. Instead of martyr garments, the saints in the chapel wear armor (clivanium) made of chains and scales. This circumstance reflects the Byzantine army's role in the state and militarization. Because saints are guardians of the structures and ideologies in which they are depicted (Ioannidis, 1984: 7-19). The armor of St. George and St. Procopius is secured from the armpits with a belt or girdle, which is a unique detail. The belt, which was fastened beneath the chest, was first used by Roman soldiers to secure armor to the body and was widely employed by Byzantine warriors during the medieval (Dawson, 1998: 38-50; Grotowski, 2010: 57 et al.). Shields are often seen hanging on the backs of warrior saints standing in the 12th century AD and later (Moutsopoulos and Dimitrokallis, 1981: figs. 39, 11, 23). The depiction of St. George carrying her shield or with a shield on her back was a popular feature in the 12th-13th century AD (Thierry, 1984: 146). St. George is depicted with a shield on horseback in the churches of Tanghili in Upper Svaneti (Velmans, 1982: 389-412), St. John Chrysostom in Thessaloniki (Moutsopoulos and Dimitrokallis, 1981: 226, fig. 14), and Panagia tis Asinou in Cyprus (Castineiras, 2020: 6, fig. 4a-b). Together with St. George, important examples include depictions of St. Demetrius depicted with his shield in St. John Chrysostom (Moutsopoulos and Dimitrokallis, 1981: 226, fig. 11) and Kolchida (Paissidou, 2015: 185-189, figs. 4-5). The shield here is slightly smaller than the

one held by St. George. The large-scale depiction of the shield may be a characteristic feature of Georgian icons (Privalova, 1980: n 29, pl. L). An essential dating criterion is the way in which St. George is holding his sword in its scabbard with his left hand and his spear crossed in front of him. This depiction is a traditional depiction of the 12th-13th centuries AD (Thierry, 1984: 147). St. Demetrius' iconography, which we have seen since the 10th century AD, is an essential historical source for our topic. It, in contrast to the other saints in the chapel, bears a crossed and chest-level sword in her right hand (Zenbilci, 2020: 361-382). The Military Saints in Çavuşin, whose identities are not yet known but who hold swords in their right hands, have a similar typology (Dawson, 2007: 4). A similar depiction of the saint with a sword in his right hand is found in a 14th century AD church in the village of Gradenisca in the Mariovo region of Macedonia (Makrievska, 2014: 41-46 et al.). St. Demetrius holds a sword in her left hand in this icon made by applying tempera technique on wood from the 11th-12th centuries AD, which is housed in the Hermitage Museum in St. Petersburg (Carr, 1997: 122). Also, St. Demetrius and St. George's straight and wavy hair and beardless faces are strongly connected to the portrayal type we have seen since the 12th century AD (Thierry, 1984: 146). They are depicted as energetic, young, and determined. They are similar to saint figures in Timothe-subani's Dormition (Privalova, 1980: n 29 pl. L), Vardzia's Dormition (Gaprindashvili, 1975: pl. 124) and St. Nicholas churches (Piralichvili, 1979: pl. 27). St. Eustathius and St. Procopius, unlike the other saints in the chapel, are shown with beards and a mature human profile. As can be understood from the examples here, monumental paintings in Georgian art developed between the 11th and 13th centuries AD. Additionally, it has been determined that the portrayals of the saints are kept in the foreground and that the saints' faces are made with realistic features.

In the chapel depicts five Military Saints. We think that these depictions are connected to historical events in the region. We had noted a similar approach in Jesus' scenes of salvation (First Bath and Baptism). The depiction of the Military Saints here as fully equipped and ready for war should be related to the spiritual empowerment and encouragement of the believe's societies. Because these saints are warriors and martyrs of the religion in which Jesus believed. They have endured all kinds of hardships as a result of their dedication to his religion. We know that the Tao-Klarjeti were formerly subject to Seljuk power before gaining independence. It is obvious that historical events have caused the local population to experience significant hardships. Both spiritual and material forces are need in an effort to minimize these problems. Thus, we believe that the reason why such

savior and protector images are believed to safeguard and strengthen societies is because the individuals who live in these societies are believed to do so because they get spiritual strength from these depictions. In other words, they must have believed that by creating such protective images, they established a spiritual power to withstand negative.

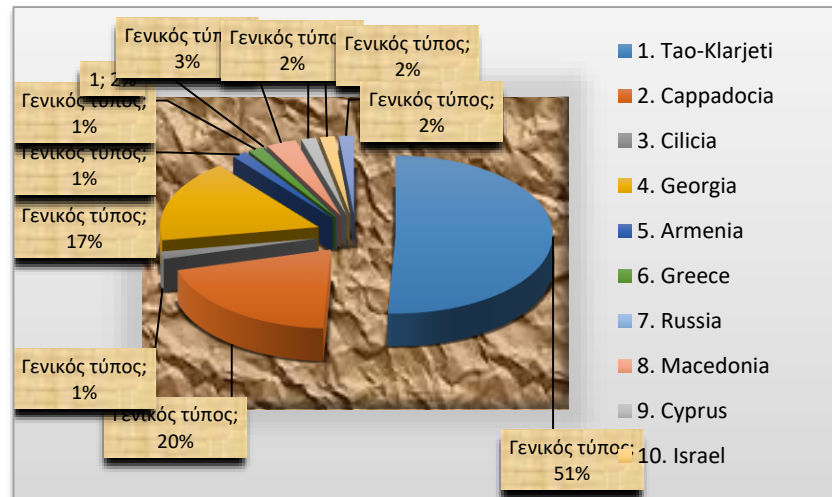
In addition to Military Saints, the chapel also features other saints (IV, XI). This provides proof of the respect paid to the saints. Similar to how icons of Jesus are revered, icons of the saints are revered after being made into sacred objects of worship through consecration and dedication rites. Because, in accordance with Orthodox doctrine, saints are God's hands and via their hands, God completes his work at places of worship. The heavenly temples' earthly representatives, known as saints, carry out the heavenly temples' earthly missions (Akkaya, 2014: 47). Therefore, in the high number of chapel saint figures is related to the theological approach. Saints depictions in Vardzia (12th-13th century AD) are a similar example in terms of quantity and theme. Military Saints and, differently female saints predominate here, as they do in the chapel (Gedevanishvili, 2020: 35-40).

The figures in the chapel have body proportions that given by adhering to a pattern; the arms and legs are slender and long, the body is graceful, and the overall structure of the body is energetic. In this aspect, it can be seen that the figurines are tried to be depicted with a physiologically realistic typology. In the 11th and 12th centuries AD, these features were carefully enforced (Mouriki, 1980: 77-124; Chatzedakes and Grabar, 1965: 16-19; Weitzmann, 1966: 224; Soykan, 2017: 96; Thierry, 1967: 161-175; Pentcheva, 2000: 34-56). This subject, the physiological features of the figures in Karagedik and Soğanlı Karabaş are show close similar. The fact that the garments are folded in layers in a spiral, as well as using linear shading to create depth and contrast, demonstrates a traditional understanding. These features are characteristic of monumental paintings from the 11th-12th centuries AD (Çorağan, 1998: 329). There are important examples in this regard; Iskhan (Skhirtladze, 2022: 245-246, figs. 9-11), Oskhi (Skhirtladze 2010, 97, 100, pl. 31-32), Otkhta (Skhirtladze 2009, 49-52 et al.), Haho (Skhirtladze, 2010: 116-117, pl. 30; Özkan, 2013: 62-63, figs. 99, 102-103), Saviour Church in Chvabiani (Zakharova and Sverdlova, 2015: 16, 18-19, figs. 9, 10, 17) and Eski Gümüş (Gough, 1964: 147-161; Stierlin, 1988: 175; Akyürek, 2001: 226-395).

During the 9th through the 13th century AD, the Tao-Klarjeti was one of the most prominent political and cultural centers in medieval Georgia. St. Grigol Khandzteli (759-861) and her followers' attempts at building monasteries around the region aided in the

growth of all fields of culture, including mural painting (Merchule, 1987: 524-587). The monasteries' history is closely related to the most important period in Georgian history, notably the establishment of a powerful movement aiming at uniting Georgian kingdoms and principalities, which began in this region between the 9th and 10th centuries AD (Didebulidze, 2013: 215 et al.). The chapel and Vachedzori monastery, both of which are the topic of the study, must have been the result of a similar historical process. Although we do not know who the architectural masters and staff of the structures in the monastery were, we can say that they were built by Georgian masters who are well-versed in Georgian architecture. The architectural determinations we made in our study revealed that these structures were created in a significantly different structure than Byzantine architecture. Architectural masters of some Tao-Klarjeti structures and their work are well known (see Khoshtaria, 2021: 113-119). The letter characters on the sides of the figures in the chapel are closely related to the Asomtavruli script of the 12th-13th centuries AD. This is critical for dating the wall murals. The murals of the chapel are made on dry plaster. This technique is the "sekko" technique and appears in Tao-Klarjeti architecture in the 10th century AD. This technique is said to have emerged in Byzantine architecture (Zakharova and Sverdlova, 2015: 14). The plaster layer on the walls is thick and unpolished. There is a disproportionate and excessive of utilization. This app is an example of local workmanship. The distinguishability and quality of color resolution, on the other hand, are in keeping with the craftsmanship of Byzantine artists. There were no preparation drawings or lines indicating this circumstance identified when the drawings were inspected. The figures' faces (skin color) are the same as the main backdrop color. It has been determined that elaborate workmanship is avoided and basic applications are included in this direction. Large shields of Military Saints are another distinctive feature of Georgian masters. Because saints' shields are usually depicted as small in Byzantine art. Individual or group figures were created in accordance with the iconography. Thus, the features of the figures were determined. Although monumentality and realism were attempted to be kept in the foreground, the out-of-proportion head parts of the figures could not conceal their physiological errors. While the iconographic subjects of the sceneries differed, so did the physiological conditions of the figures. The characters

in the Baptism and First Bath scene in the apse, for example, are shown as live, agile, and graceful figures that reveal body shapes and movements as well as energetic expressions due to the iconography. Such stylistic features have been seen since the 10th century AD. The figures' large proportions, heavy movements, immovable stances, dreary expressions, sharpness, and large fixated eyes grab attention in scenes featuring the Virgin Mary, Military Saints, Saints, and Priests. Those features have been used since the 11th century AD. In this respect, the murals of the chapel exhibit a wide range of cultural and creative characteristics, including Classical Byzantine art and traditional Christian. The source of the interaction between Georgian and Byzantine art is the Byzantine wall murals preserved in Cappadocia. For this reason, the paintings in the chapel show close similarities to Byzantine art. It is impossible to make a definitive remark on the artist and his team's origins here. Nonetheless, we believe the artist was a Georgian trained in Byzantine art education centers. This person learned Byzantine art and adapted it to her theological culture. Since there are architectural structures erected in the Cappadocia Region and territories under Byzantine administration in Tao-Klarjeti, as well as exceptionally valuable wall murals that adorn these structures. Iskhan, Otkhta and Oshki are important examples in this regard. The wall paintings of these structures, however, have disappeared. Despite the lack of evidence, the qualifications suggest that this could have been done by regional artisans. The second half of the 10th century AD through the first half of the 11th century AD, as evidenced by preserved murals, saw the development of painting in this area along the lines of Byzantine art (Zakharova and Sverdlova, 2015: 20-21). It is clear that Byzantine art had a significant influence on Tao-Klarjeti architecture and artwork in this regard. However, it is clear that Georgian art has developed a distinct identity in terms of both architectural and wall paintings when taking into account the Vachedzori monastery, which includes the chapel and is the subject of the research. The chapel's paintings and architecture have both been tried to be compared with examples from many different regions. Examples are given from Tao-Klarjeti, particularly Russia, Israel, Egypt, Georgia, Cappadocia, Cilicia, Armenia, Crypus, Greece, Macedonia, and Cappadocia (Graphic 4). In this way, it can be seen that Georgian art and architecture successfully try to establish their own identity.



Graphic 4. A graphical view of comparison examples of the Frescoed Chapel.





The wall paintings in the chapel should be dated to a later era, even though it is acknowledged that the comparison samples serve as an important reference in this regard. According to our research, the wall paintings in the chapel are thought to date from the 12th-13th centuries AD. While dating the chapel's paintings, N. Thierry mentions a rather different development (Thierry, 1984: 147). He believes that the inscription discovered by D. Winfield and reused in another building is related to this chapel. The inscription mentions King Dimitri II's (1271-1289) daughter as a donor of a church attached to the Vachedzori monastery (Winfield, 1968: 66). However, the repair of St. Stephen's Church, one of the monastery's outstanding buildings (can be in another structure), may also be connected to this inscription. Hence, it is doubtful that this inscription can be definitively linked to the chapel.

For our topic, the chapel's decorations are also significant. The chapel employed ornamentation of four different types (Table 5). First ornament is simple. The frames of the scenes were created by arranging form a horizontal strip as a border (I). The second ornament is an arch ornament with trifoliate flowers and palmettes (II). Similar to the Otkhta church's palmette decorations (Canöz, 2022: 171-174, 177 et al.). The nearest comparable example is the ornamentation in the Great Church in Akhtala (Tevzaia, 2008: 44). Stone relief examples of such elaborate embellishments can be come across in Georgian buildings (Khuskivadze, 2009: 222-225; Özkan, 2013: 93; Yazar, 2018: 303-397). In Oskhi, similar palmette motifs were created in relief (Özkan, 2010: 101, fig. 12-13). The third ornament of the chapel is horizontal rectangular geometric decorations on the arch (III). It resembles of the horizontal rectangular geometric ornamentation painted in black and white on Ani Tigran Honents' northern cross (Çelebi, 2013: 109-110, figs. 183, 187-189, 239-

240, 242, 246). The fourth ornament is made up of single knit motifs linked together by horizontal stripes (IV). Knit arrangements were applied beginning in the 11th century AD, first with brick and then with stone material, utilizing techniques appropriate for the properties of these materials (Tevzaia, 2008: 26 et al.; Bakırer, 2011: 103). This type of motifs is a continuation of Georgian architecture's stone ornamentation tradition. The knitting motifs of the Otkhta Church and the Anchi (Ança) Monastery are similar for my subject (Khuskivadze, 2009: 224, fig. 4). It reflects a characteristic feature of stone adornment art (Canöz, 2022: 168-179). Medallion ornaments in the Cappadocia Region are similar to knitting motifs in the Tao-Klarjeti region. Figures are embedded in these ornaments. Saint figures in the shape of bust in medallions can be found at the Archaic Church with a Single Nave in Erdemli Valley (Çorağan Karakaya, 2011: 313-314, 319, fig. 4). Similarly, saints and priests are depicted in geometric ornamentation arranged side by side on the walls of the Iskhan (Thierry, 2016: 361-383; Zakharova, 2019: 366-393) and Ateni Sioni (Virsaladze, 1984: 70) churches. Portraits are housed within round medallions linked by chains in Ani Tigran Honents (Thierry, 1993: 24; Çelebi, 2013: 105, figs. 174, 216-221; Gül, 2018: 30 et al., 420-421, 431, 433, 435-440, figs. 38a-d, 51b, 52-53, 54a-g). Due to damage, the interior of the window on the chapel's east wall was filled with ornaments that could not be properly identified. The practice of decorating the inside of windows and placing pictures on the window walls is a common tradition in Georgian architecture (Gedevanishvili, 2020: 36 et al.). In this regard, the inside of the windows at Haho (Özkan, 2013: 62, figs. 100-101), Vardzia (Gedevanishvili, 2020: 36, 40), and Ani Tigran Honents churches are adorned with figures, paintings, and geometric ornaments (Thierry, 1993: 38; Çelebi, 2013: 86-89, figs. 159-160, 177, 207-212; Gül, 2018: 29 et al., 364, 372, 374, figs. 11-12, 13c-

d, 13g-1). Throughout the 12th and 13th centuries AD, scenes with pictorial-decorative inclinations, such as the one in the chapel, became more visible. There are some examples on this subject; Khakhuli icon, Pkhotreri, Savior Gelati icon (Khuskivadze, 2009: 225).

Table 5. Table view of the Frescoed Chapel's ornaments.

No	Ornaments
I	
II	
III	
IV	

6.3. Archeometry Analysis and Results

The chapel's archeometry studies have been completed with μ -XRF elements, μ -Raman, and μ -FT-IR analyzes. These analyses have been determined to the molecular structure and components of the plaster (Graphic 3) used in the chapel, as well as the elemental characterization of the pigments in the plaster layer and the pigment components (Fig. 18, Table 4). The pigments of the depictions under examination were identified. Red ochre and yellow ochre were used for red and orange, calcite lime white, gypsum, and calcium carbonate for white, carbon black, lazurite, and gypsum for black and gray, lazurite, barite, and ultramarine blue for light blue, and red ochre and calcium carbonate for Burgundy (Tables 2-4, Graphics 1-2). In particular, a relationship between the trace components of natural colors and the characteristic vibrations of -Raman was established in order to define light blue. The pigments have been determined to be of major element and mineral origin. Ca and Fe elements have been observed to be intense in the pigments' composition (Table 1). Except for the light blue pigment, all contain gypsum and lime impurities. Calcite lime white, carbon black, yellow ochre and red ochre have been identified as components of black, yellow, white and red colours used in painting since prehistoric times. The light blue pigment has been determined to contain ultramarine blue, lazurite and barite components. The components included have been detected to be color lightening or color thinners. It has been established that there

are two variants of the white pigment that contain both color and gypsum and lime. Here, it was used as a main for tempera and water-based paints. The plaster layer have been determined to be composed of lime, limestone, sandstone (feldspar, quartz), and other element (aggregate). It has been understood that aggregate was used to enhance the plaster's binding properties. There were no inorganic fillers or additives of vegetable origin found in the plaster. Plaster and pigments (except blue paint) were most likely made and supplied regionally (if not locally). This provides information regarding the technical knowledge of the Vank Valley residents.

Analyzing the results, it was determined that, despite differences in period and location, comparable pigments were utilized in the art of painting in the Georgian and Cappadocia regions between the 10th and 13th centuries AD. Similar examples are the Georgian churches of Iskhan, Otkhta, and Oshki, as well as the churches of Cappadocia, Yusuf Koç, St. Simeon, and St. Theodora (Tağar-Yeşilöz). Elements and pigments are varied in these churches, and barite mineral, as well as lime and plaster, is employed as a color lightener. The fact that the plaster resembled Khorasan mortar, which was commonly employed in both locations during the medieval, supplied additional information.

6.4. Inscription: Interpretation in the light of historical events

A two-line inscription was discovered on the chapel's south door's western jamb. It has been determined that the inscription was written in Asomtavruli, the Old Georgian alphabet that was in use throughout the medieval. This inscription is in the form of the epitaph of the chapel. The inscription mentions Ephrem, Bartolomeo, and King David. The clergymen mentioned must be the people in charge of the chapel. Syrian Saint Ephrem is one of the priests shown with single knit motifs on the chapel's south Wall (X). This name is also mentioned in the inscription. Bartolomeo, who is mentioned in the inscription, was most likely shown in one of the motifs in chapel. However, the names of the priests other than Ephrem, however, could not be read on the motifs due to the devastation. Therefore, both the portrayal of Ephrem in the chapel and the inclusion of her name in the inscription are historically significant criterion. The third person mentioned in the inscription is David. Considering his political, military, and cultural relations in the region, it will be understood that this person was King David IV of the Bagrationi Dynasty. David is a founding king known by the title "Agmashenebeli". It is well-known in the region for its construction activity. He is known as the greatest and most successful Georgian king in Georgian history

and the architect of the Georgian “Golden Age”. In this respect, in order to understand the significance of the inscription for the chapel, it is necessary to examine the historical process in the Tao-Klarjeti region of king.

After Georgian King Giorgi II (1072–1089), David IV (1089–1125) became the ruler of the Kartli country (Georgia). The country was in a state of great ruin when the king ascended to the throne. The Turks had influence over a large area. In the early years of his reign, the monarch took steps to put a stop to Turkish colonization and dominance in Kartli and to bring the Georgians who had fled to the mountains back to their ancestral territories. The king also adopted a well-planned strategy to restore her kingdom and expand its territory, with the goal of establishing a strong, centralized state similar to the Byzantine and Seljuk models. In the meantime, the Seljuk Kingdom experienced internal unrest with the death of Sultan Melikşah in 1092. The Crusaders also went on Urfa and Jerusalem on an expedition (Lordkipanidze, 1987: 94; Brosset, 2003: 310-312 et al.; Korkut, 2018: 71-72). Although David believed that this was a good time to begin his war against the Seljuks, the king’s army was insufficient for his intentions in terms of both quality and quantity (Subaşı, 2013: 719). Thus, the king came into contact with the Kipchak groups that had started to assemble in the North Caucasus. The Kipchaks also had accepted Christianity around the start of the 12th century AD. While these things were going on, in 1104 the king defeated the Seljuks in the Ertukhi war and seized possession of Kakheti and Hereti (Metrevelli, 2010: 51-54). He then fought to halt the annual migration of Turks to the Kartli region. In 1106, he wed the Kipchak monarch Atrak’s daughter, forming a solid political relationship (Togan, 1981: 200; Thomson, 1996: 346 et al.; Brosset, 2003: 319 et al.; Peacock, 2006: 128). During this time, the Turks sent their armies of about 10,000 soldiers to Trialet. On the other hand, David marched towards the Maslata region with his army. After losing the war in 1110, the Turks left the region with their tents and goods. Thereupon, a large Turkish population went to the Tao region, settled in Olur, Tortum, Narman, and Artvin. He conquered Rostof, which was very important for the Turkish raids, in 1115. He was able to drive the Turks remove from their winter headquarters in this way. The king launched assault on the Turks in the Tao region. King entered Klarjeti in 1116, a region that encompassed Artvin, Borcka, Ardanuç, and Şavşat, after moving forward from the Çoruh valley; he attacked Turkish communities here (Vryonis, 1971: 284; Turan, 2004: 23). With all of his armies, the king advanced and entered Saltuk province. The majority of the Turkish populace distributed across the

Pasinler plain and the Konfor (Allahüekber) mountain was murdered. He seized many equipment belonging to the Turks, including tents, horses, camels, sheep, and more. He left the region and made his way out of the Çoruh valley after taking some sizable booty. And therefore, the king assumed control over the Tao-Klarjeti territory (Allen, 1932: 98; Pereira, 1971: 72). By uniting the Christian populations in the region, David’s triumphs against the Seljuks in 1123 and the Turkish communities in Eastern Anatolia (Göle, spir, and Oltu) in 1124 were very effective in recontrolling the region (Thomson, 1996: 338; Tellioglu, 2019: 61). Thus, the king expanded the territory of his country. Historical events have led to some developments in different fields.

The country of Kartli and the Tao-Klarjeti region began to develop fast in terms of religion, architecture, and military under the reign of the Bagrationi Dynasty (Güven, 2020: 107-108). During this period, the Gelati monastery was built by the king. Its goal is to encourage intellectuals to research Georgian literature, philosophy, art, and culture (Berdzenişvili et al., 2000: 145). This incident also reveals how the monarch used his vision to impose his will on the community in the territories he reigned over. Because of his accomplishments in politics and war, the king was referred to by the Byzantine Empire as a devout emperor and ruler. In this respect, the king was seen as the Byzantine successor. This event should also be viewed as imperial propaganda. Because of his struggles against the Seljuks, the king became an important ally of Byzantium. In this regard, the icon of Jesus, David and St. George in the St. Catherine monastery in Sinai is very important (Sotiriou, 1956-58: 131-132, pl. 152). The king is depicted beneath Jesus, along with St. George, the warrior and savior. As mentioned above, this icon reveals the image of Byzantine royal power. St. George, on the other hand, acts as an intercessory between the king and Jesus. We think that both his warrior identity and the fact that he had great supporters in the country of Kartli were effective in the election of St. George. It is also effective to have warrior saint and religious martyr. The warriors of David who participated in the battle of Didgori in 1122 against the Seljuks are said to have seen St. George, according to the sources of *Kartlis Cxovreba* (KC 1 (*David Ağmaseneblis Ist'orik'osi*), 340-341; Vivian, 1991: 24; Fahrnich, 1994: 33-39). St. George is depicted with a shield bearing *Kufic* symbols (Eastmond 1998, 70). In this regard, it can be seen that St. George plays a significant role in Georgian culture. Also, it demonstrates that the royal depictions on the icons were created on both small-scale items and acquired significance in locations outside of Kartli. As well, David is known to have contributed money and support to numerous monasteries and sacred locations throughout

the Christian world, including Mount Athos, Jerusalem, Cyprus, Sinai, and Libya (KC 1 (*David Aḡmase-neblis Ist'orik'osi*), 352²³.353⁷; Vivian, 1991: 36). This situation has proven by a symbol of the king that was discovered at the Sio-Mgvime monastery next to Mcxete, embellished with pearls and valuable stones (Martin-Hisard, 1991: 147).

We would like to make some theological and historical comments about David and St. George's relationship. St. George is the religious martyr of Jesus. He was a Christian's holy warrior, soldier, and savior saint. In their depictions, warrior traits are frequently highlighted. Due of this, St. George's depictions instill sense of security and loyalty in Christians while simultaneously creating an apotropaic power against their enemies. His status as military saint stems from his role as savior. This mission sheds light on the hypothesis that people who believe in it feel even more secure. David has almost the same situation as St. George. Under the reign of his father, Giorgi II, his country faced serious political, military, and socio-economic challenges. Furthermore, the people who were forced to move and slaughtered as a result of the Seljuks' activities created a great chaos in the society. These were the two events that the king had to manace with. By bringing the events to a close with his military successes, the king assumed a crucial savior role, calling the Christians to salvation. The king's triumph enabled Georgian society to restore strength and continue their presence in Tao-Klarjeti. Because of this, it is possible to read the chapel's portrayal of the warrior St. George and the inscription bearing the name of the monarch as references to two different Christian saviors.

After winning the wars against the Seljuks, David helped advance Christianity by funding the restoration, and construction of monasteries in the regions from Kartli, Tao-Klarjeti and Athos to Libya. Because

the Georgian people left the monasteries, and went to the mountainous areas during the Seljuk activities in Tao-Klarjeti. Following David's conquests, these peoples returned to their previously built abodes. In this context, the conversion of part of a building belonging to the Vachedzori monastery into a chapel most likely took place after the military successes of the king. There should be evidence of this in the inscription here. E. Takashvili reported that he discovered an inscription from 1306 on the construction of a building related to St. Stephen's church in the monastery (Takashvili, 1938: 34). This inscription clearly indicates that the Vachedzori monastery underwent repair. The inscription, however, does not provide enough information to associate it to the chapel. Therefore, we can say that the inscription in the chapel bearing David's name is a reliable dating criterion.

As a result, the Painted Chapel was created by rearranging a section of a structure belonging to the Vachedzori monastery and afterwards adding architectural and theological scenes. This structure was arrangement as a chapel during the reign of the King David IV who defeated the Seljuks in Tao-Klarjeti in the 12th century AD. This situation is proven by the architectural arrangements in chapel and the two-line inscription inscribed in the Georgian alphabet Asomtavruli. This inscription also functions as a "terminus ante quem" for dating the chapel. On the other hand, the chapel's wall paintings display characteristics of the 13th century AD when compared to Georgian, Byzantine, and Cappadocia art iconography in terms of theme and style. The letter character used to write the names of the figures in the murals is also similar of lettering from the 13th century AD (the writing style here belongs to the Asomtavruli alphabet). The Painted Chapel has been dated to the 12th-13th centuries AD in this context.

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