



PÁZMÁNY PÉTER CATHOLIC UNIVERSITY
FACULTY OF HUMANITIES AND SOCIAL SCIENCES
DOCTORAL SCHOOL OF HISTORY

MOSAIC PAVEMENTS OF EARLY BYZANTINE CHURCHES

NEAR ALEPPO, SYRIA

An analytical and comparative study

A dissertation submitted for a doctoral degree in the Doctoral School of History

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DEDICATION

To my **great parents** who supported me a lot in completing this project within the limited time, even though they are in Syria, and I am in Hungary. However, this far distance did not prevent them from encouraging me to do my best and be proud of me.

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ABSTRACT

This dissertation examines the mosaic pavements of Byzantine churches in Aleppo and its surrounding region, viewing them as an integral part of the artistic and cultural heritage of the Christian East, such as al- Mazrʿa Al-ʿUliya, Tell ʿAmārana, al-Nabgha, Deir Qinnsrīn(Qinnasrin Monastery), Zamka, ʿElî Bîskê, ʿUqlat al-Bwydr, and Tell Bājr, and al-Mankūba, which were discovered between 2000 and 2011 by joint efforts of the Directorate of Antiquities and Museum of Aleppo and foreign archaeological missions. All the mosaics discovered date back to the early Byzantine era. The research argues that the Aleppo mosaics represent a distinct local artistic tradition, rather than a mere imitation of Antiochene or Constantinopolitan models.

The significance of this research lies in its examination of the history, characteristics, general attributes, and prominent decorations of mosaic pavements in early Byzantine churches of Aleppo, based on the results of recent archaeological excavations conducted by national and international missions. Researchers conduct a comparative analysis with mosaic schools in the Levant. Additionally, this research examines the Hellenistic, Roman, and local influences in northern Syria, exploring the religious, artistic, and economic implications of these influences. It examines the various techniques employed in the artistic creative application of early Byzantine mosaic materials, as well as the restoration and conservation of mosaics and the identification of raw materials used in mosaic manufacturing through modern discoveries.

Furthermore, the research examines the conditions and provides suggestions for improved restoration and display of these mosaics, comparing them to church mosaic pavements in Jordan, Palestine, and Antioch. The investigation of factors causing damage and deterioration is conducted, aiming to identify scientific foundations for restoration, maintenance, and treatment processes through proposed and diverse programs studied herein to address these issues effectively.

The analysis reveals a strong continuity between Classical artistic traditions and Early Christian iconography, showing how ancient motifs – such as vines, peacocks, and geometric compositions – were reinterpreted within a new spiritual framework. The study concludes that the mosaic art of Aleppo embodies both the continuity of classical heritage and the emergence of a distinct local Christian identity, making it a key chapter in the broader history of Byzantine art in the Eastern Mediterranean.

The research encompasses multiple axes:

Documentary study: Examining sources, books, and archaeological reports focusing on early Byzantine church mosaic pavements, the emergence, and evolution of this art form, various schools dealing with mosaics, techniques for mosaic creation and preparation, general characteristics, essential decorations, and mosaic subjects.

Comprehensive analysis of the status and challenges faced by all mosaic pavements, along with their documentation and development of solutions and suggestions to address these challenges, while formulating restoration and conservation plans.

Keywords: *Byzantine churches, mosaic pavements, archaeological excavations, comparative analysis, Hellenistic influence, Roman influence, local influences, religious implications, artistic implications, mosaic techniques, restoration, conservation, raw materials, Animal Motif, Geometric Motif, Plant Motif, Syria, Pebble mosaic, Tesserae.*

OBSERVATIONS ON TRANSCRIPTION

The Transcription of Arabic: Giving Arabic Words or Expressions into Latin Characters. Transcription serves the purpose of smoothly quoting an Arabic vocabulary or phrases in a text that has written in English or other languages with Latin characters, particularly catering to readerships does not master Arabic. During the transcription process of Arabic names into Latin characters, the use of complex fonts has been avoided. Instead, diligent efforts have been made to be the distinct Arabic characters using the most straightforward combinations of Latin characters whenever possible. The relevant concordances of these transcriptions are succinctly presented in the tables below:

أ	**a**	ط	**ṭ**
ب	**b**	ظ	**ẓ**
ت	**t**	ع	**ʿ**
ث	**th**	غ	**gh**
ج	**j**	ف	**f**
ح	**ḥ**	ق	**q**
خ	**kh**	ك	**k**
د	**d**	ل	**l**
ذ	**dz**	م	**m**
ر	**r**	ن	**n**
ز	**z**	هـ	**h**
س	**s**	و	**w**
ش	**sh**	ي	**y**
ص	**ṣ**	ء	**ʾ**
ض	**ḍ**	ة	**a**

Long vowels are indicated with dash line.

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INTRODUCTION

Recent archaeological excavations near Aleppo city have uncovered numerous Late Antique and Byzantine floor mosaics that once adorned ancient buildings and churches. Composed of mainly stone and rarely glass tesserae, these mosaics not only enhanced architectural aesthetics but also provided valuable insights into Syria's history and cultural heritage during these periods. This study focuses on analyzing characteristics of the discovered mosaic scenes.

The Levant emerged as a major center for mosaic production, with key sites like Apamea, Ṭayibat al-Imām, Madaba, Jerash, Antioch, and Ḥawrān, distinguished by their diverse styles and exceptional craftsmanship.

RESEARCH SIGNIFICANCE

Syria is home to a vast array of Late Antique and Byzantine mosaics, many of which have only recently been discovered. This research relies on the earlier studies and my excavation and restoration experience, contributing to the broader understanding of Byzantine mosaic artisanry in the region.

RESEARCH AIMS AND METHODOLOGY

- Conduct a comprehensive study of the excavated church mosaics in Aleppo.
- Compare these mosaics with others in Syria and the Levant.
- Analyses decorative patterns, tracing influences from Hellenistic-Roman traditions and local Syrian innovations.
- Investigate manufacturing techniques, raw materials, and deterioration factors, while also dealing with the damage and possible treatments.

Methodologically, the study involves a documentary review of archaeological reports, historical sources, and previous studies on Byzantine mosaics. It also includes fieldwork aimed at re-documenting mosaic pavements, assessing their current condition, and proposing conservation plans.

ABOUT STRUCTURE

The thesis is organized into Dedication, Acknowledgement, Abstract, Observations on the Transcriptions, Table of Contents, List of Figures, Maps, Introduction, and eight chapters:

Chapter I: Geographical And Historical Framework of Northern Syria and Previous Studies

Chapter II: History, Techniques, and Development of Mosaic Art.

Chapter III: Characteristics and Themes of Early Byzantine Mosaics.

Chapter IV: Early Byzantine Ecclesiastical Architecture and Mosaic Art.

Chapter V: Techniques Used in Early Byzantine Mosaic Craftsmanship.

Chapter VI: Damaging Factors of Mosaic Pavements and Treating Methods

Chapter VII: Mosaic pavements of early Byzantine churches near Aleppo through the archaeological excavations, including al-Mazraʿa al-ʿUlia, the mosaic pavement of Tell ʿAmārana, the mosaic pavement of the church of St. John Martyr (al-Nabgha), Deir Qinnsrīn (Qinnasrin Monastery), al-Mankūba, ʿUqlat al-Bwydr, Zamka, Tell Bājr, and Elî Bîskê.

Chapter VIII: Comparative and Analytical Study.

The research also includes a conclusion with the main findings, a list of abbreviations used, and a comprehensive bibliography.

CHAPTER I

GEOGRAPHICAL AND HISTORICAL FRAMEWORK OF NORTHERN SYRIA AND PREVIOUS STUDIES

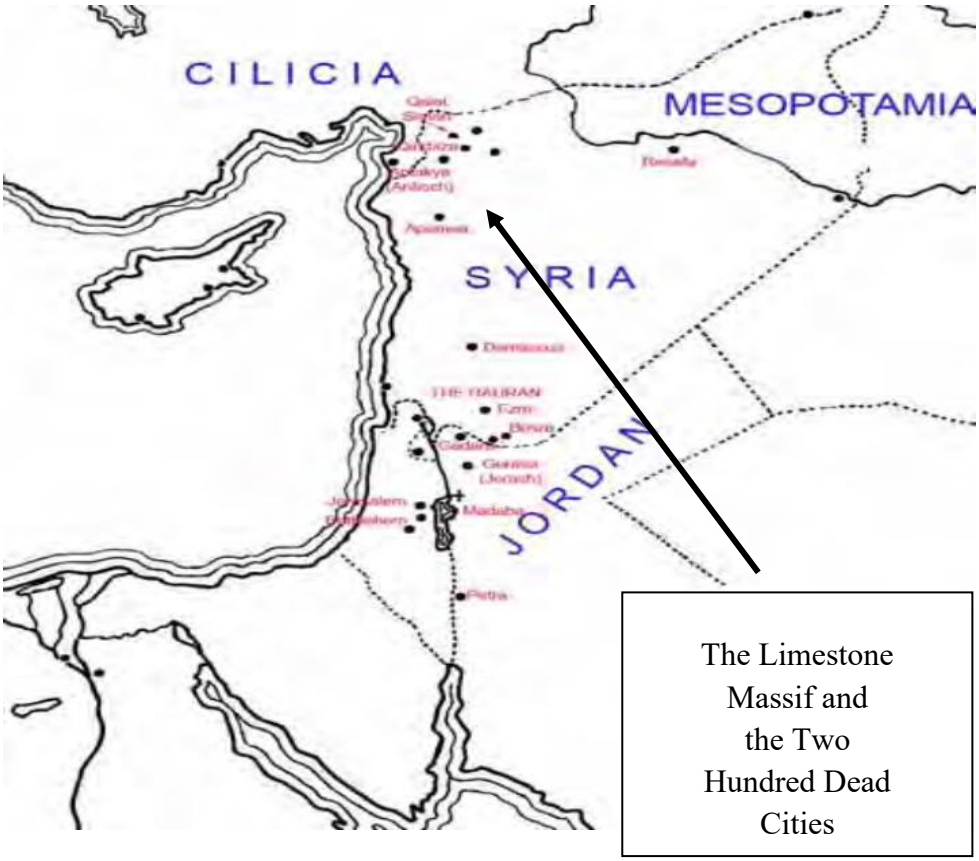

Fig. 1. Map of Syria showing the limestone massif and the two hundred dead cities. This map can be accessed at the following URL: https://www.mileslewis.net/Illustrated-Contents/06-Medieval-Architecture/Byzantine Syria. Created by Miles Lewis.

I. GEOGRAPHICAL FRAMEWORK

Northern Syria, particularly the Aleppo Plateau, is a vital region and one of the richest areas of early Christian archaeological heritage in the Levant. This plateau covers approximately 22,919 square kilometers, extending between the Kurd Mountains in the north and the Simeon and Barisha Mountains in the south, reaching the Euphrates Valley in the east. This geographical expanse made Aleppo a link between Anatolia, Mesopotamia, and the Levant, which is clearly reflected in the development of religious architecture and decorative arts, especially the mosaic floors in churches. Aleppo's strategic location along

ancient trade routes, such as the Silk Road, further increased its importance as a religious, economic, and cultural center throughout antiquity. [1]

The region's geological nature provides essential raw materials for mosaic making, such as white limestone and local marble. These are among the most important elements that provide Aleppo's mosaics with their distinctive color gradations and uniform visual texture. The relatively dry climate also helped preserve these floors better than their counterparts on the western coasts.

The geographical features, including Mount Simeon, Mount Zawiya, and the fertile plains of Qinnasrin, provided ideal conditions for the development of Christian monasticism and church architecture. These sites later became crucial for the spread of mosaic art, where classical Greco-Roman traditions blended with the emerging Christian iconographic tradition.[2] (Fig. 2)

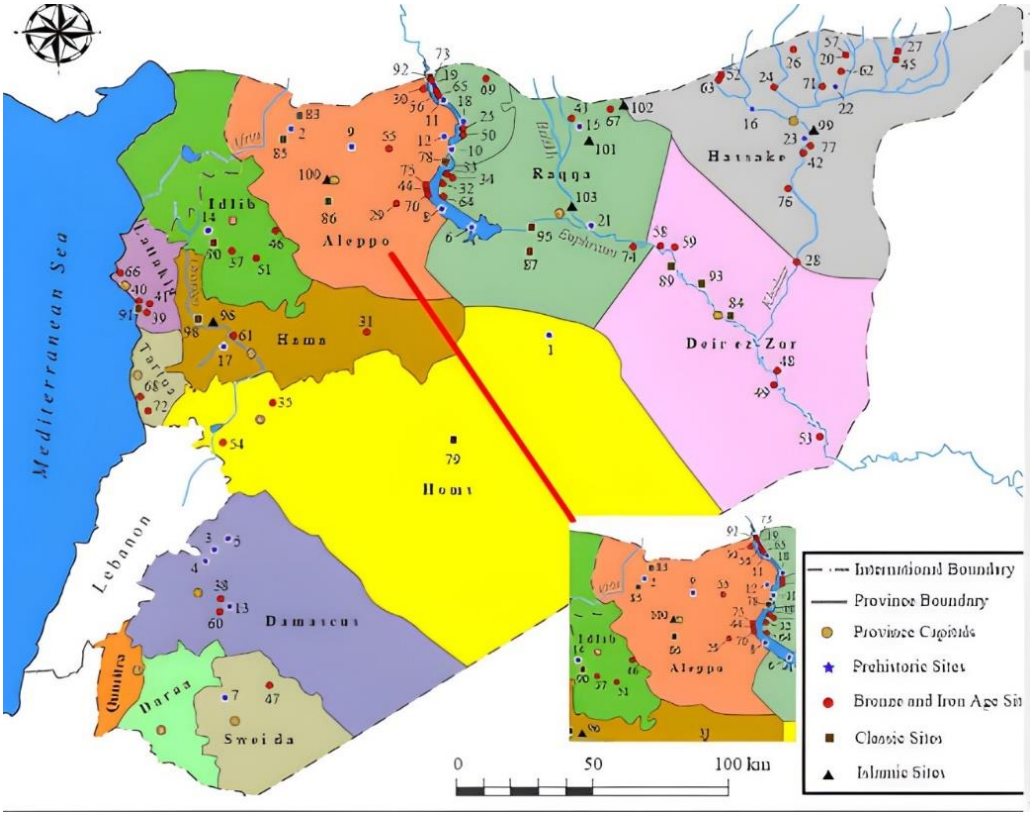

Fig. 2. Map of Syria. (Kanjou, Y., Akira, T. 2018: 7).

[1] Smith, J 2020: 15 - 20.

[2] Ibid., 45 - 50.

II. HISTORICAL FRAMEWORK

II.1. Historical and Architectural Context

In the fifth century AD, there was a flourishing of church construction, particularly in the so-called "Dead Cities" between Idlib and Aleppo. This religious and urban boom coincided with significant political transformations in the Eastern Roman Empire, during which the features of Early Byzantine culture began to crystallize.[3]

While earlier studies sharply separated Late Roman Art from Byzantine Art, recent research (e.g., Brown, 2012; Finney, 1997; Beckwith, 1979) confirms that the transition was gradual and that mosaic art in Syria clearly embodies this Classical continuity.[4] Archaeological sites in the region—such as Qinnasrin, Brad, and Tell Amarna—show how new Christian symbols were integrated into an ornamental framework derived from Hellenistic and Roman heritage, forming a distinctive artistic identity for the region. This highlights the importance of studying the church mosaics in Aleppo as a reflection of cultural and artistic transformation, rather than merely as architectural decoration.[5]

II.2. Classical Syria to Early Christianity

Syria's integration into the Hellenistic world, following Alexander the Great's conquests, laid the foundation for Greco-Roman artistic traditions, including mosaic production. Under Roman rule, Syria became a prosperous province with flourishing urban centres, temples, and public buildings adorned with intricate mosaics. By the fourth century AD, the region had undergone significant Christianization, influencing not only religious practices but also visual culture.[6]

Aleppo and its surroundings became a major centre of Christian thought and art, marked by the construction of churches, monasteries, and martyr shrines. However, unlike other Byzantine provinces, Syria kept a distinctive artistic identity, often blending Eastern motifs and local materials with imperial styles. [7]

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[3] Smith, J 2020: 62 -65.

[4] Brown, P 2012: 45 - 48.

[5] Smith, J 2020: 88 -91.

[6] Ibid., 88.

[7] Ibid., 90–91.

II.3. Religious and Cultural Diversity

One often-overlooked aspect of the region is its complex religious landscape during the Late Antiquity period. Beyond Chalcedonian orthodoxy, groups such as the Jacobites and Monophysites played a vital role in shaping ecclesiastical art and architecture. These communities, often marginalized within the imperial hierarchy, continued to produce sacred buildings and mosaic programs reflecting their theological perspectives.[8]

In this context, it is important to ask whether differences in theological belief are also manifested in architectural layouts or decorative schemes. Comparative research on Arian, Donatist, and other 'heretical' Christian groups in regions such as North Africa and Ravenna suggests that ideological divergence did influence visual expression.[9] (Fig. 3)

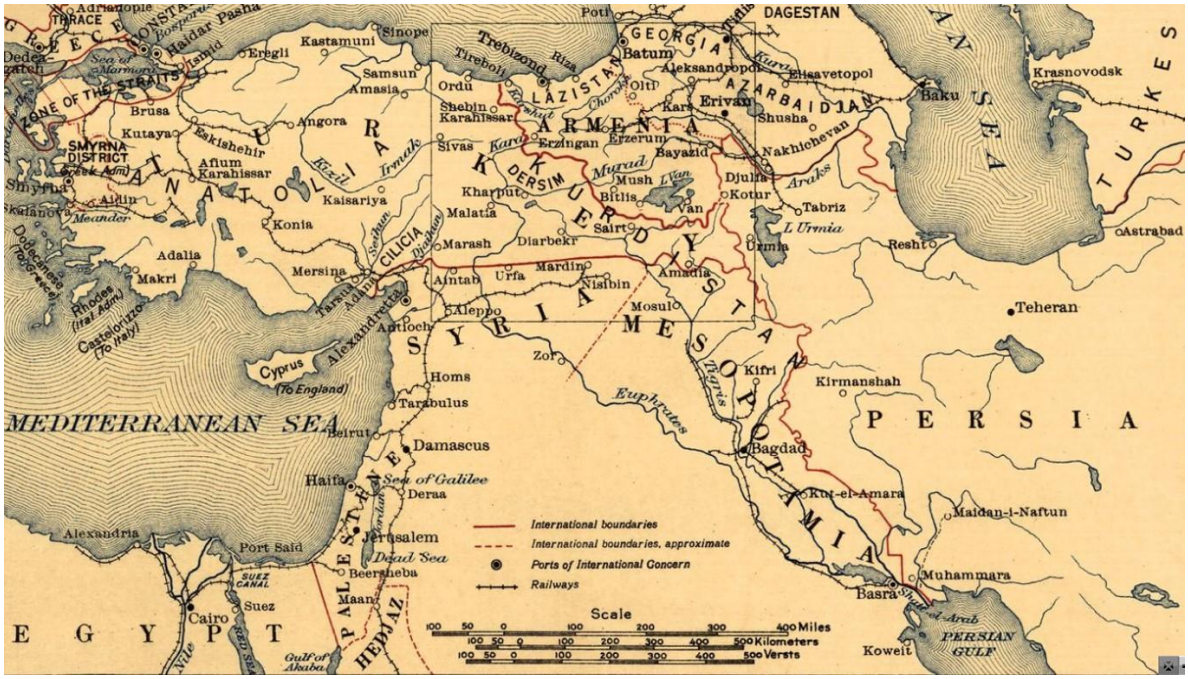

Fig. 3. Historical Map of Syria. (Image source: Google).

III. PREVIOUS STUDIES

This section reviews and analyses the most important studies and research on mosaic art in the Byzantine East, focusing on those related to the churches of Aleppo. The purpose of this presentation is not merely to gather information but to situate this thesis within the

[8] Davis, L 2018: 112–115.

[9] Ibid., 115.

broader field of scholarship by highlighting the contributions of earlier studies and identifying areas that remain unexplored or incomplete.

III.1. Technical and Stylistic Studies

Byzantine mosaics still rely heavily on the early work of Ernst Kitzinger[10] and Dorothy Levi.[11] The evolution of artistic and technical elements in the Eastern Mediterranean, particularly in Antioch, Cyprus, and Northern Syria, is traced in this study. This demonstrates the relationship between the late Roman era and local workshops.

These investigations are useful, but their scope is constrained. They do, in fact, primarily concentrate on formal and technical concerns. However, the symbolic and geographical aspects are still largely studied. A more comprehensive method would be adopted by later academics like Jean Balty[12] and Jean-Pierre Sodini,[13] who would link the production of mosaics to the local economy and society.

III.2. Iconographic and Symbolic Approaches

Contemporary researchers are studying the theology and symbolism present in early Christian mosaics. The advantages of visual language in Byzantium were particularly useful to theologians seeking to convey themes of redemption, resurrection, and eternity, as noted by Robin M. Jensen,[14] Thomas Mathews,[15] and Peter Finney.[16] Kurt Weitzmann[17] argued that Byzantine art reinterpreted its Classical foundations within a Christian symbolic context rather than abandoning them.

The mosaics of Aleppo are regarded as an extension of classical traditions prevalent throughout the early Christian era. This perspective provides a significant basis for the current investigation.

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[10] Kitzinger, E 1965: 347.

[11] Levi, D 1947: 27–35.

[12] Balty, J 1995: 88.

[13] Sodini, Jean-P 2002: 201–219.

[14] Jensen, Robin M 2000: 64.

[15] Mathews, T 2010: 122.

[16] Finney, Peter C 1997: 112.

[17] Weitzmann, K 1979: 139.

Paulette Donceel-Voûte[18] and James Trilling[19] also examined the decoration used by Syrian and Lebanese church officials, including various types of vines, birds, and peacocks symbolising eternal life. However, none of these studies has provided a comprehensive analysis of Aleppo churches, resulting in a significant research gap that this dissertation seeks to address

III.3. Comparative Studies

The regional diversity of Byzantine mosaic production has been examined by several scholars, particularly the artistic connections between Northern Syria and the Southern Levant. Researchers such as François Baratte[20] and John Alchermes[21] have highlighted the contrast between the narrative richness of the southern provinces and the geometric abstraction of the northern schools. This distinction is especially evident when comparing the mosaics of Aleppo, Madaba, and Antioch. Significant archaeological surveys and local assessments of Syrian mosaic sites, especially those in the so-called "*Dead Cities*" region north of Aleppo, were introduced to the Arabic academic community by Michel al-Maqdisi.[22] Although these works are valuable for their field-based documentation, they are largely descriptive and lack the symbolic analysis and comparative depth necessary to understand Aleppo's unique artistic character.

III.4. Syrian and Joint Archaeological Studies

Over the past forty years, many Syrian and joint missions have made significant contributions to the study of Byzantine mosaics and ecclesiastical architecture in Northern Syria, alongside classical and global studies. These studies, which often combine architectural documentation with archaeological excavation, have produced crucial empirical evidence for understanding the artistic and cultural background of Aleppo and its surrounding area.

One of the pioneers in this subject is Dr. Widad Khoury, whose book *Monuments of Deir Sita* (Damascus, 1987) provides a thorough architectural and archaeological analysis of

[18] Donceel-Voûte, P 1988: 59.

[19] Trilling, J 1989: 27–72.

[20] Baratte, F 2001: 110.

[21] Alchermes, John D 2005: 351.

[22] Al-Maqdisi, M 2004: 57.

the monastery site of Deir Sita located in Jabal Bārisha, in the northwest Syrian limestone mountains. Her attention to decorative features, such as capitals, lintels, and symbolic motifs, provided an early model for contextual interpretation of architecture. Her study integrated geographical, sociological, and artistic assessments of the Roman and Byzantine settlement.

The findings of the Syrian French archaeological expedition, which has been conducting systematic excavations at the sites of Sirjilah, al-Bārah, and al-Ruweiha since 1994 under the combined leadership of Professors Gérard Charpentier and Maamoun Abdul-Karim, are equally important. In order to comprehend the development of Byzantine church architecture in Northern Syria, these expeditions supplied vital stratigraphic and architectural information.

Komait Abdallah has conducted additional research. His doctoral dissertation, *La Mosaïque du Québec de Maʿarrat al-Nuʿman* (Sorbonne University, 2009), provided a pictorial and symbolic analysis of the mosaic pavements on display in the Maʿarrat al-Nuʿman Museum, offering significant insight into regional stylistic variations.

In a similar vein, Tell ʿAmārna (Syria): *The Byzantine Basilica and its Mosaic* (Liège, 2011) was published by the Belgian archaeological mission headed by Önhan Tunca, Tomasz Waliszewski, and Vassilis Koniordos. It presents the basilica and its pavement mosaic in detail and is still one of the few comprehensive publications of a northern Syrian mosaic site.

The research of Dr. Mai Touma, a Syrian archaeologist with expertise in Classical and Byzantine archaeology, is another noteworthy contribution. She was involved in the discovery and examination of the Byzantine church at Tell ʿAmārna on the Upper Euphrates and has written extensively on related subjects in Arabic and French.

In the same vein, Amal Nasr Hussein's M.A. thesis, *The Animal Scenes in the Byzantine Mosaic Pavements in Northern Syria* (Damascus University, 2018), analysed the depiction of fauna in northern Syrian mosaics, emphasizing their symbolic significance within early Christian iconography.

Of particular relevance to this dissertation are the excavations led by Dr. Youssef Kanjou and the Syrian Directorate-General of Antiquities and Museums (DGAM) in al-Nabgha al-Kebira (Jarablus region) in 2007. Conducted as part of a Syrian French cooperative project directed by Françoise Briquel Chatonnet, Alain Desreumaux, and Nichola

Kabbad, this mission unearthed a Byzantine church with a mosaic pavement and Syriac inscription, later published as The Church of St. John Martyr on the Middle Euphrates.

Since 2006, the Syrian mission in Aleppo, under the direction of Dr. Kanjou, Dr. Houmam Saad, Dr. Muhammed Fakhro, and Arch. Youssef Dabety, Adnan al-Mohammed, Abdullah Nasser, Firas al-Haj Ali, and Qais Abboud have conducted both systematic and emergency excavations across the Aleppo Governorate. These include important Byzantine-period sites such as Deir Qinnasrin, al-Nabgha, Tell ʿAmārna, Zamka, ʿUkla al-Bwydir, Tell Bājr, and Elî Bîskê, all of which revealed church pavements richly decorated with mosaics dating from the 5th and 6th centuries.

These expeditions have significantly increased the archaeological record of Aleppo's religious legacy, offering concrete proof of the Byzantine mosaic art's geographical dispersion and artistic diversity. By doing this, this study seeks to close a long-standing gap and reclaim Aleppo as a crucial hub for the development of Byzantine visual identity in the Eastern Mediterranean.

CHAPTER II

HISTORY, TECHNIQUES, AND DEVELOPMENT OF MOSAIC ART

I. THE HISTORY OF MOSAIC ART

I.1. Mosaic Art in Antiquity

The origins of mosaic art date back to the late fourth millennium BC in the Sumerian temple of Uruk, where conical clay pieces colored in white, black, and red were arranged geometrically on walls — an early form of mosaic decoration. Later, in the Royal Cemetery of Ur (2700–2500 BC), rectangular panels composed of shells and stones represented early attempts at pictorial composition. [23] (Fig. 4) By the ninth century BC, large black and white pebbles were used in Syria (Arslan Tash and Tell Ahmar) to create patterned pavements, marking a new stage in technical and aesthetic development. [24] (Fig. 5)

[23] Arus, J., & Wailenfels, R 2003: 18-19.

[24] Nwafel, O 2012: 57.



Fig. 4. Courtyard Featuring Cone Mosaic Columns decorating a Staircase in the Eanna Precinct, Uruk. Late Uruk Period, ca. 3300–3000 BC. (Arus, J., & Wailenfels, R., New York, 2003: 19).



Fig. 5. Mosaic Pavement in Area C, Building C1 at Tell Ahmar Site, Syria, dating back to the ninth century BC. (Bunnens G. 1992: 10).

I.2. Mosaic Art in the Hellenistic Greek era

During the Greek and Hellenistic periods (5th–3rd centuries BC), the use of pebble mosaics became widespread. Craftsmen used small, polished stones set in lime to form decorative and figurative scenes. [25] (Fig. 6, Fig. 7) Gradually, this technique evolved into the *opus tessellatum*, employing carefully cut stone cubes (*tesserae*) that allowed for finer detail and more pictorial representation. [26] An even more advanced technique, *opus vermiculatum*, appeared later, using extremely small *tesserae* arranged in curved rows to achieve subtle color gradations and realism. These were often produced as portable panels, or emblemata, later inserted into larger floors. [27] (**Error! Reference source not found.**, **Error! Reference source not found.**)



Fig. 6. Details of a centaur mosaic pavement pebble discovered in the Centaur Bath, Corinth, located at the northeast corner. (Dunbabin, K.M.D. 1999: 6).

[25] Ibid., 59.

[26] Dunbabin, K.M.D 1999: 6.

[27] Nwafel, O 2012: 65.



Fig. 7. Dionysiac mosaic from Andron at the Villa of Good Fortune in Plinth. (Dunbabin, K.M.D. 1999: 9).



Fig. 8. An exemplary of irregular mosaics, the Asklepion mosaic has discovered on the island of Crete. (Dunbabin, K.M.D. 1999: 19).

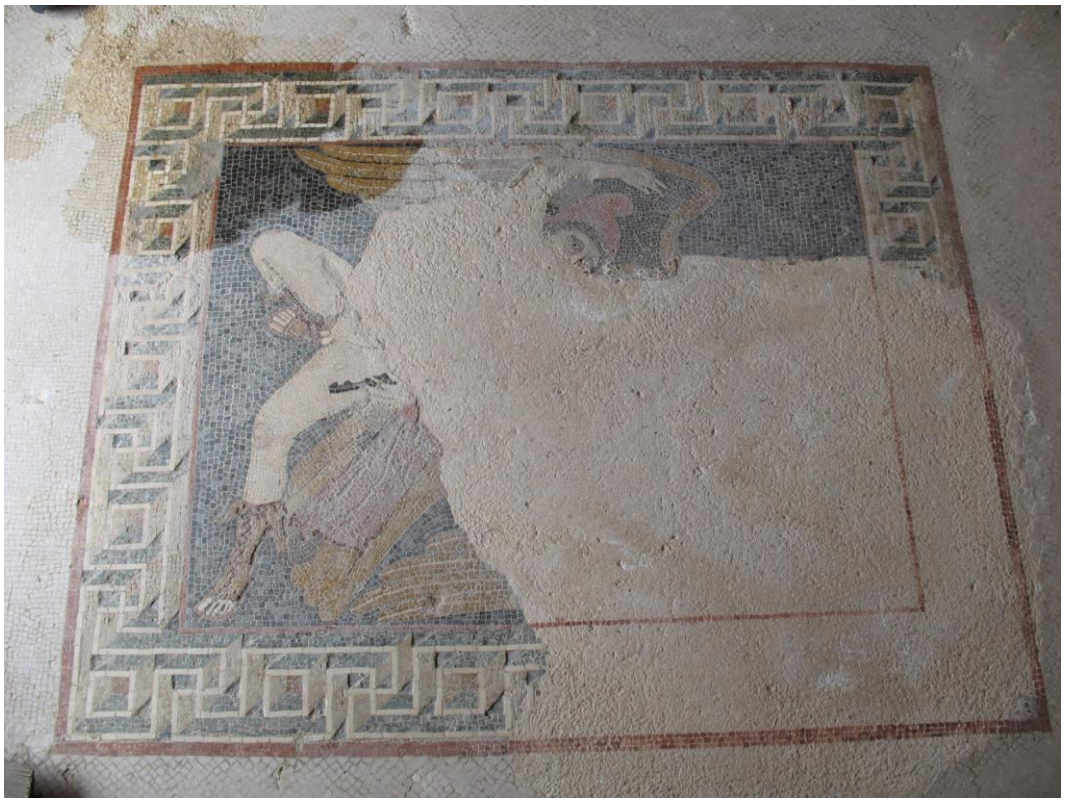


Fig. 9. Mosaic pavement depicting the legend of Ganymede, abducted by Zeus' Eagle in the House of Ganymede (3rd Century BCE), made from regularly cut mosaic tesserae. (Dunbabin, K.M.D. 1999: 139).

I.3. Mosaic Art in the Roman era

In the Roman era (1st century BC–4th century AD), mosaic art reached its peak and became integral to domestic and public architecture. Workshops across the empire produced high-quality pavements featuring geometric and figurative designs, initially in black and white and later in rich polychrome compositions. (**Error! Reference source not found.**) Techniques from earlier periods were refined with improved materials — marble, glass, and sometimes semi-precious stones — to enhance brilliance and durability. (Fig. 11)

The eastern provinces, particularly Syria, Palestine, and Jordan, developed distinctive local styles that combined Greco-Roman techniques with regional motifs. These works displayed remarkable craftsmanship and creativity, reflecting both the cultural diversity and the artistic vitality of the Roman East. [28] (Fig. 12)

[28] Hamdan, O 2012: 18-23.



Fig. 10. The mosaic pavement in the bathroom of the city of Ostia, near Rome, made up of mosaic tesserae crafted from black and white stones, depictions of marine and human beings, as well as fantastical creatures. (Hamdan, O. 2012: 18).



Fig. 11. Roman mosaic depicting Medusa, displayed at the Museum of the Tunisian city of Sousse. (Hamdan, O. 2012: 19).



Fig. 12. Roman-era monochromatic mosaics at the National Museum of Rome, "Palazzo Massimo," depict Nile River scenes of locals in boats hunting crocodiles and animals. (Hamdan, O. 2012: 22).

I.4. Mosaic Art in the Byzantine era

Mosaics were widely used to decorate church walls and floors throughout the Byzantine era, making abundant use of the glass mosaics' range of hues. Utilizing the feature of light reflection, which raises the aesthetic value of the mosaic artwork and church lighting, *tesserae* of the glass mosaic were placed at various angles and curves. Because the stone *tesserae* have greater mechanical characteristics than glass, they were used to cover floors instead of stone and marble cubes, which were used to cover walls and domes. Therefore, stone *tesserae* are more durable than glass and can endure being walked on. The floor was often colored with a few glass mosaic *tesserae*, but only in very modest amounts. During the rule of Emperor Justinian, I and Empress Theodora (547–538) AD, mosaics gained fame in the Byzantine era. Among the most exquisite mosaics from this time period are those that adorn the walls of the churches in the Italian city of Ravenna.[29] (Fig. 13, Fig. 14)



Fig. 13. Byzantine mosaic dating back to the sixth century AD, located within the Church of San Vitale in the Italian city of Ravenna, portrays Emperor Justinian accompanied by his retinue. (Hamdan, O. 2012: 24).



Fig. 14. Byzantine mosaic from the late sixth century AD, situated in the Church of Janus in Madaba, Jordan, features a depiction of a fantastical tree adorned with pomegranate fruits and grape harvests amid its branches. (Hamdan, O. 2012: 24).

In the Byzantine period, mosaics were used realistically or in imitation of the symbols prevalent at the time. Byzantine mosaic art was characterized by creating decorative elements inspired by nature, such as pinecones, grapes, and various fruits. The human and animal elements, which were quite close to nature, were realized in a way that was not

[29] Ibid., 24.

without realism and movement in the motifs. The use of mosaics reached its peak in the late Byzantine Empire, where many examples have been found, especially in the churches of Ravenna, Italy. But also in the Levant, in *Apamea*, Ṭaybat al-Imām, Mʾaduba, Shahba, Jerash, and other important places. And this art dominated all other arts in the Levant in the sixth century, and it was present in the churches that existed in most parts of the Byzantine Empire. (Fig. 15) This art served primarily religious purposes and later documentary purposes, especially the Byzantine wall mosaic since it was based on the representation of inspirations and symbols that attracted many emperors, clerics, and some wealthy believers.

The sixth-century Byzantine mosaic in the apse of the church of *San Vitale* in the Italian city of Ravenna shows Christ sitting on top of the world, and around him are two angels and the bishop of the city of Ravenna, with a model of the church of *San Vitale*, who commissioned its construction, while the second person represents *St. Vitale*. (Fig. 16) In the Levant in general and Syria in particular, many cities and centres appeared during this period in the different regions of Syria and contained different mosaic arts in terms of methods of decoration and their differences. and the most important of these cities are Ṣūrān, Aleppo, *Apamea*, Ṭaybat al-Imām, Shahba, Baniyās, Majdal in Sweidāʾ, Shahba and Maʿrat al-Nuʿmān and others. And regions in the south of the Levant, such as Petra, Jerash, and Mʾaduba, prove the existence of art schools specialized in the production of mosaics with a high level of technical and artistic skills, and this proves the opposite of the belief prevalent in the past that Istanbul (*Constantinople*) was the only important and influential centre in the subjects and styles of mosaic techniques.[30]

[30] Ibid., 26.



Fig. 15. Byzantine mosaic discovered in Madaba, Jordan, portrays a central circle with a picture of a hairy person, their trunks extending from the corners and pairs of animals facing each other, symbolizing paradise. (Hamdan, O. 2012: 25).



Fig. 16. Apse Mosaic in the church of San Vitale in Ravenna, Italy. (Hamdan, O. 2012: 26).

I.5. Syrian School of Mosaic Art

During the fourth and fifth centuries, Syria was a major producer of mosaics, with several of its towns acting as hubs. In Syria, mosaic flooring started to appear on buildings, cathedrals, and the naves of typical churches (Basilicas). frequently placed throughout the room in a pattern resembling a carpet. The "*carpet style*," as it is commonly called, is a characteristic of Syrian mosaics. The floor has a meditative aspect that conveys eternity since it depends on the recurrence of geometric and botanical patterns inside a symmetrical framework without a central axis.[31]

Technically, local craftsmen used marble and limestone *tesserae*. The mosaic pavements were placed in accordance with a specific design plan after many layers of mortar were prepared to assure strength. According to excavations at Tell ʿAmārna, Zamka, and Dier Qinnasrin, Syrian artisans employed sophisticated lifting and treatment methods, demonstrating a long-standing local proficiency in conservation and restoration.

Three primary criteria may be used to categorize Aleppo mosaic embellishments on an artistic level:

- **Flora motifs :**Vines, pomegranates, and entwined branches are examples of vegetal themes that represent paradise and eternity.
- **Animal motifs:** Animal motifs with religious symbolic connotations include gazelles, doves, and peacocks.
- **Geometric motifs:** which link the graphical pieces and provide the scenes' structural backdrop.[32]

Differentiating between Early Byzantine and Late Roman (Antique) mosaics is crucial in this setting. Strict geometric symmetry and realism define the first, whilst the brightness of colors and a propensity for symbolic abstraction set the second apart. This gradual shift in style can be understood in light of the civilizational continuity that Syria has experienced as a bridge between East and West.

[31] Kitzinger, E 1965: 347.

[32] Levi, D 1947: 27–35.

I.6. Byzantine Iconoclasm

The term Iconoclasm (from Greek: Eikōn, "image," and kláō, "I break") refers to the destruction of or hostility towards religious images, known as icons (religious depictions on wooden panels used for devotion). This controversy marked two major periods in the history of the Byzantine Empire when the use of icons was officially opposed by both imperial and religious authorities within the Orthodox Church. [33]

Aleppo region was marginally affected by iconoclasm (726–843 AD), a phenomenon that spread during the Byzantine era. A large part of Syria had been absorbed into the Islamic conquest by the time the imperial decrees prohibiting the veneration of images were issued, and Christian communities were operating under new cultural situations.

Furthermore, most of the mosaic pavements in Aleppo's churches predate the iconoclasm period and are part of a long-standing tradition of symbolic, and occasionally figurative, art. According to this correlation, the region's avoidance of narrative imagery may have resulted from past theological and stylistic preferences rather than the imperial ban.[34]

I.6. Physical Evidence of Iconoclasm in Syria and Jordan

The historical policy of Iconoclasm left tangible marks on early Christian art in the region.

Syria (Al-Nabgha, Eastern Aleppo): The mosaic pavement of the Monastery of St. John Martyr (5th Century AD) shows unambiguous evidence of an iconoclastic act. A central depiction of a cow in front of a tree was deliberately destroyed and disarranged. The figure was later inexpertly restored using mixed *tesserae* that camouflaged the original design but filled the space, reflecting a period of mandated obliteration followed by rudimentary restoration. [35] (Fig. 17)

[33] Von Grunebaum, G. E 1962: Vol. 2, No. 1, 6.

[34] Kemby, J 1994:162.

[35] Balty, J. 2008: 47.

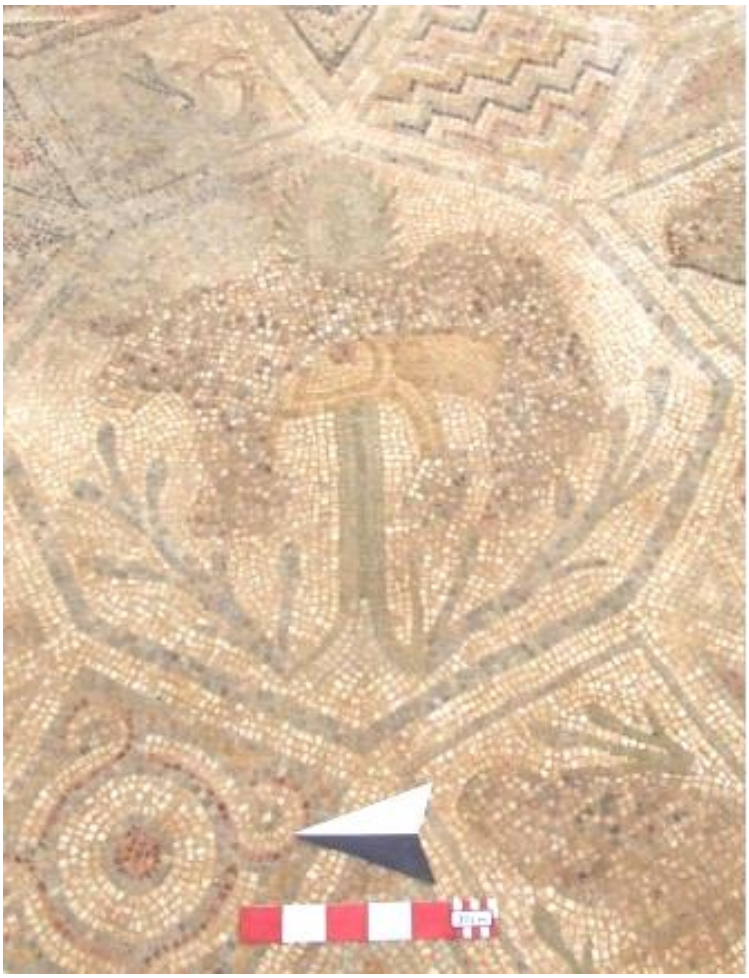


Fig. 17. A camouflaged cow in front of a tree within a circle. (Balty, J. 2008: 47).

Jordan (Umm er-Rasas): Another notable example is found in the Church of the Lions (late 6th Century) at Umm er-Rasas. Here, the bodies of two lions flanking a tree in the upper centre of the mosaic were precisely removed, leaving only their heads and necks. Similarly, an image of a gazelle feeding on a tree was surgically removed from the left side, while a mirror-image gazelle on the right was left intact. This selective and arbitrary destruction suggests acts of targeted defacement in line with the anti-figurative policies of the Iconoclast period. [36] (Fig. 18) In addition to the existing mosaic pavement at the church of St. Stephen, Umm er-Rasas in Jorden with defaced figures and small cities.[37] (Fig. 19) The necessity to repair or cover these defaced areas ultimately led to the establishment of precise theological principles governing the creation of mosaics and drawings, influencing the future of Byzantine Christian art.

[36] Schick, R 1999: https://library.biblicalarchaeology.org. (23.03.2024)

[37] Bowersock, G. W. 2006: 100.



Fig. 18. Mosaic Pavements of the Church of Lions at Umm er-Rasas in Jordan. (Schick, R. 1999: https://library.biblicalarchaeology.org). (23.03.2024)



Fig. 19. Mosaic pavement at the church of St. Stephen, Umm er-Rasas. (G. W. Bowersock 2006: 100).

II. MOSAIC ART & TECHNIQUE

II.1. The Origin of Mosaic

Mosaic art is defined as architectural plastic art used to cover and decorate architectural elements, whether religious or civil, such as floors of rooms, halls, walls, domes, bath floors and water basins, also baptismal fonts etc. with small pieces of stones of various colors and types (calcareous (limestone, marble) or volcanic) as the main material in the manufacture in addition to pieces of glass, brick, or shells, so that they are paved side by side exactly on a layer of mortar (as an adhesive that guarantees its stability) to form unity. This kind of art had no name during the Greek and Roman ancient periods. It frequently gave its items names based on the locations they occupied, or the technique used to make them.[38] The Latin term *opus musivum*, used by the Romans since the first century BC to denote the artistic and decorative element is the source of the word *mosaic*, now used in most European languages and equivalent to the Arabic word Fusayfusā'. A location devoted to the gods of Greek art and consecrated to philosophers and poets is referred to as a "*musaea*" in Latin. The term "*opus musivum,"* which refers to the method employed to create these kinds of artistic elements, first occurs in a Latin book from the reign of Emperor

[38] Fisher, F. E 1971: 7.

Dyuqlidynus (285–305 AD), which describes frescoes made of ceramic *tessera*. This term was used for all types of mosaics executed with this technique.[39]

II.2. Layout and stratigraphy components of the Mosaic Pavement

The mosaic pavement constitutes a significant artistic composition comprising two principal sections:

The First Section (layout)

The following components may be identified in the mosaic pavement' first section:

1. *Al-Wasl* strip refers to the area between the building' architectural borders mainly the walls or a mosaic frame (comprising the borders and frames). This strip is occasionally adorned, but more commonly, it is without decoration.

2. The frame is a decorative piece that can feature either simple or intricate decorations. It can be applied alone, or multiple different frames can be present. It consists of repeated geometric shapes embellished with uniformly parallel and opposing ornamental forms.

3. The main scene, known as the field, is a decorated space encircled by frames and the *Al-Wasl* strip. On occasions, the entire field may be adorned with several scenes.[40]

In the realm of mosaic pavements, a notable characteristic is their composition, which often entails the arrangement of diverse frames and decorated scenes, all unified by a shared thematic motif. It is imperative to distinctly describe the frames and *al-Wasl* strips (commonly recurring frames) associated with each individual scene, thus providing a comprehensive analysis of the mosaics' overall structure and design.

The Second Section (Stratigraphy)

The following layers may be identified in the mosaic pavement' cross section according to Vitruvius [41]:

[39] Nwafel, O 2012: 53-54.

[40] Leblanc, R 1990: 3.

[41] Vitruvius M. P. https://rb.gy/yrvkv4**:** 239-241. (01.04.2024).

1. *Statumen*: First preparatory layer which is made of large stones laid on the ground, previously leveled and rammed. This layer only exists if the mosaic has been constructed on natural soil.

2. *Rudus:* Second preparatory layer which is spread over the *statumen*. This layer is made of a lime mortar with large aggregates.

3. *Nucleus:* Third preparatory layer which is spread over the *rudus* in a thinner layer. The nucleus is made of a mortar with small aggregates, and it is hydraulic nature.

4. *Bedding layer:* Fourth preparatory layer of mortar which is very rich in lime and thinly applied in small sections over the nucleus. The aggregates are very fine. *Tesserae* are inserted in this layer before the mortar sets.

5. *Tessellatum:* Layer which constitutes the mosaic surface and is composed of *tesserae* and mortar filling the interstices between them.[42] (Fig. 20)



Fig. 20 Graphic representation depicting mosaic stratigraphy. (Alberti et al. 2013:111).

[42] Starinieri, V 2009: 5.

II.3. Types and Methods of Mosaic

The Techniques of Mosaic Production: The Direct Method is the typical technique of the historical period. In the direct method of mosaic production, the individual *tesserae* are positioned (glued) directly on the base with fine mortar. This method is well suited for surfaces that have a three-dimensional aspect, such as curved surfaces like vaults or columns or baptismal fonts. This method was used on historic European walls and vault mosaics after signing the main contours *(sinopia)* on the underlying wall or mortar layer, which often reappear when the mosaic falls off. The direct method is suitable also for small projects that are transportable. Another advantage of the direct method is that the resulting mosaic gradually becomes visible, allowing any adjustments to the tile color or arrangement and it is more artistic. The direct method's disadvantage is that the artist must work directly on the surface, which is sometimes impractical over a lengthy period, especially for large-scale projects. Controlling the completed surface's flatness is another challenge.

The present study delves into the various classifications and typologies of mosaics, encompassing an examination of their diverse forms, styles, and characteristics.

The mosaic is an art form in which small pieces of material are arranged to create a cohesive whole. Typically, the materials utilized are marble or other stones, glass, ceramics, metal leaf glass, or shells.[43] Each piece of material is referred to as a *tessera* (plural: *tesserae*). The term interstices are the name for the spaces where the grout is placed. The flow and movement of the *tesserae* are referred to as *andamento*. The '*opus*', the Latin term for 'work', is how the pieces are cut and placed in a varied and known way. Mosaics are of many types and have many names, depending on the size of the *tesserae* used.[44]

These are many types of mosaics:

1. Opus Sectile

Larger pieces cut into a variety of primary geometrical shapes, such as square, cube, triangle, or rhombus, have used to create the main more complex shape. These basic elements have combined to create various geometric compositions, and in the Roman era, stones of assorted colours have used to create beautiful decorations. It should be noted that

[43] Loma, S 2012: 7.

[44] Ibid., 8.

mosaics made using the "*Opus Sectile*" method often decorated the walls in addition to the floors.

Opus Tessellatum

The generally 1-2 cm *tesserae* form vertical or horizontal rows by creating shapes or figures. The tesserae are often mentioned as cubes, but it depends on the location within the mosaic pavement.

2. *Opus Signinum*

This type is the antecedent of the terrazzo pavements, where the mortar made of lime, crushed stone and brick powder or other hydraulic soil was mixed and spread on the grounding layers' top. It was rammed and polished to increase its long-term durability. White *tesserae* frames and scarce motifs have created in this context.

3. Opus Vermiculatum

This type resembles the previous types through the use of different stones in addition to marble and colored glass, and it consists of forms close to reality. One of the archeologists, *Paul Gaukler*, explains that this type was taken from ancient Egyptian jewelry and that the method of *opus vermiculatum* was used by the ancients to perform high-quality and sophisticated works, as this type is the closest to the works depicted on the walls due to its beauty and accuracy of execution. [45] To achieve this level of artisanship, the craftsmen used stone and glass *tesserae* of different and unequal tiny sizes to implement the scenes they relied on marble or terracotta *(emblema*) or directly into the mortar (*pseudo-emblema).*

4. *Opus Regulatum:* A grid of all *tesserae* aligned both vertically and horizontally.

5. *Opus Palladianum:* Instead of forming rows, the *tesserae* are irregularly shaped. Also known as "*crazy paving*".

6. *Opus Classicum:* When *vermiculatum* has combined with *tessellatum* or *regulatum*,

7. *Opus Circumactum:* The *tesserae* have laid in overlapping semicircles or a fan shape.

[45] Badawi, H 1998: 99.

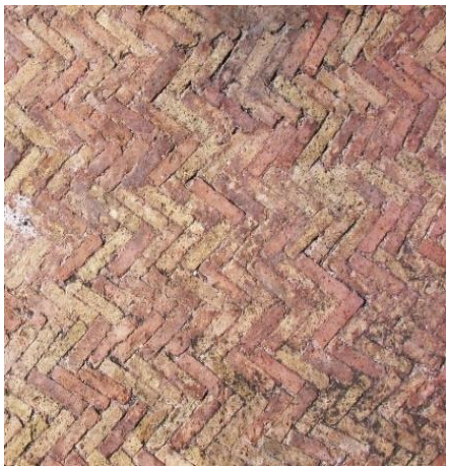
8. ***Micromosaic:*** Use of exceedingly small *tesserae*, in Byzantine icons and Italian decorative panels from the Renaissance onward.[46] (Fig. 21)



Opus Tessellatum



Opus Sectile



Opus Spicatum



Opus Figlinum



Opus Signinum



Opus Scotulatum

Fig. 21. Some types of pavements and mosaics. (Alberti et al. 2013:112 - 114).

[46] Loma, S. 2012: 8.

III. DEVELOPMENT OF MOSAIC ART

The northern region of Syria is considered one of the regions where most of the mosaic pavements from the Roman and Byzantine periods have been discovered. Antioch, the Syrian capital at that time, was the main source for the spread of mosaic art in Syria and in the Levant in general, and the archaeological excavations carried out in the last decades in northern Syria led to the discovery of a large group of mosaic pavements from different periods, in addition to the large number of mosaic pavements discovered in the dead cities (the forgotten cities) in the limestone massif, most of which were pavements of Byzantine churches. This area was one of the most important centers of mosaic production in the Roman and Byzantine periods. The enormous number of mosaic pavements discovered provided us with valuable information that allows us to follow the development of mosaic art in this region in certain phases. As for the Hellenistic period, no mosaic pavements were found in Antioch and *Apamea*, and through the results of the archaeological excavations, it was figured out that the first records of the mosaics are Roman and date to the 2nd century AD and are considered direct heirs of the Hellenistic mosaics. Through the pictorial drawings and the technique syllabus, in addition to the style and themes, according to Hussein[47] we can distinguish three chronological phases that illustrate the development of mosaic art in northern Syria:

1. The first stage extends from the beginning of the 2nd century AD to the end of the 3rd century AD and is characterized by brilliant innovations based on ancient mythology.

2. The second stage covers the 4th century AD and is a transitional phase in which shifts in style and theme are expressed.

3. The third stage extends from the end of the 4th century to the beginning of the 7th century AD and involves the abandonment of pagan ideas and mythical motifs and the adaptation to the teachings of the emerging Christian faith.

The First Stage

From the beginning of the 2nd century to the end of the 3rd century AD: At the beginning of the 2nd century AD of, the northern region Syria experienced a very

[47] Hussein, A 2018: 67-68.

remarkable phase of constructional and artistic development, which was reflected in the mosaic art and led to its diffusion in most of the houses and villas in Antioch and *Apamea*. The most important feature of mosaic pavements in this period is the tradition of the style used in the murals of Pompeii (Italy) since the 1st century BC.[48] The mosaic pavements were used in the 1st century BC. The pavement consisted of a central scene with themes mainly from Greek mythology, treated in a pictorial style, surrounded by geometric and floral motifs in a method that corresponded to the pavement where the value was in the central scene. The pictorial forms were inspired by inherited patterns based on the earlier Hellenistic tradition, and ideas were again borrowed from traditional mythology, but here they were mixed with geometric impulses, and in Antioch, many examples clearly show the development of this art and its adoption in the second century. The classical style was the period of *Hadrian* and *Antoninus*, where the representation in this period was characterized by the use of harmonic *polychromy* and the representation of the third dimension in an elaborate method. These features are evident on the banquet mosaics discovered in *Daphne*, 10 km south of Antioch, and dated to the end of the 2nd century AD. This mosaic includes two fields, one of which is semicircular, with a representation of *Ganymedes* offering water to the eagle of *Zeus*, and behind a tree standing in a disk surrounded by silver plates, there is food in it and bread next to it. (Fig. 22)

In the period of the *Severian* dynasty (235–193 AD), mosaic art experienced an advanced and lively stage. Here the influence of realism was shown through the use of ingenuity in color gradation and shading technique depending on the contrast between shadow and light, in addition to the representation of the scene in a real way through the power of the eloquent look with deep meaning evident in the movement of the eyes and through the inclined positions. This was shown in many mosaics executed specifically in Antioch, as in the mosaics of *Dionysus* and *Ariadne.* (Fig. 23) In the late 3rd century AD, a new aesthetic emerged. This period can present more exciting compositions, such as imaginary buildings, prepared moldings decorated with colors, capitals of Corinthian columns rich in decorations, in addition to the appearance of shadows and lights to create the third dimension.[49] We also have the most famous mosaic in Antioch, which shows the gigantic building where the drinking contest between *Hercules* and *Dionysus* takes place in

[48] Gharib, A 2010: 9.

[49] Balty, J 1991: 27.

the House of the Drinking Party. (Fig. 24) It is noteworthy that this particular stage signifies a period of flourishing and advancement in mosaic art, gradually permeating various regions of Syria and the broader domains of the Empire.[50]



Fig. 22. Antiochia ad Orontes Buffet (Buffet Supper) Mosaic, Daphne (Harbiye), Antakya, third century AD. (Pamir. 2014: 85).



Fig. 23. Ariadne Mosaic, dating from the second-third century AD, Hatay Archaeology Museum in Antioch, located in the Hatay province of Southwest Turkey. (Hussein, A. 2018: 192).



Fig. 24. Mosaic pavement: drinking contest of Herakles and Dionysos, early third century A.D. (Gift of the Committee for the Excavation of Antioch to Princeton University. (Princeton, N.J., 1990.The Art Museum, Princeton University. artmuseum.princeton.edu).

[50] Balty, J 1989: 508.

The Second Stage

During the 4th century AD, the Mediterranean area in general experienced many pivotal changes, the most important of which was the division of the Roman Empire into two parts, whose western capital was Rome and whose eastern capital was Constantinople. However, the effective role of events in the East started from the city of Antioch, and from it, the art of mosaics also started, as Antioch was considered the starting point of inspiration for creative craftsmen in the art of mosaics. Some craftsmen confirmed that this stage confirms the birth of a new artistic style in the field of the mosaic that involves the translation of various concepts, especially when choosing themes that were used throughout the 3rd century. Except that the craftsmen here began to express it timidly in harmony with the new Christian religion that was beginning to spread among the rows of the authorities and the citizens.[51]

Fidelity to ancient tradition was reaffirmed in northern Syria until the end of the 4th century AD, and there was a significant series of mosaic pavements found in Antioch and *Apamea*, through which it is possible to confirm the desire of the craftsmen not to abandon the artistic and idealistic methods followed in the classical era, but they insisted on renewing this picturesque and ideal style, and these methods have spread and expanded over a large area of the Mediterranean basin. [52] There are many examples but the most important being the appearance of the goddess *Tethys*, who embodies the sea and whose stories spread quickly and were depicted on the mosaic pavements in the fourth century AD. Here we have a mosaic pavement of *Oceanus* and *Tethys* from the Mosaic Museum of Antioch, where *Oceanus* in Greek myth symbolizes the great river that surrounds the earth. (Fig. 25)

In this stage, the mosaic pavements became larger to decorate all occupied spaces, and the scenes were surrounded by one or more geometric frames, so that the scenes were no longer isolated, but became an inseparable part of the rest of the mosaic themes. Between the years 360 - 380 AD the mosaic gradually began to earn the type that became known as carpet mosaic, surrounded by precisely organized geometric frames and perimeters in the style of rainbow colors.[53] The geometric type developed in this stage, the geometric motifs of

[51] Balty, J 1977: 3.

[52] Al-Miqdad, K. I. 2008: 32.

[53] Balty, J 1999, A: 321.

different shapes and rich colors overcome the rest of the scenes. Many examples illustrate the development of geometric decorations through the mosaic pavements that spread in all archeological sites in the northern region of Syria, one of them was the Khirbet Mūqa mosaic discovered near Maʿarat al-Nuʿmān in Idlib province, which dates to 393 - 394 AD.[54] (Fig. 26)



Fig. 25 Mosaic Pavement: Oceanus and Tethys, a Greco-Roman mosaic dating to the second century A.D., has housed at the Gaziantep Museum (Hussein, A. 2018: 193).

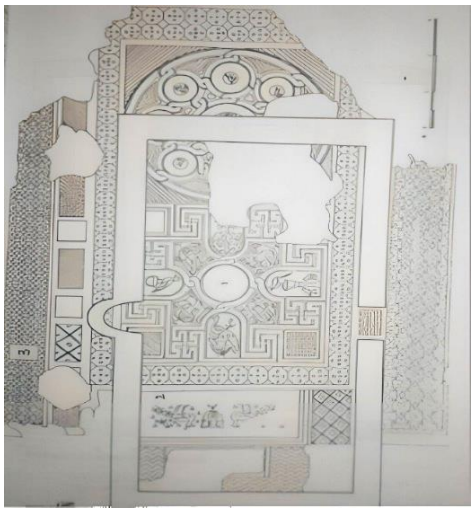


Fig. 26 Mosaic pavement plan at the church of Khirbet Muqa, Idlib, Syria. (Hussein, A. 2018: 193).

The Third Stage: Spans from the end of the fourth century to the beginning of the seventh century AD.

Most of the mosaic pavements in northern Syria date from the 4th to the beginning of the 7th century AD were found in churches, especially in the cities of the limestone massif (also known as forgotten or dead cities) and on the plateaus east of the main road between Damascus and Aleppo.[55] (Fig. 27)

[54] Donceel-Voûte. P 1988: 159.

[55] Balty, J 1999, B: 303.

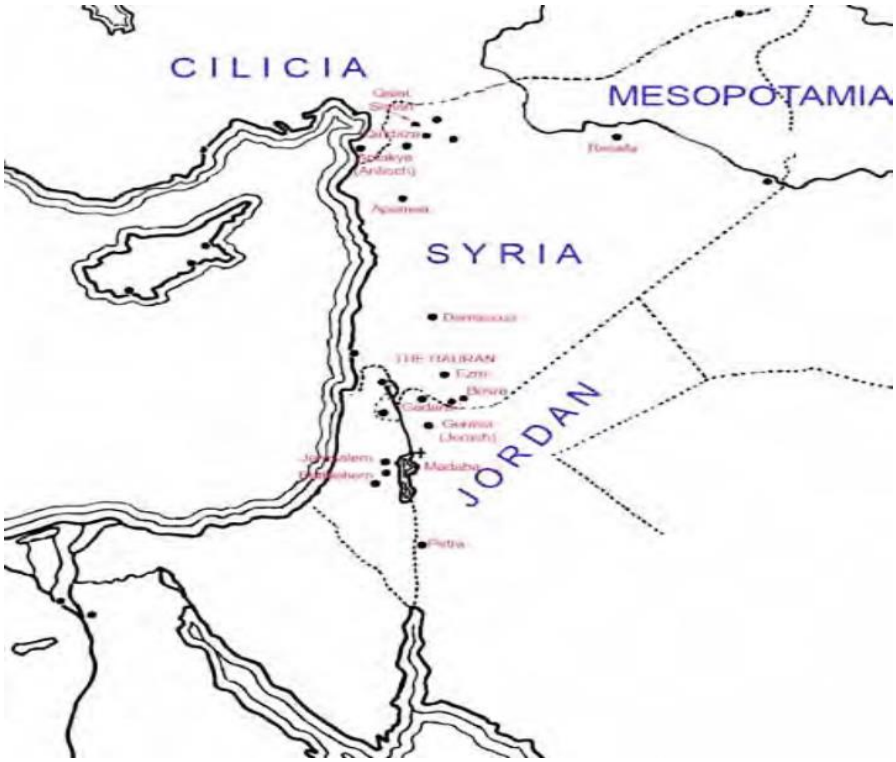


Fig. 27 Map of Syria showing the limestone massif and the two hundred dead cities. (https://www.mileslewis.net/Illustrated-Contents/06-Medieval-Architecture/Byzantine-Syria. (23.03.2024). Created by Miles Lewis).

This stage is characterized by the abandonment of pagan ideas and mythical motifs that had prevailed in Syria for four centuries in order to adapt to the teachings of the emerging Christian faith. Following the decrees of Emperor Theodore toward the end of the 4th century AD, paganism was banned, and Christianity was declared the official religion of the Roman Empire. New decorative groups with innovations such as intertwined flowers, fruit trees, small flowers, and rainbow motifs began to appear. Decorative patterns (geometric, flora, and fauna) spread across the paved surface in open and repetitive compositions. These patterns were sometimes combined with or separated from floral and animal motifs, and they were all laid out on a background of squares, rhombuses, octagons, crosses, or zigzag lines. The intricate depiction of plant motifs such as branches, braids, and flowers alongside geometric compositions and natural scenes was one of the inventive techniques that characterized this period of mosaic art. Since the end of the fourth century, the practice of paving the floors of churches and monasteries with mosaics spread steadily in the Byzantine Empire. In the 5th and 6th centuries AD it increased greatly in most Syrian churches of the period, especially in northern Syria, where this widespread use represented the mentality of the entire society. Geometric patterns with recurring themes were used. The

elaborate lion mosaic from Antioch, dated to 450–425 AD is a good example of the animal representation that resulted from the combination of classical themes of Greek origin with regional oriental influences.[56] Many floors with animal representations were paved into private, public, and religious buildings. After the decrees of *Emperor Theodos* against paganism, numerous churches were also built in Syria from the Orontes to the Euphrates. Even the simplest villages had churches decorated with mosaics depicting animals. Large mosaic pavements depicting animals in a natural scene with fruit trees, cypresses, shrubs, and small flowers first appeared in the 5th century AD, and this type of scene became a tradition that would last until the end of the 6th century. At this time, geometric motifs began to fade.

There are numerous examples of these scenes depicting the land and nature, with animals involved in the conflict, as a representation of the land stained with sin after Adam's sin. It also appeared in the mosaics discovered in the churches of northern Syria: scenes with narrative themes showing representations of religious stories mentioning Paradise and inspired by the Holy Bible, such as the stories of the prophets and Christ, including the mosaics of the church of *Michaelillion* in *Haouarté*, north of *Apamea*, which are dated to the end of the fifth century (487 AD) and depict Adam sitting on his throne and holding a book in his left hand.[57] The depiction of the clothed and enthroned Adam is known from three Syrian mosaics. The first mosaic comes from the central aisle of the above mentioned early Christian Basilica in the northern church of *Haouarté*. In this mosaic, Adam appears as an enthroned lord in a model that, according to the author's knowledge, was apparently only invented in Syria. We see him with the Book of Life in his hand, surrounded by two cypresses entwined with snakes and earthly and supernatural animals, including the winged eagle, symbolizing ascension and immortality, and the phoenix, symbolizing death, and hell. Adam appears as lord over death and life, as if the person he symbolizes is not the "first Adam" but the new, "the last Adam"— Christ who restored creation to its original beauty. This vision is confirmed by the presence of the phoenix with a seven-rayed halo on its head. The resurrected phoenix has been a symbol of Christ since the second century. (Fig. 28)

The mosaic belonging to the Museum of Hama and the third, which is in the Museum of Copenhagen, came from illegal excavations, and we do not know the original location,

[56] Hussein, A 2018: 71-72.

[57] Ibid., 73-74.

but the elements of the composition were the same, since the figure has survived in numerous copies in medieval manuscripts. It is also likely that its location was at the head of the nave, as there is evidence that Adam was surrounded by animals in the Copenhagen Museum mosaic. (Fig. 29) It is a depiction of Adam before Fall, in which he names the animals. Although Adam appears naked in Genesis before the Fall, his representation in the mosaics is symbolic, as seen in the rare floor mosaic depicting Adam and Eve eating the forbidden fruit (Cleveland Museum), which is also of unknown Syrian origin. This mosaic pavement, representing the Fall of Adam and Eve, once formed part of a much larger mosaic that decorated the floor of an early Byzantine church in northern Syria. Adam and Eve are shown sharing the forbidden fruit while covering themselves with large leaves. At the top of the mosaic, the inscription is in Ancient Greek and reads: **(ΚΕΦΑΓΟΝΕΓΥΜΝΩΘΗ).** This translates into English as "*They ate, and their nakedness was revealed" or "They ate, and they became naked*."

The inscription is taken from the story of Adam and Eve in the biblical text (Genesis 3:7); when they ate from the forbidden tree, their eyes were opened, and they realized that they were naked. The scene in the mosaic depicts Adam and Eve after eating from the tree, covering themselves with fig leaves, and highlights the two moments in the biblical narrative of the Fall that are depicted here. [58] (Fig. 30)

In the mosaic of the Hama Museum, a young man is shown in a frontal view, enthroned under an arch that stands on two small pillars. He is seated on a throne, and his hair is short and curly. He wears a mantle with a heavy cloak over it. Two inscriptions, one Greek and one Syriac, identify him as Adam. [59] (Fig. 31)

The three mosaics have differences in style which point to them have been made by different workshops. However, this does not necessarily mean that they were created at different times. High quality and freestyle are characteristics of the Hama mosaic. The Hama mosaic, on the other hand, is in a more formal style and probably belongs to the first decades of the 6th century AD.

It also embodied architectural representations of churches with various plans on mosaic pavement, the largest example of which is the Ṭaybat al-ʾImām mosaic, which also

[58] https://www.clevelandart.org/art/1969.115 (03. 21. 2024.)

[59] Donceel-Voûte. P 1988, A: 487-489.

extends the vine of vessels enclosing birds between their branches with peaceful animals. This scene is often found in the mosaics paved on the floor of the apse of churches. This new trend in mosaic art would continue in Syria until the beginning of the 7th century AD. (Fig. 32)

It should be noted that there are numerous mosaic pavements from this period that bear Greek and Syriac inscriptions, which helps the dating of these mosaics. The inscriptions on these pavements often give us exact dates and, together with some names of the clergy, the names of the people who donated money for the construction of the church and its paving with mosaics.[60]



Fig. 28. Mosaic Pavement: the church of Michaelillion in Haouarté, north of Apamea, dated to the end of the fifth century (487 AD) and depicts Adam sitting on his throne, it is displayed in the Apamea museum. (https://rb.gy/5c1whw , (2019).

[60] Hussein, A 2018: 73-74.



Fig. 29. Mosaic pavement from the Copenhagen Museum: depicting Adam throned in Paradise. (Donceel-Voûte. P 1988, A: 113).



Fig. 30. Fragment of a Floor Mosaic: depicting Adam and Eve, from the late 400s–early 500s CE, Northern Syria, 5th- 6th century. it is displayed in the Cleveland Museum of Art. (Donceel-Voûte. P 1988, A: 489).

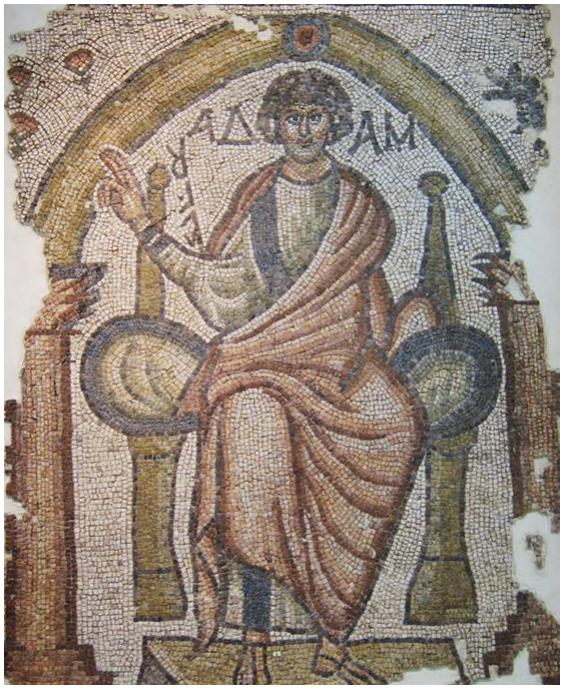


Fig. 31 Mosaic of Adam (4th century) in the museum, Hama, Syria. ((Hussein, A. 2018: 193).



Fig. 32 Thumbnails of churches at pilgrimage sites in Jerusalem. Detail of the western part of the central nave of the pavement of the Óaybat al-ÞImÁm church. (Khoury, W. 2018: 271).

CHAPTER III

CHARACTERISTICS AND THEMES OF EARLY BYZANTINE MOSAICS

I. CHARACTERISTICS OF EARLY BYZANTINE MOSAIC

In the Byzantine era, mosaics were considered magnificent and distinctive works of art and architecture that were distinguished by beauty and luxury. Two types of mosaic were used: The first type, the wall mosaic, is used for a variety of architectural surfaces, including curved surfaces such as domes, apses, walls, and vaults. The second type of mosaic is used for laying on the floors of churches, public and private buildings, gardens, etc. Here are some notable characteristics of Byzantine-era mosaics:

1. Byzantine mosaics are characterized by depicting human representations such depicting the icons of Christ and the Virgin Mary, disciples who followed Jesus during his life, especially the twelve apostles, emperors, and clerics, in a realistic or symbolic method in the wall mosaics, domes, apses, and ceilings. Church pavements were full of amazing mosaic scenes that included complex geometric shapes, religious symbols, floral motifs, and animal motifs. These scenes were usually made of stone *tesserae*, while the wall mosaics were executed mainly with colored glass *tesserae* or the combination of glass and stone.
2. Attention to detail: Mosaic church floors were designed with great care, as they were distinguished by precision of detail and high craftsmanship in execution and were freed from classical traditions and influences.
3. Widespread use of colors: The mosaic scenes on church pavements used a variety of bright and vivid colors, which gives an atmosphere of vitality and splendor to the churches.[61]
4. Religious symbolism: The mosaic scenes on church floors carried important religious symbolism, as they were used to promote worship and meditation and reflect Christian values and beliefs. The emphasis was on peace, which was the aim of Christ's call, as depicted in the harmonization between animals and hunters, for example, in the Beit Kufrin mosaics.

[61] Turshan, N 1985: 9.

5. They show different forms of expression, especially in representations of animals and people.
6. Representation of scenes from rural life, such as hunting, picking grapes, etc.
7. Paying attention to balance and symmetry when depicting scenes.
8. Durability and resilience: The mosaic church floors had high durability, which made them remain beautiful and radiant over time, as the use of assorted color tesserae in the paving of the mosaic gave it more depth and beauty.
9. The wide variety of natural, geometric, and animal shapes and scenes, alongside the variety of symbolic themes.[62]

With these prominent characteristics, the mosaic floors of churches in the Byzantine era were considered to be one of the most prominent aesthetic and artistic elements that distinguished the architectural structure of that period.

II. EARLY BYZANTINE MOSAIC MOTIFS AND THEMES

The craftsmen responsible for producing the mosaic had dual objectives, serving both structural and decorative purposes, while concurrently conveying religious messages to the faithful upon their entry into the church.

The principal themes employed in the different sections of Byzantine buildings are as follows:

1. Religious themes were particularly prevalent in the wall mosaics, which depicted images of Christ and the Virgin Mary.
2. The figural themes were taken from the stories of the Bible.[63]
3. Religious themes and symbols related to the Christian religion were concentrated within wall decorations such as:
    - The crosses of all kinds.
    - The lamb symbolizes the sacrificial offering that the biblical incident made in the place of Isaac, a symbol of Christ, the lamb slaughtered on the altar of the cross for the salvation of the believers.
    - Fish.

[62] Ibid., 9.

[63] Al-Shayyab, A., & Al-Muhaisen, S 2008: 130.

- Peacock.
- Sheep.
- Vine: The scenes of the vine and trunks laden with bunches and leaves of grapes have a symbolic and literary value mentioned in the texts of the Old Testament.

4. Representation of disciples who followed Jesus during his lifetime, the twelve apostles, emperors, clerics, and some of the saints who went with Christ in spreading the teachings of the Christian religion.
5. On the floors the scenes are often taken from nature and the environment, such as scenes of animal hunting, grape harvesting, and grape pressing, which depict village life. These scenes depict man spending most of his time in everyday activities such as grazing, hunting, working in the fields, and fishing, in the context of the description of creation, of which man is considered a part. Hunting scenes, in which a man faces an animal, show man's superiority over other living creatures and his power over all living creatures. The scenes with the few shrubs laden with fruits, flowers, birds, and water drawings show that the earth and sky are depicted in an orderly pattern and perhaps express something about the land, sea, and accompanying elements such as fruit trees, birds, fish, and animals.
6. In the Justinian era, mosaic motifs became more varied, such as floral motifs, geometric motifs, animal scenes, and human scenes.[64]
7. In the Byzantine mosaics, maps and cities were often represented; the names of these cities were inscribed, such as the map of the holy cities in Madaba, the church of John the Baptist in Jerash, the Church of the Apostles in Madaba, and the churches of Mount Nebo[65] and the plan of the church of Saint Simeon on the mosaics of Ṭaybat al-ʾImām.[66]

III. MOSAIC CHARACTERISTICS OF EARLY BYZANTINE CHURCHES NEAR ALEPPO

Byzantine mosaics are regarded as one of the most prominent forms of religious art in the later periods of the Eastern Roman Empire, where they transcended their decorative

[64] Ibid., 130.

[65] Ibid., 130-131.

[66] Ibid., 131.

function to become a theological and symbolic medium expressing profound spiritual concepts. In Syria, particularly in the Aleppo region, mosaics developed a distinct character that combined classical heritage with Christian symbolism, making them a unique example in the history of early Byzantine art.

The mosaics in Syrian churches were characterized by their focus on many main axes:

1. Floral Motifs: These represent eternal paradise and spiritual fertility, such as vine branches, palm leaves, and pomegranates, which are symbols associated with verses of salvation and resurrection.[67]
2. Animal Motifs: Examples include the dove, peacock, and gazelle, which symbolize the spirit, immortality, and purity.[68]
3. Geometric Motifs: These serve a visual organizational role and emphasize the symmetry of the floor layout, reflecting the cosmic and divine order in early Christian thought. [69]

In the mosaics of the Aleppo churches—as seen at the sites of Tell ʿAmārna, Zamka, and Dier Qinnasrin—these elements appear in a balanced style that combines geometric precision with theological symbolism. Local artists seem to have drawn on the artistic heritage of Antioch and the cities of the Middle Euphrates, confirming clear regional artistic exchange during the 5th and 6th centuries.[70]

It is noteworthy that the artists in Aleppo did not necessarily follow the imperial model of Constantinople; instead, they developed a local style based on visual simplification and a focus on repeated forms rather than complex narrative storytelling.[71] This approach shows a tendency towards the carpet style, which relies on the unity and harmony of ornamentation across the entire floor surface.

From a theological perspective, these mosaics display a strong presence of Christian symbols without a complete separation from ancient pagan elements, reflecting an

[67] Mathews, T 2010: 63.

[68] Finney, P. C 1997: 89-91.

[69] Weitzmann, K 1979: 347.

[70] Levi, D 1947: 212.

[71] Plemić, B 2022: 11.

intellectual continuity between classical and early Christian art. This continuity gives the mosaics of Syria their distinctive character compared to those in the West.[72]

The church mosaics in Aleppo exhibit a blend of Late Roman and Early Byzantine styles, presenting a model of visual art that combines technical precision with symbolic depth, making them a material witness to the evolution of aesthetic and spiritual thought in the Byzantine East.

CHAPTER IV

EARLY BYZANTINE ECCLESIASTICAL ARCHITECTURE AND MOSAIC ART

I. FACTORS INFLUENCING EARLYBYZANTINE ARCHITECTURE

To study Byzantine architecture is to explore the design and construction methods of religious buildings found in monasteries, churches, and places of worship that played a significant role in influencing architectural art, similar to its impact on other art forms. Byzantine architecture is primarily distinguished by its religious character, with limited instances of secular architecture, such as Constantinople's walls, imperial palaces, and vast water cisterns—many of which are no longer extant, leaving churches as the lasting remnants.

Beginning in the early 4th century AD, architecture gained prominence, with a focus on erecting structures for religious gatherings, prayers, services, and burials. The emperors directed their attention toward reconstructing cities and restoring ruined churches to facilitate Christian worship in dedicated spaces. Imperial support further encouraged the construction of new churches, with architects meticulously aiming for architectural excellence and artistic creativity in harmony with their faith's significance.

Byzantine architecture emerged in the 4th century AD but saw significant development during the 6th century AD. This period witnessed the construction of numerous new churches across the Byzantine Empire, including regions like Anatolia, Asia Minor,

[72] Weitzmann, K 1979: 132.

Syria, Palestine, and Egypt, which were under the rule of the Roman Empire. Hence, Byzantine architecture can be viewed as an evolution of ancient Roman architecture.[73]

Churches' interior decoration and external forms varied based on their functions and dedicated purposes, such as baptisteries or shrines. These churches served multiple roles, acting as spaces for religious rituals and housing private hospitals for the care of the sick and needy. Consequently, there was no singular architectural style common to them; rather, they diverged based on the country of construction and were influenced by specific environmental conditions unique to each region. The emergence of various architectural plans and forms was influenced by a combination of natural and cultural factors.

Natural factors encompassed environmental conditions surrounding humans, including geographical, climatic, and geological elements, as well as the availability of building materials. On the other hand, civilizational factors entailed religious, social, political, economic, and technological aspects—all shaped by human ideas and beliefs. Each of these factors significantly impacted religious architecture, leading to a diverse array of architectural elements and construction techniques.[74]

II. ARCHITECTURAL STYLES OF EARLY BYZANTINE CHURCHES

Byzantine architects incorporated diverse forms and designs in the construction of churches. These architectural styles were influenced by a combination of religious, climatic, geological, and technological factors. Notably, churches with Roman and African influences emerged during the 4th century AD in prominent Eastern cities like Alexandria, Antioch, and Ankyra/Angora (Ankara). The interplay of Sasanian and these art forms significantly impacted Byzantine architecture, leading to a fusion of Eastern and Greek elements that characterize Byzantine art, particularly in architecture.

Syria and Anatolia played pivotal roles as the main sources of Byzantine architecture, with Syriac art embracing realism and a profound expression of religious fervor and spiritual sentiments. These ideas resonated with Byzantine artistic ideals and religious beliefs. Byzantine church buildings adopted four primary styles: basilica style, central style, cross

[73] Al-Masry, N 2001: 149.

[74] Ibid., 155.

style, and multi-dome style. While most styles originated from Roman, and Armenian influences, the cross style stood as an exception.

Basilica-Style Architecture in Byzantine Churches

A basilica is a rectangular hall with naves, typically divided into three or five naves by rows of columns. Most cathedrals followed the common division of three naves, while larger churches, such as the Church of the Holy Sepulcher and the Church of the Nativity in Palestine, and the Church of St. Demetrius and the Church of St. Peter in Rome, had five naves. These basilicas, dating from the 4th and 5th centuries AD, featured proportional series of doors corresponding to the number of interior wings.

The main nave area exceeds that of the side naves, supported by two rows of columns, which differ in height from the two side areas. Higher windows in the columns, known as clear story windows, allowed ample illumination within the building. Some models included two rows of columns on each side of the central aisle, with a lower part having a balcony reserved for women. (Fig. 33)

Basilicas were usually accompanied by a wide courtyard in front, surrounded by a high wall separating them from other outer buildings. The outer plan of the basilica often took the form of a semicircle covered by a half dome, with a niche (*Qiblah*) initially dedicated to the throne, representing a pagan feature that was later adapted to symbolize the seat of the Lord.[75]

The basilica-style church includes a rectangular area intersecting the main hall, known as the transept, which separates the nave from the altar area, forming a cross-shape symbolizing Christ's crucifixion. Initially, Basilicas had eastern entrances, but the practice of having western entrance became widespread in the late 4th and early 5th centuries AD. The oldest example of the eastern niche is found in the basilica of *Ursiana* in Ravenna (370-384 AD) [76], reflecting an Oriental feature of orienting the church toward the east.

[75] Ibid., 156.

[76] The church underwent on significant changes in 1112 AD and was rebuilt in the baroque period, in the mid-18. c. The mosaics created in 1112 AD were removed during this transformation. https://rb.gy/r6hkao (03.04.2024).

Basilicas, originating in Rome, were the generic form of early Christian churches. The style was adapted to express the new content of the Christian religion, transforming the place of assembly in pagan times into a site for worship and religious rituals in Christianity. Despite its widespread use, the basilica style did not undergo many developments and was considered simplistic, not fully aligning with Byzantine theological requirements, or thought. Its usage declined throughout the Empire by the end of the 5th century AD, surviving only in certain regions in Rome, Bulgaria, and northern Greece.

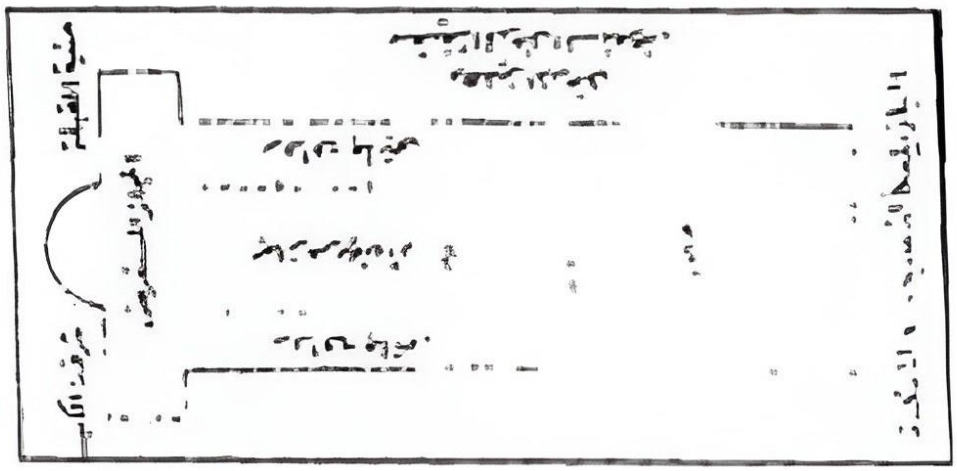


Fig. 33. Scheme of ancient Christian basilicas. (Al-Masry, N. 2001:204).

Nonetheless, the Basilica style served as the foundation for the discovery and creation of more advanced designs and constructions in Byzantine church architecture. The new church of *Sant Apollinare Nuovo* in Ravenna, Italy, exemplifies Byzantine architecture and the continuity of this Roman style. (Fig. 34)

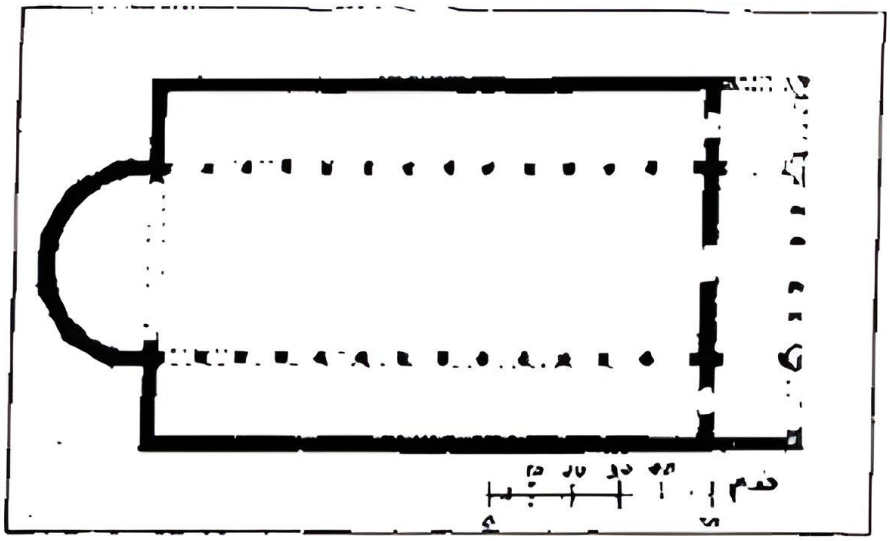


Fig. 34 The Scheme of the new church of Sant Apollinare Nuovo, Ravenna. (Al-Masry, N. 2001:204).

The Central Style in Byzantine Church Architecture

The central dome style features domes as the primary architectural element, covering the lower space directly above the center of the building. These structures were historically categorized into two types: circular-plan buildings with a circular horizontal roof and a corridor surrounding the central space, and square-plan buildings, which became the most prominent in Byzantine architecture. The square-plan layout, which became synonymous with Byzantine architecture, originated in Iran and Iraq, later spreading to Syria and Anatolia. The influence of this central plan on churches underscored its significance in Byzantine architectural development.[77]

In summary, the central dome style includes both circular and square-plan buildings, with the latter emerging as a hallmark of Byzantine architecture, showcasing the fusion of architectural influences from different regions.

The Cross Style in Byzantine Church Architecture

This style features the Greek cross form with each wing covered by the ceiling. It includes a central dome, as seen in the tomb of *Galla Placidia* in Ravenna. In some cases, all wings are covered with domes, with the largest and highest dome situated above the center of the cross, as exemplified by the Church of the Apostles in Constantinople. In contrast to the basilica style, this design shows a square shape instead of a rectangular one.

[77] Okasha, T 1993: 120.

The ceilings of these Byzantine churches are planned with domes, semi-domes, and vaults, replacing the flat and gabled wooden ceilings of the basilica style.[78] (Fig. 35, Fig. 36, Fig. 37)

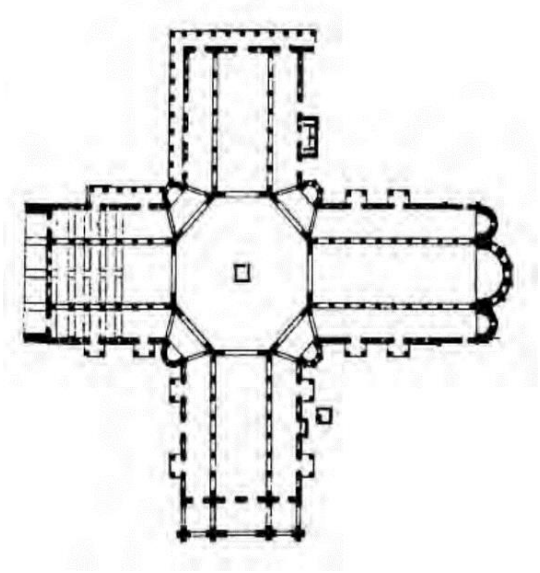


Fig. 35 Horizontal plan of the St. Simeon Monastery, dating from 541 to 565 AD. (Krautheimer. Early Christian and Byzantine Architecture:112).

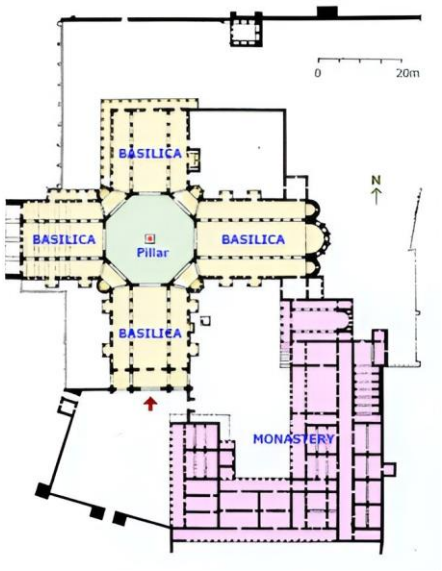


Fig. 36 Horizontal plan of the St. Simeon Monastery, including the church complex, dating from 541 to 565 AD. (Krautheimer. Early Christian and Byzantine Architecture:112).

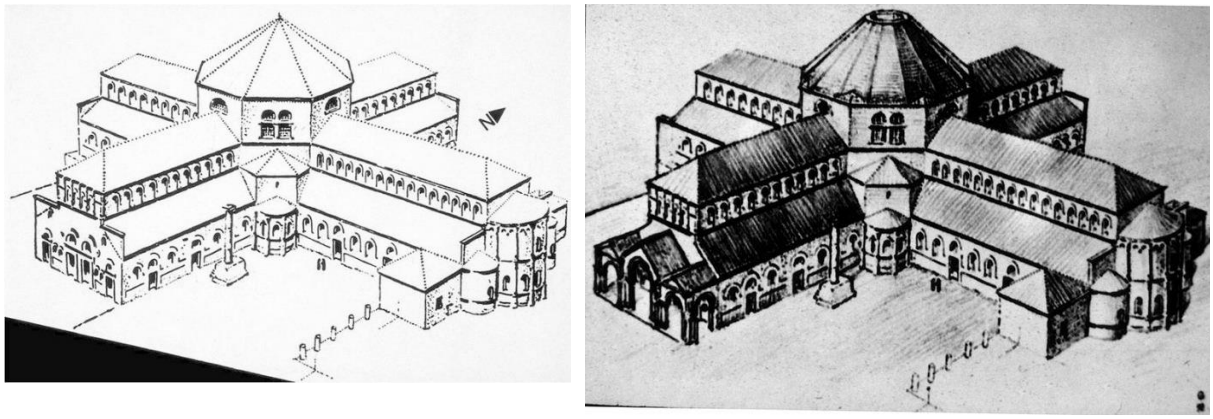
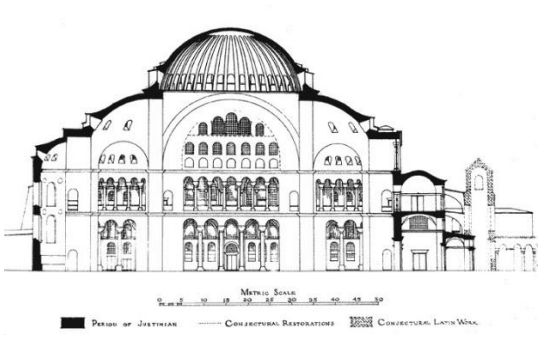


Fig. 37. St. Simeon Stylite. Two reconstructions of the Church. (Krautheimer, Early Christian and Byzantine Architecture:112. William Macdonald, an Early Christian, and Byzantine Architecture. (London 1968 [New York 1962:45).

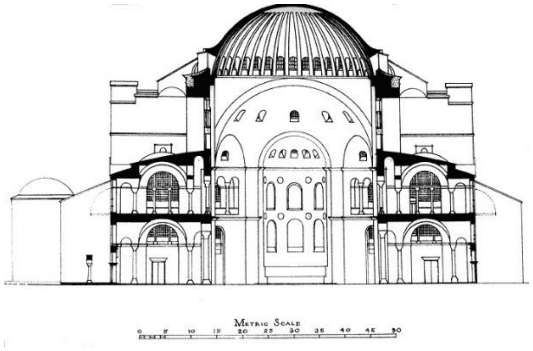
The Multi-Domed Style in Byzantine Architecture

[78] Byzantine Art and Architecture 1994: 139

The Multi-Domed Style in Byzantine Architecture is a fusion of the basilica (Cathedral) and vaulted styles. It features a rectangular base divided into wings with rows of columns, and instead of a single dome covering the center, multiple domes and semi-domes are used. One variant is the five-domed style, resembling a Greek cross with domes above the central intersection and four wings. The Church of the Holy Apostles and Hagia Sophia Church in Constantinople are notable examples showcasing various architectural elements in this style. The latter was completed in 537 A.D, exemplifies the fusion of these elements, showcasing the development of Byzantine architecture.[79] (Fig. 38)



A



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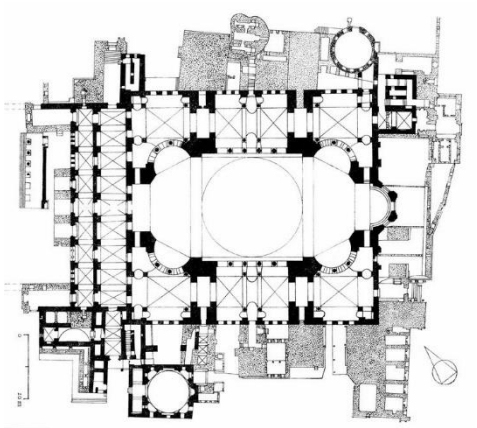

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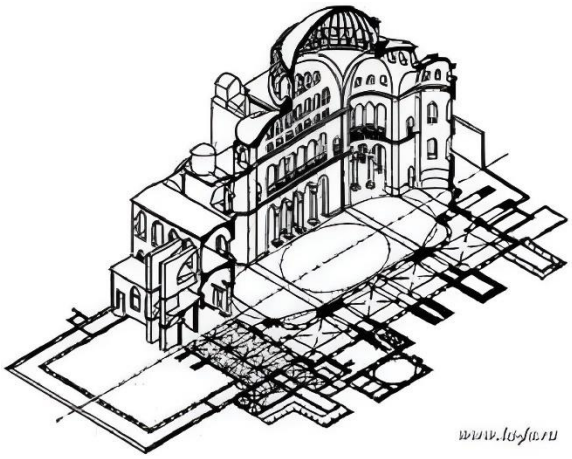


D

[79] Al-Masry, N 2001: 168.



E F

Fig. 38 A, B). A sectional plan, C, D). Horizontal plan, E). Exterior view of Hagia Sophia Church, Constantinople dating from 532–563 AD. (Daragó 2007: 12 -14).

III. THE MOSAIC'S ROLE IN EARLY BYZANTINE ARCHITECTURE

Mosaics emerged as a vital element in Byzantine architecture, initially in simple forms, adorning limited sections of walls alongside carvings. Gradually, mosaics expanded to cover most of the church interiors, becoming intricately linked to architectural elements. Churches without mosaics were rare, and the mosaics' themes and placement were closely tied to the architectural layout. As architectural styles evolved and churches grew, craftsmen creatively incorporated mosaics into new spaces, such as domes, vaults, and apses.

Dr. Tharwat Okasha highlights how Byzantines considered domes, vaults, and apses ideal surfaces for images of angels and saints, following strict rules for their depiction and positioning. Central domes often showcased Christ, symbolizing the heavenly realm on earth, while the apse frequently featured the Virgin Mary and the lower walls depicted various religious figures. Byzantine craftsmen preferred curved surfaces for mosaics, allowing the reflection of light, thus enhancing the artistic essence of these masterpieces.[80]

A singular example of the blending of religious symbolism and architecture is the church in late antiquity and early Byzantine Syria. Mosaics were essential to the building's liturgical and spiritual spaces, not only ornamental features. In perfect harmony with the surrounding architecture and natural light, floor and wall decorations were placed in

[80] Okasha, T 1993: 110.

accordance with a visual program that directed the worshipper's journey from the sanctuary's entrance.[81]

III.1. The Impact of Architectural Style on Mosaic Distribution

Tell Bājr, Deir Qinnasrin, and Brad are examples of northern Syrian churches featuring a basilica style, characterized by two side aisles and a central nave. This arrangement provided mosaics with ample floor space, allowing the decorations to effectively highlight the altar's importance and holiness.[82]

The middle aisle was often paved with geometric or symbolic shapes that clearly pointed east, while the side aisles had simpler floral designs. The floor takes on the role of a visual religious text in this architectural setting, representing a symbolic interpretation of the area.[83]

III.2. Decorations' Connection to Liturgical Structure

The subject scenes are placed in accordance with a liturgical logic, as may be seen by examining the mosaic pavements at the Church of Tell ʿAmārna and the Church of St. Martyr John in al-Nabgha:

- The terrestrial world is represented by geometric or animal themes in the western entrance.
- The vine and cluster in the middle symbolize the path of the believer to salvation.
- The sanctuary is often adorned with celestial symbols such as the cross, the peacock, and the dove.
- The spiritual progress seen in church ceremonies is reflected in this visual hierarchy.[84]

III.3. Impact on the local and regional levels

There are clear artistic differences between the cathedrals in Madaba and Jerash, Jordan, and those in Aleppo, although core elements remain identical. Syrian mosaics

[81] Mango, C 1985: 41.

[82] Krautheimer, R 1986: 97.

[83] Mathews, T 2010: 115

[84] Jensen, R. M 2000: 73.

prioritize geometric simplicity and a focus on visual coherence, whereas Jordanian mosaics tend towards narrative intricacy.[85] It is also evident that Syrian decoration lacks imperial features, reflecting creative freedom and a local expression rooted in the religious and social context of northern Syria.

The best way to understand Aleppo's church architecture is through its mosaics, and vice versa. These two elements combine to create a unified visual narrative that reflects how the local community perceives sacred space. Syrian churches hold particular artistic significance in early Byzantine history because of this interaction between form and structure..

CHAPTER V

TECHNIQUES USED IN EARLY BYZANTINE MOSAIC CRAFTSMANSHIP

I. EARLY BYZANTINE MOSAIC TYPES

The Byzantines used various types of mosaics for floors, walls, and small panels (mosaic icons), each chosen based on its intended use and the surface's characteristics. Stone *tesserae* were employed in erosion-resistant areas like floors, fountains, and aqueducts, later replaced by small marble slabs. Glass, ceramic, and natural stone mosaics, including precious stones were preferred for walls and small independent mosaics. Iconographic representations utilized valuable materials, including golden *tesserae*, symbolizing sacred ideas.

The mosaics incorporated multiple types to avoid artistic works relying solely on one. Stone mosaics in natural colors appeared alongside glass mosaics, contributing to intricate surface details. The rough surface of faces and hands in Byzantine mosaics absorbed light, creating realistic effects lasting over a millennium. Various color gradations helped achieve different skin tones, particularly in the faces of saints and angels. Natural stones highlighted the transparency and purity of sacred faces, appearing more lifelike than the paintings on the walls. The combination of different *tessera* types distinguished surface quality. Gold and silver mosaics added brightness and solidity, while stone mosaics reflected texture, enhancing delicate facial depictions. It is important to mention that the production of flesh tone mosaic glass was the most complex and those hues are among the most expensive types

[85] Alchermes, J. D 2005: 349.

today. Thus, the difficulties of manufacturing also explain the choice of natural stone for the execution of faces and hands. Byzantine craftsmen skillfully harnessed these mosaic properties to create enriching artistic impressions serving sacred purposes.[86]

II. EVOLUTION OF EARLY BYZANTINE MOSAIC TECHNIQUES

During the Byzantine period, mosaic execution methods varied based on the nature of the surface and intended use. Different regions within the Byzantine Empire showed varying artistic developments, influenced by their proximity to the capital. *Tesserae* came and cut into different sizes and shapes, with smaller *tesserae* used for intricate details and larger ones for backgrounds. The decreased size of *tesserae* resulting in clearer and more refined mosaic works.

On walls and vaults innovations emerged, such as placing golden *tesserae* at oblique angles to create a sparkling effect. This feature is at the same time the result of the direct setting method. This technique spread in some areas but gradually diminished. It was replaced by polygonal architecture, using juxtaposed golden *tesserae* to create diffuse reflections on surrounding figures. The latter period saw a remarkable development in mosaic execution, with smaller *tesserae* used to capture intricate facial features. The small mosaic format, framed with floral and animal motifs, gained popularity during the *Paleologus* era, and continued in use for centuries. Byzantine art influenced neighboring regions, with local methods blending with Byzantine techniques to create new forms and styles while preserving the fundamentals of Byzantine art.[87]

III. DIGITAL DOCUMENTATION OF MOSAICS

A Case Study of the Nativity Church

The Nativity Church mosaic study is a good example of how to involve digitization technologies and non-invasive diagnostic analysis which were completed in 2020. The goal was to create reliable photogrammetric outputs at a micro-scale level. This approach has led to various research lines focused on digitizing mosaic surfaces for management and conservation purposes. By recording and digitally representing individual mosaic pieces, quantitative data on the number of *tesserae* and qualitative data on their significance within

[86] Al-Masry, N 2001: 238.

[87] Ibid., 243.

the overall system were obtained. This data is crucial for preservation and planning restoration or consolidation measures for at-risk mosaic surfaces. To achieve this, a tool for managing maintenance and restoration was developed. The surfaces were digitized to classify each tile in alphabetical order, based on the survey's sequence. Additionally, an orthorectified aerial or satellite image with a uniform scale was created.[88] (Fig. 39)

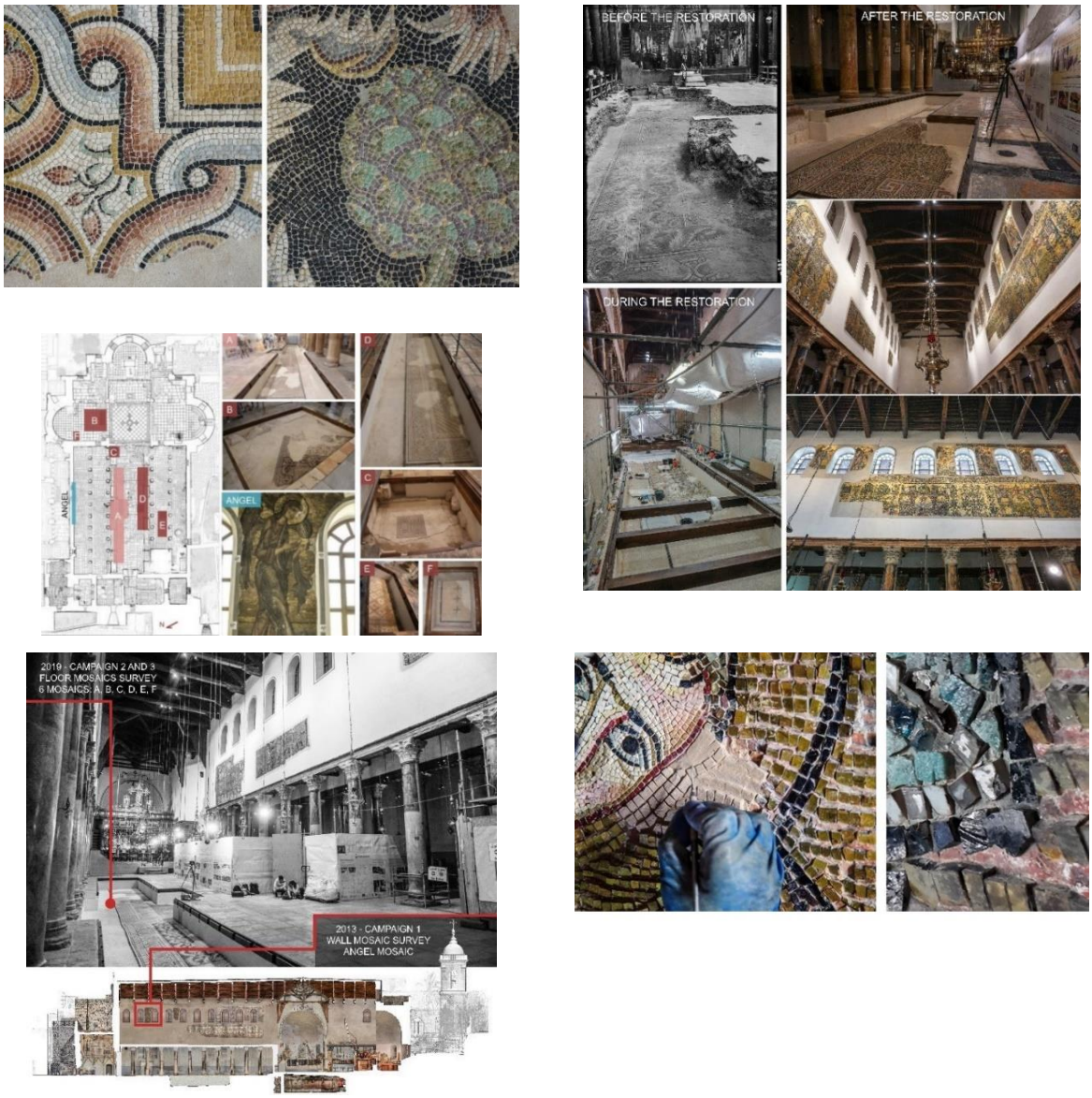
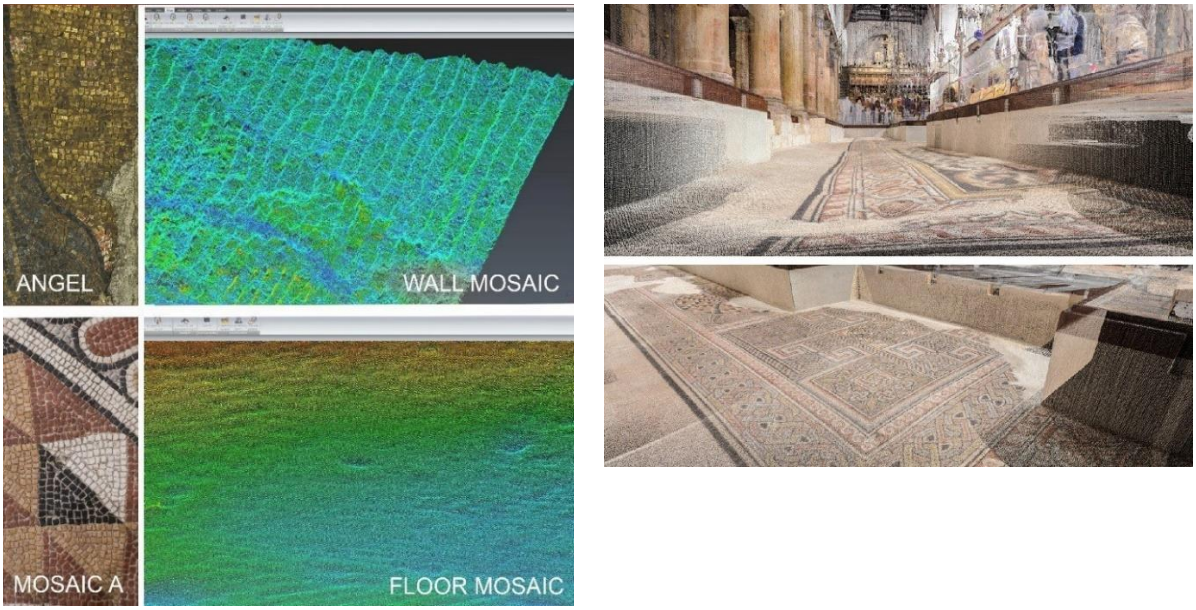


Fig. 39. Pavement and wall mosaics documentation of the Nativity Church. The colours show the different documentation campaigns. (E. Doria, F. Picchio. 2020: 965 - 967).

[88] Doria, E., & Picchio, F 2020: 965.

Meticulous planning of documentation activities is crucial for perfecting fieldwork and data collection. When large mosaic pavements are involved, careful consideration is given to opening the covers to limit the disruption to visitors. Short exposure times for the mosaics were designed to accommodate rapid changes in natural light caused by climate and openings, resulting in varying shadows and colors. Multiple technologies were analyzed to combine the advantages of different authentication techniques for digitizing all components of the pavement mosaic. Various survey methods, including TLS (Terrestrial laser scanning), direct survey for smaller floor mosaics, SfM (Structure-from-Motion) techniques, and 2D photogrammetry with SLR, were employed for differentiated data collection.

The TLS survey provides a topological overview of the mosaic's morphology, reducing target assignment errors compared to direct surveys and enabling precise tracking of each mosaic part's geometry. With a quick scan time of 8 minutes, a range of 150 meters, and up to 1 mm distance accuracy, laser scanning offers HD color overlay and 4X color scans. This approach captures a complete point cloud while preserving the colorimetric details of the building's ornamentation. By using laser scanner points, researchers were able to identify differences between wall and pavement mosaics, scale photogrammetric models, and evaluate important features associated with mosaic surfaces.[89] (Fig. 40)



[89] Ibid., 967.

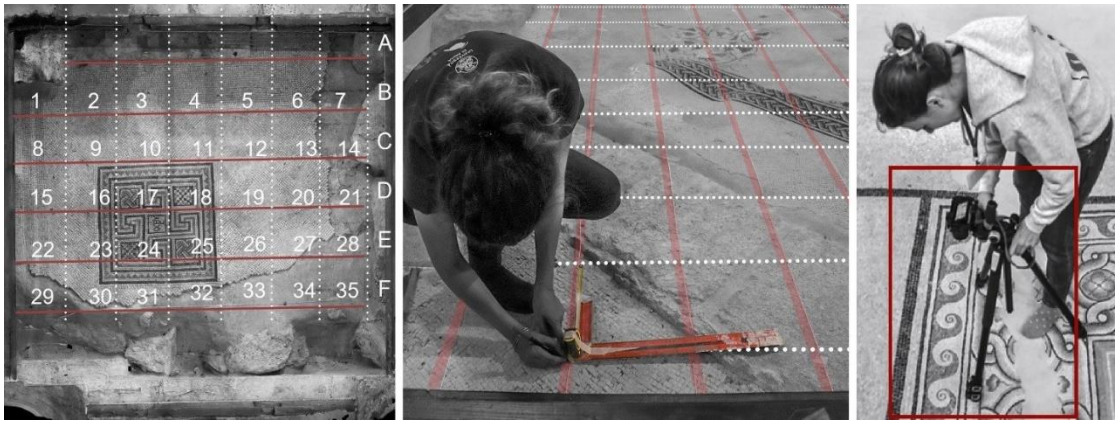


Fig. 40. Illustrations showing the point cloud generated via Terrestrial Laser Scanning (TLS) of Mosaic A. Subdivision of the mosaics into regular squares for reference of each square. (E. Doria, F. Picchio. 2020: 967 - 968).

To conduct the photogrammetric survey of the mosaics, special tools, platforms, and lighting equipment are utilized. The photographic campaign is carefully planned to use an organized data archive consisting of square 2D images, precisely oriented in x, y, and z coordinates. The mosaics are divided into squares of 15, 30, or 45 cm, manually separated and numbered during acquisition with the help of a notation wire. Images are taken using a Sony Alpha 6000 camera with fixed lens length, ISO at 100, and various exposure times. Duplicate photos are taken, including side parts for overlay purposes.[90] (Fig. 41)

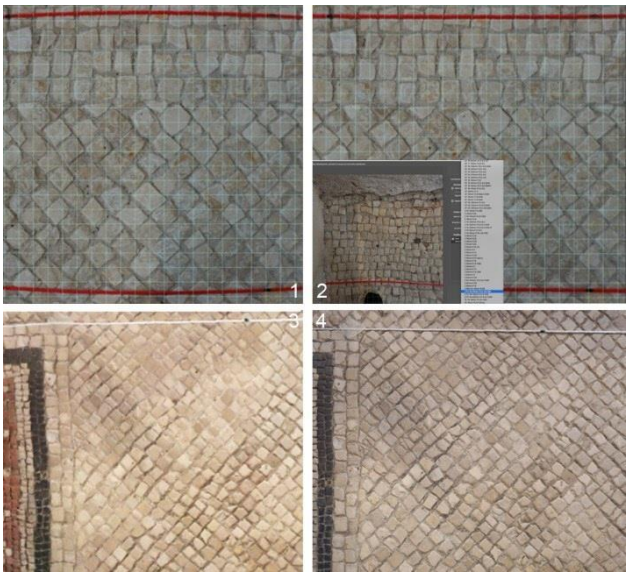


Fig. 41. 2D photography optical aberration and SfM photogrammetry to gain a better orthomosaic quality for the mosaic vectorization. (E. Doria, F. Picchio. 2020: 968).

[90] Ibid., 969.

To ensure accurate results, the acquisition mode is corrected using physical references and photogrammetry orthorectification software like RDF, Lightroom, or Agi soft Meta shape, along with Adobe Photoshop lens correction tools. This process creates an Orth mosaic that corrects lens-related changes from the camera, providing a textured model for vector patterns. Integrating the SfM technique with 2D photogrammetry is ideal for detailed colorimetric representations and vectorizing individual *tesserae*. Depending on the mosaic size, SfM acquisition is done either over the entire part for smaller mosaics or divided into smaller portions for larger ones. The earlier images are fixed based on the Orth mosaic created in this stage.[91] (Fig. 42)



Fig. 42. Structure-from-Motion (SfM) general model and specific details of the Angel mosaic. (E. Doria, F. Picchio. 2020: 969).

A Canon EOS 77D camera with a fixed focal length of 18 mm, ISO 150, and exposure time of up to 2.5 is used for the photographic survey. To improve post-processing, vectorization is tested during the acquisition phase, allowing for the correction of procedural problems. Both SfM orthoimages and 2D photogrammetry images undergo Orth mosaic vectorization to enhance the final product and improve the dataset. (Fig. 43)

[91] Ibid., 971.

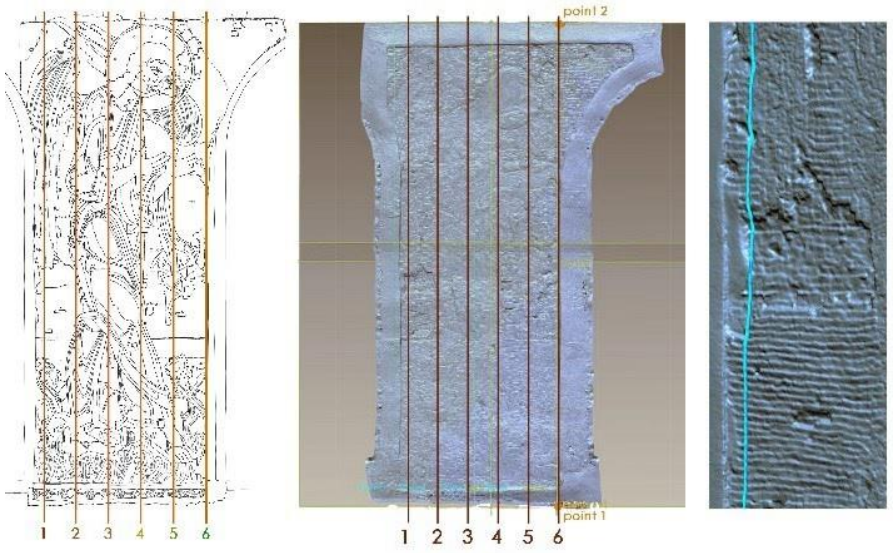


Fig. 43. Morphological analysis of the wall mosaic depicting the Angel, including a detailed examination of the mesh structure. (E. Doria, F. Picchio. 2020: 969).

The survey procedure varies based on the mosaic's size, resulting in two types of surveys with significantly different times. Creating the photo set and grid on the walkable surface for each mosaic piece requires additional time compared to SfM acquisition, which involves adjusting lens distortion and correcting single square sections. SfM photogrammetry was necessary for the non-coplanar tiles of the angel mosaic in the Church of the Nativity, allowing systematic comparison with the mosaic pavements. The 3D models obtained, with mesh and texture, were scaled using point clouds from laser scanners for common purposes. The spatial approach enabled the export of higher-level Orth mosaics for system documentation, serving as the basis for a semi-automatic vectorization process to define the tile boundaries.[92] (Fig. 44)

[92] Ibid., 972.

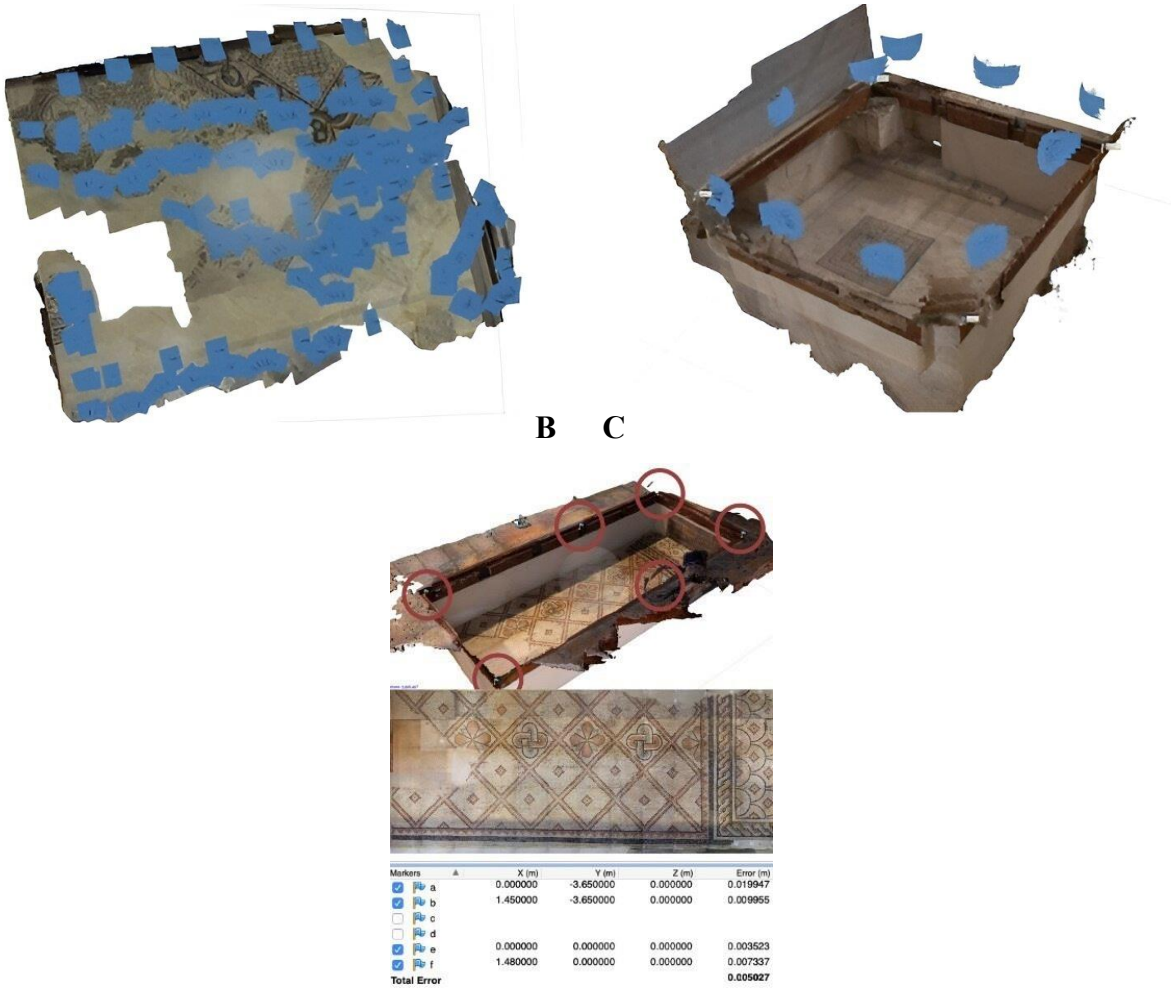


Fig. 44. 3D model of mosaic, measurements, and orientation with target points. 3D models of mosaic B and mosaic C obtained by SfM photogrammetry. In the case of extensive mosaic. (E. Doria, F. Picchio. 2020: 970).

During the photographic image acquisition phase for edge extraction on mosaic pavements, attention must be given to the program's capturing, processing, and analysis of digital images. Automatic determination of mosaic pavement edges involves the use of various filters to calculate brightness gradation along the x and y axes. Convolution of the filter kernel with the pixel matrix allows for edge detection. High-brightness contrast in digital photos can be highlighted using these methods, helping to identify potential problems during acquisition. Strong deviations in the edge detection filter output may indicate variations in pixel brightness due to floor interruptions, differences in mosaic pavement orientation, material qualities, and surrounding lighting. (Fig. 45)



Fig. 45. Ortho-image of Mosaic C got using the Structure-from-Motion (SfM) method, accompanied by a semi-automatic vectorization process focusing on white, black, and polychrome pavement. (E. Doria, F. Picchio. 2020: 971).

This protocol enables the creation of a wide range of outputs, including 2D drawings and 3D models, which serve as valuable tools in cultural heritage management and evaluation. Digitizing art and architectural assets allow intervention in various areas, from maintenance and management support to information systems with updatable catalogs for planned interventions. The digital use of augmented reality opens accessibility to otherwise inaccessible places, benefiting all categories of users. It facilitates planning for interventions, maintenance, and restoration work and supports tourism and education initiatives. The resulting documentation forms the foundation for future initiatives in managing and promoting mosaic heritage.[93] (Fig. 46)

[93] Ibid., 972.

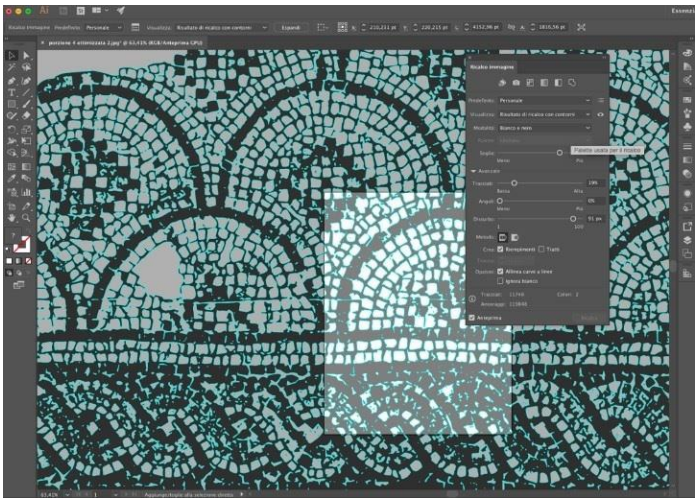


Fig. 46. A semi-automatic vectorization process on Mosaic E using Adobe Photoshop for threshold management and Adobe Illustrator for defining the mosaic's edges. (E. Doria, F. Picchio. 2020: 971).

Unfortunately, we were unable to apply digital documentation to most of the Byzantine mosaic pavements discovered in Aleppo. This limitation stems from the fact that the majority of mosaic pavements were unearthed incidentally, which led to all excavations being emergency. Moreover, these sites require expanded excavation efforts to include the entire area. Nonetheless, we hope to implement digital documentation for future discoveries of mosaic pavements, following the method set up in the Church of the Nativity.

To apply the information from the digital documentation of the mosaics in the Church of the Nativity to the mosaic pavements discovered in northern Syria (Aleppo), a similar method tailored to the specific context can be followed:

1. **Digitization technologies and non-invasive analysis:** using digitization technologies and non-invasive diagnostic analysis methods to produce reliable micro-level photogrammetric results for the mosaic pavements.

2. **Quantitative and qualitative data collection:** Recording and digital representation of individual mosaic pieces to obtain quantitative data on the number of *tesserae* and qualitative data on their significance within the overall system. This data is crucial for conservation and the planning of restoration or consolidation measures.

3. **Development of tools for maintenance and restoration:** development of a tool for the management of maintenance and restoration based on the digitized data. This tool should facilitate the classification of individual tiles and provide a systematic approach to conservation measures.

4. **Surveying methods:** using different surveying methods such as TLS laser scanning, direct surveying, structure-from-motion (SfM) techniques, and 2D photogrammetry to capture differentiated data. Each method can offer unique insights into the structure and condition of the mosaic pavements.

5. **Photogrammetric Survey:** Conduct a photogrammetric survey using specialized tools, platforms, and lighting equipment. Divide the mosaic pavements into manageable squares for acquisition, ensuring precise orientation in x, y, and z coordinates.

6. **Orthorectification and Vectorization:** Correct acquisition mode using physical references and orthorectification software to create orthogonal mosaics. Integrate the SfM technique with 2D photogrammetry for detailed colorimetric representations and vectorization of individual *tesserae*.

7. **Edge Extraction**: Pay attention to edge extraction during photographic image acquisition to identify potential problems in the mosaic pavements. Use filters and edge detection techniques to highlight high-brightness contrast and deviations indicating variations in pixel brightness.

8. **Output Creation**: Generate a wide range of outputs, including 2D drawings and 3D models, to serve as valuable tools in cultural heritage management and evaluation. These outputs can support maintenance, management, tourism, education initiatives, and future interventions.

9. **Augmented Reality Integration**: Explore the digital use of augmented reality to make the mosaic pavements accessible to a broader audience. Augmented reality can facilitate virtual tours, educational experiences, and interactive exhibitions, enhancing the promotion of mosaic heritage.

By following these steps, or even some of them and adapting the methodology to the specific characteristics of the mosaic pavements in northern Syria (Aleppo), we can effectively document, analyze, and preserve this cultural heritage for future generations.

IV. MOSAIC PREPARATION TECHNIQUES

The production of mosaic work depends on the specific preparation of the surface of the ground or soil, the desired motifs, which can have a variety of themes, and the method of execution, which requires preparation of the ground of the artwork for mosaic laying. In the Byzantine era, two types of mosaic were used: The first type, the wall mosaic, is used for a variety of architectural surfaces, including curved surfaces such as domes, apses, walls, and ceilings. The second type of mosaic is used for laying on the floors of churches, public and private buildings. The mosaics are therefore exposed to various stresses, friction, soil interventions, water, and other factors. Therefore, this type of mosaic is executed on a solid base, which usually consists of the following elements firstly mentioned by Vitruvius[94]:

The ground is excavated to a certain depth that allows the foundation layers to be laid without the surface level of the mosaic being higher than the level required for its execution. Then the first foundation layer is laid to prepare the ground for the execution of the mosaic (*Statumen*), usually consisting of large stones or bricks, gravel, and clay, laid on the ground with a mortar binder of limestone, which has been previously leveled and tamped, as in Roman and Byzantine mosaic pavements. This layer is only present if the mosaic was built on natural ground.[95]

The second foundational layer (*Rudus*) is spread immediately over the *Statumen*, which consists of the same materials as the first foundational layer, but in a smaller size, and a lime mortar with large aggregates.

The third foundational layer (*The Nucleus*) is spread over the *Rudus* in a thinner layer and consists of lime mortar or something else, the nucleus is made of a mortar with fine aggregates.

The bedding Layer, which is the fourth foundational layer of mortar, is very rich in lime and thinly placed in small sections over the nucleus. *Tesserae* are inserted in this layer before the mortar sets.

Finally comes the *tessellatum* layer, which constitutes the mosaic surface and is composed of *tesserae* and mortar filling the interstices between them.

[94] Vitruvius M. P. Book VII, Chapter 1: 239-241

[95] Bassier, C 1977: 58.

It is noted that preparing the ground in the previous method is only done if the mosaic will be implemented in the direct method, where the *tesserae* are arranged directly on the bedding layer.[96] Or in the case when a mosaic *emblema* executed in the workshop on a terracotta tray or stone slab and is transported to the site to be inserted into the in-situ created mosaic pavement. Even this kind of mosaic *emblema* is not known in Syria and was rare but typical to the Roman mosaic art.

V. MATERIALS UTILIZED IN MOSAIC PAVEMENTS PRODUCTION

V.1. MOSAIC *TESSERAE*

The raw materials utilized in the manufacture and production of mosaic pavements are varied, including:

Stone *Tesserae*

Stone is the main element in the manufacture of mosaic work, as they are resistant to weathering, have a long life, and have high endurance in general. In addition, most of them can be polished to brighten dull colors. Stone materials derived from sedimentary, metamorphic, and volcanic rock, used in the manufacture of mosaics, form a wide range, which has led to the emergence of a variety of colors, such as white, yellow, black, gray, pink, and red, as well as orange, brown, and other colors. In addition: in nature, there are many different natural materials with different properties and qualities, and to know which type is suitable for making *tesserae*, they must be carefully studied to see if they can be cut to the proper sizes. Compact limestone and marble can be considered as most often used raw materials. Precious stones such as turquoise and emerald were also in use.[97]

Glass *Tesserae*

Glass consists mainly of silicon dioxide, which is obtained from pure sand, and the metal oxides responsible for the coloring, which are melted at high temperatures between 1200 and 1700 degrees Celsius, usually specified according to the desired color. In the production of glass, a mixture of quartz (pure sand) and metal oxides is poured into a furnace. The molten glass is then removed from the furnace, placed in a metal mold, and

[96] Attia, A, I 2003: 37.

[97] Haddad, R 1999: 42.

flattened. After cooling, it is cut into *tesserae* with a hammer or a cutter. The glass *tesserae* are characterized by a flat top, but micro-bubbles derived from the manufacturing are often present, mainly when the cross section of the glass serves as the visible surface of the tesserae. Their edges are occasionally cut at an angle to facilitate the natural curvature of facades and walls, as they are not easily damaged and are resistant to natural influences.[98]

To make gold or silver glass *tesserae*, they applied a thin metal leaf enclosed by two layers of glass and fixed them hot. The bottom layer is molten glass, poured to a thickness of (5-7 mm), followed by a hammered gold foil one micrometer thick, and a thin glass sheet called a "*Cartellina*", made of blown glass. This latter protects the gold or silver coating.[99]

Using glass *tesserae* in the mosaic always means high cost of execution mainly due to the cost of raw materials and rare technical and professional skills of producing. Many glass mosaic *tesserae* were seen, which were used in the decoration of some parts of the mosaic pavements in the city of Madaba, the Church of St. Elijah, and the Byzantine Church of Petra in Jordan.[100]

Clay *Tesserae*

Clay is a type of fine-grained natural soil material used to make loam and fired bricks and contains clay minerals (hydrous aluminum phyllosilicates). e.g. kaolin, Al2Si2O5(OH)4). Clay is characterized by its soft, doughy form when it comes into contact with water and turns into a hard substance when exposed to high heat, drying, or firing. Most pure clay minerals are white or light in color, but natural clays show a variety of colors due to impurities, such as a reddish or brownish color due to tiny amounts of iron oxide. Clay is quite a common material. Shale, formed from clay, is the most common sedimentary rock. Although many naturally occurring sediments have both silt and clay, clay is distinguished from other fine-grained soils by differences in size and mineralogy. Silt is fine-grained soil that does not have clay minerals; it also has a larger particle size than clays. Many mosaics made of burnt clay *tesserae*, called terracotta, have been discovered. Clay mosaics are made by mixing feldspar, which has silica, aluminum, and flint, with water.

[98] Haddad, R 1999: 42 - 43.

[99] Neri - Verita 2013: 4596; Kürtösi 2021: 500

[100] Roby, Thomas, C1995: 50.

This mixture is then cut into the desired shapes and sizes and fired at elevated temperatures between 950 and 1150 °C in specially built ovens.[101]

V.2. MORTAR

Mortars are a building adhesive used to join bricks or stones and fill the spaces between them, and are for building support for floors, cover walls and vaults. Mortar is generally made in the form of a dense paste that becomes solid as it dries and is composed of various substances such as clay, lime, mixed with fillers, quartz sand, stone particles, marble powder, or organic fibers or a mixture of these to which water may be added. The mortar is one of the main elements used in the manufacture of mosaics. The mortar used for mosaic paving is obtained by calcining limestone, which occurs in nature, after being crushed and burned at elevated temperatures between 800 and 900 °C, producing calcium oxide.

The thermal decomposition of calcium carbonate ($CaCO_3$) at a temperature range of 800-900°C, resulting in the formation of calcium oxide (CaO) and carbon dioxide (CO_2)↑

Equation: $CaCO_3$ (800-900°C) → $CaO + CO_2$

Equation: $CaCO_3 \rightarrow CaO + CO_2$

Calcium-oxide (CaO) (quicklime or live/hot lime) reacts with water (H_2O) to produce Calcium Hydroxide ($Ca(OH)_2$) (slaked lime).

Equation: $CaO + H_2O \rightarrow Ca(OH)_2$

Calcium-hydroxide ($Ca(OH)_2$) (Slaked lime) reacts with the Carbon-dioxide (CO_2) of the air to produce Calcium-carbonate ($CaCO_3$) and water (H_2O). This process is called carbonation. (Fig. 48)

Equation: $Ca(OH)_2 + CO_2 \rightarrow CaCO_3 + H_2O$

Lime is the main type of binder of the mortar used in all Byzantine mosaic pavements.[102] (Fig. 47)

[101] Haswell, J. M 1973: 87.

[102] Haddad, R 1999: 45-46.

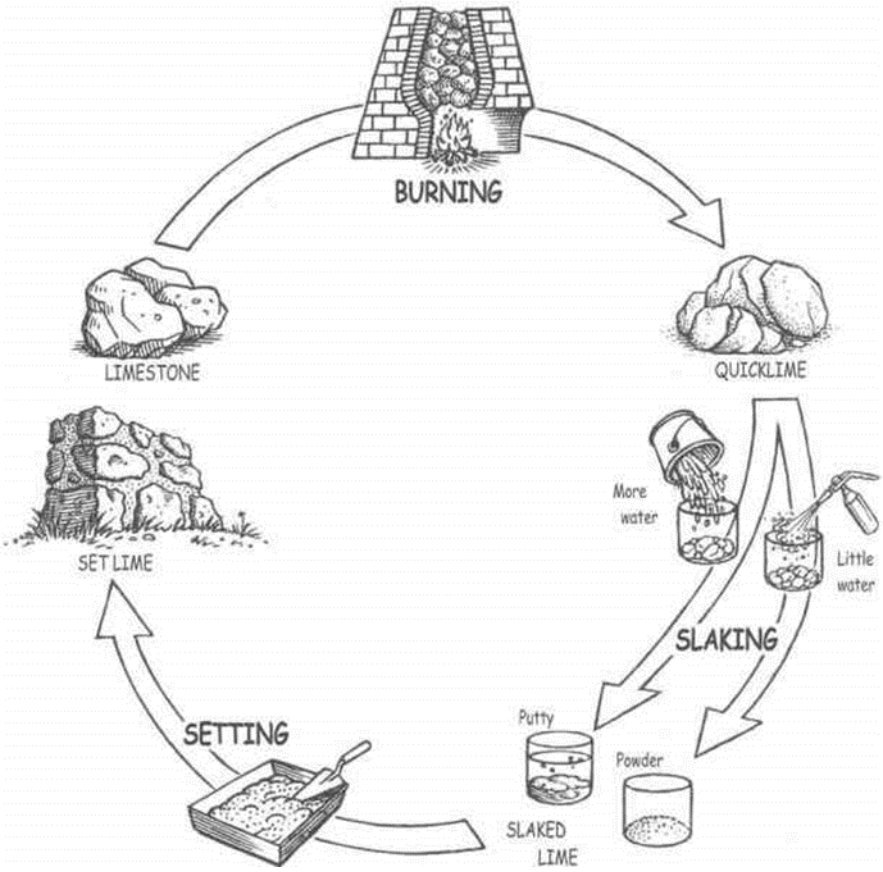


Fig. 47. Lime cycle. (Livia, Alberti, Elsa, Bourguignon, and Thomas, Roby. 2013:93).

Suitable Mortar for Restoration:

1. Air Hardening Mortar: this reacts in the air and is made from air-lime as binder, mixed with salt-free (washed) river sand, quartz sand, or with limestone particles, or with marble powder, and water.

Air Hardening Mortar Components:

If the grain sizes of the filler are mostly large, 1.5 quantities of the fillers are added to a quantity of lime.
If the grain sizes of the filler are mostly small, 2-3 parts of it are added to 1 unit of lime.

The best quality mortar needs to contain various grain sizes to reach high mechanical strength and avoid cracking.

Hydraulic Mortar: Reacts with air but also set under water. Among the fillers volcanic ash (for example *Pozzolana)* is significant.

The difference between air lime and hydraulic lime is about the presence of clay, the clay content of the stone to be burnt. In the hydraulic lime the clay content is greater than 10%; if the clay content in the lime is less than 10%, it is air lime.[103]

To clarify, no samples were collected from the archaeological sites included in this study to determine the chemical formulas. Because municipal funding was only available for urgent interventions, the bulk of archaeological excavations were emergency excavations, which were subject to time and budgetary constraints. We do, however, expect to be able to conduct further excavations at these sites in the future and carry out more in-depth scientific analyses of the materials used.

V.3. TECHNICAL CHARACTERISTICS OF MOSAIC PAVEMENTS OF EARLY BYZANTINE CHURCHES NEAR ALEPPO

This comparative analysis outlines the technical characteristics of mosaic pavements near Aleppo, including aspects such as *tesserae* size, materials, mortar, and construction methods, which reflect an established school of mosaic art:

- **Construction Method:** The traditional tessellation method (*Opus Tessellatum*) was used to create the mosaics in the apse and sacristies of churches such as Tell al-ʿAmarna.
- ***Tesserae* Size:** Small *tesserae* are characteristic, generally ranging between 0.9 and 1 cm, as seen in Al-Mazraʿa al-ʿUlia and Tell al-ʿAmarna. In some sites, such as Martyr John's Monastery (al- Nabgha), the *tesserae* size was precise, reaching 6 mm.

- **Materials and Colors:**
  - **Materials:** Include limestone, red brick, and mixed black and red grains.
  - **Colors:** Were varied and vibrant, including grey-green, yellowish-green, pink, white, and yellow.

[103] Nardi, R 2011: Training Course on Mosaic Restoration and Preservation, Rome, Italy.

CHAPTER VI

DAMAGING FACTORS OF MOSAIC PAVEMENTS AND TREATING METHODS

I. DAMAGING FACTORS

The discovery of mosaic pavements during archaeological excavations is one of the most principal issues facing archaeologists, as it is possible that this mosaic has adapted over time to the environment in which it was buried after a period of time, limiting its continued damage. However, this adaptation can change when a mosaic is discovered if the various environmental factors surrounding it, such as wind, rain, animals, and people, cause damage. All these factors threaten the integrity of the mosaic, leading to its damage if the necessary maintenance and conservation measures are not carried out in time. It is crucial to find out the factors that led to the damage.[104]

I.1. Climatic Factors

Climatic factors such as temperature and humidity are among the most principal factors that lead to the damage and destruction of the mosaic, such as erosion, which directly leads to the decomposition of the rock, in addition to the growth of microorganisms and the transfer of soluble salts.[105]

Temperature

One of the climatic factors that contribute to the physical damage of materials is the change in their shape and size. The continuous expansion and contraction processes in the layers of mosaic pavements and their *tesserae*, resulting from the constant differences in daytime and nighttime temperatures and the seasonal variations in summer and winter, cause cracks and fissures, as these continuous expansion and contraction processes are considered to be the main cause of pressure on the materials used in the production of mosaics, whether they are mortars or *tesserae*, leading to their deformation and cracking. When cracks and fissures appear on the floors, the fragments collect in the cracks and even enlarge them. The

[104] Cassio, A, & Nardi, R 1983: 129.

[105] UNESCO 1979: 215.

daily and seasonal temperature differences also affect the moisture variations in the pores of the *tesserae* and mortars, as well as the dissolving of the salts.[106]

Humidity

Humidity, with its various sources and forms, is one of the most damaging weathering factors for mosaic pavements with their *tesserae* and mortar supports. Excess humidity gets into the mosaic pavements through the capillary property of the materials used or through the condensation of atmospheric moisture, which leads to the separation and swelling of the mosaic surface from the mortar supports. As a result of the attack of the water-soluble salts contained in the soil, such as nitrates, or sulphates from the building materials are able to react with the mortar compounds and transform them into various salts and salt mixtures, such as sodium or magnesium sulphates, or silicate salts, so the mortar becomes fragile and is unable to bind the *tesserae* and then loses them.

Humidity causes cracks and disintegrates of the *tesserae* due to the freezing of water and the increase in volume in the pores in winter or due to the evaporation of water at high temperatures in summer, leaving salt crystals in the pores, which also play an important role in exerting mechanical pressure and causing the crack in the porous structure. The salts deposited on the surface of the *tesserae* by evaporation change the colors of the *tesserae* and obscure their artistic designs by forming stains on them, forming an outer surface crust depending on the type and pH of the soil.[107]

It is worth noting that soil that contains low relative humidity is considered good and suitable for the preservation of mosaic pavements in-situ, and the increasing of this value to the point of saturation leads to damage and destruction, which is manifested by the appearance of bulges in the mosaic surfaces due to the detachment of the corroded and fragile mortar supports of the mosaic surfaces as a result of constant exposure and continuous humidity without evaporation and drainage. In addition, high relative humidity of more than 65% leads to the growth of microorganisms and plants.[108]

[106] Ibid., 215-216.

[107] UNESCO 1972: 52.

[108] Ibid., 55.

I.3. Biological Factors

There are biological damage factors because all archaeological sites have exposed. The presence of rain and wind, which can be loaded with many pollen grains, leads to the growth of weeds and various plants, the growth of small shrubs, and the presence of tree roots between the *tesserae*, causing cracks in the mosaic pavements that damage them. Add to this the growth of fungi and the presence of insects, which thrive in a humid environment, and the fact that some of them excrete acids that naturally affect the dissolution of the binding material (mortar), plus the fact that many mosaic pavements in archaeological sites were covered with a black layer, caused by the death of some microorganisms, which is a major problem in the treatment or cleaning, and if regular maintenance is not carried out, the matter is getting worse as the spread and growth of these organisms in a black layer are difficult to control. These factors although in different measures are present most often together but and the moisture can be considered as the main and initial natural cause of any further phenomena.

I.4. Human Factors

Human activities stand for the wrong way to preserve the mosaic pavements; lack of maintenance, protection from climatic factors, wars, fires, thefts, intentional vandalism of property, and the absence or ineffectiveness of protective systems are among the main factors contributing to the destruction of the *tesserae*. Thus, the other cause of damage and sabotage, as human destroys them directly or indirectly if he does not take preventive measures.[109]

I.5. Natural Factors

Natural factors are among the most principal factors that pose a direct threat to the mosaic pavement and contribute to its damage and vandalism. Natural factors include many disasters such as earthquakes, seismic sea waves, rock falls, volcanoes, hurricanes, floods, and others. These factors lead to many problems and damage patterns, the most important of which is the damage to the mortar supports of the mosaics, their separation from each other along with the deformations of the texture and surface.[110]

[109] Haddad, R 1999: 71.

[110] Ibid., 75.

II. MOSAIC TREATING METHODS

The discovered mosaic pavements are exposed to many physical and chemical factors that attack the rock in general and the mosaic pavements in particular. Therefore, it is necessary to take protective and conservation measures that will ensure the preservation of the *tesserae* and their survival in good condition for as long as possible, restoring them to their former state. The following steps are among the most important to be followed by specialists on site:

II.1. Diagnosis

Study the causes and methods of mosaic damage to figure out the methods of protection and treatment to protect the mosaic pavement from damage and destruction. Study the biological factors that lead to the destruction of mosaic pavements and then develop a work plan, obtain the necessary materials, and calculate the time needed for maintenance and restoration. Complete documentation of the mosaic, recording each mark on the surface of the mosaic, and continue the documentation process with the continuation of maintenance and restoration work, using photo-documentation, by digital cameras to document all manifestations of damage to the mosaic, using graphical documentation on a transparent plastic foil the mosaic is drawn on a 1:1 scale together with the manifestations of damage, gaps, and bulges (damage map), with different colours than used in drawing the rest of the mosaic.[111]

Also, stratigraphy sondages need to be opened in the different sections of the mosaic pavements in the areas of losses to detect the underneath layers and their characteristics and properties. Photo-documentation and graphical documentation with measuring are important to execute.

II.2. Protection

Protection of mosaic surfaces displayed outdoors must be done after all restoration work on the mosaic pavement is completed by applying protective materials to preserve the *tesserae* from damaging factors such as sunlight, dust, and humidity. Before any protective materials are applied to the surface of the mosaic, comparative tests must be conducted to

[111] UNESCO 1979: 225.

figure out if the protective materials will withstand environmental conditions so that the mosaic can be protected and treated again before the effectiveness of the protective materials wears off. Protective materials are temporary, not permanent, and the duration of their effectiveness is limited. However, if the restored mosaics are protected from weather and environmental factors and are displayed inside the buildings, it is better not to apply any protective material to the mosaic surface and leave it as it is.

II.1. Maintenance

As for protecting mosaics in situ from environmental factors, controlling environmental factors is the best protection for mosaic pavements (Preventive conservation), but this process is difficult because these factors cannot be in all cases controlled. Protective shelters or even protective buildings would be needed. Temporary reburial, a covering system, thermal insulation layers can be applied to the surface of the mosaic to temporarily protect it. However, this protection hides the artistic design, so these layers must be removed in good seasons when pollution and condensation are low, and frost does not occur.[112]

Periodic maintenance is considered necessary to preserve the mosaic pavements, reinforce the restoration efforts, and verify their success. The goal of maintenance and periodic review is to prevent deterioration rather than treat the consequences with complex restoration methods. After the completion of maintenance and periodic review, the exposed mosaic pavements can be covered in winter with a breathable covering (geotextile or vapor permeable membrane/foil)[113] and above it, a layer of sand with a thickness of 20 cm to preserve the mosaics and temporarily protect them from surrounding damage factors. However, it should be noted that the covering (if it is made of plastic which acts as vapor barrier) remains on the mosaic for more than a year is very harmful and contributes to its damage and deterioration. Mosaics can also be protected from environmental factors by making umbrellas that supply protection and safety for the mosaic and the site.

In conclusion, it can be said that by carrying out all the restoration works, the mosaic heritage will be preserved from loss and damage, but if it is not possible to keep, treat (cover) or restore and display the mosaic pavements at the original archaeological site, it

[112] Torraca, G 1988: 93.

[113] Personal communication of B. M. Kürtösi

can be needed to resort to the technique of lifting the mosaics and taking them to a museum to preserve them in a safe place.[114]

III. METHODS OF LIFTING MOSAIC PAVEMENTS

Most professionals theoretically prefer to keep the mosaic pavements in their original locations, but as we have already mentioned, if the mosaic pavements cannot be conserved in their current locations and have several problems such as bulges, depressions, detachment of some *tesserae* and mortar, and leakage of rainwater, they must be removed. In this case, it will be decided whether the mosaic pavement will be lifted off and taken to the museum or treated and then returned to its place. Attention should be paid to the figural scenes of the mosaic, and these should not be cut off in the middle. It is also important to consider the direction of the *tesserae* and avoid cutting scenes with sharp angles or straight lines. Attention should also be paid to the gaps present to avoid creating large sections that have multiple gaps.[115]

Steps For Lifting and Removing the Mosaic Pavements:

1. Removing the soil and the rubble that are on the mosaic pavement, reinforcing the gaps and weak edges of the mosaic pavement, and fixing them with temporary mortar; then cleaning with water, brushes, and some sharp tools; allowing to dry; and then photographing and carefully studying to determine the best place to cut the mosaic. (Fig. 48)





Fig. 48. General view of the mosaic pavement after rubble removal and cleaning of the mosaic surface. (Jbaee, M. 2010).

[114] Ibid., 95.

[115] Haddad, R 1999: 103.

2. Drawing the mosaic pavement on a scale of 1:1 on transparent hardened plastic, then drawing all the *tesserae*, numbering each color.

3. Planning of lifting the mosaic pavement, numbering the pieces, and listing the problems of the mosaic on the plan. (Fig. 49)



Fig. 49. The creation of a detailed mosaic pavement drawing and the formulation of a lifting plan. (Jbaee, M. 2010).

4. Adhesive is applied to the mosaic. The canvas is cut to the required size and then placed on each section of the glued mosaic pavement so that it extends about 5 to 10 cm around the edges of the section to be lifted.[116]

5. Drawing a reference network on the canvas to keep the direction of mosaic parts when they are lifted; using pens of different colours, adjusting one colour for the horizontal network lines and another for the vertical network lines; then, all the mosaic parts are numbered with letters and numbers according to the detailed cutting plan; horizontal and vertical reference lines must be drawn along all the parts, so that the walls, if any, will be the only reference in the future to determine the position of each piece when it is to be returned. (Fig. 50)



Fig. 50. Put Adhesive diluted with water to the mosaic and a reference network on the canvas with special pens to keep the direction of mosaic parts when they are lifted. (Jbaee, M. 2010).

[116] UNESCO 1972: 183.

6. Beginning with the lifting of the mosaic pavement by separating the *tesserae* layer from the base mortar layer on which the *tesserae* were paved, inserting metal tools and flat chisels under the mosaic layer to a depth of 5 cm, and placing each part of the mosaic that was lifted on a wooden plate; the number of the part is then placed on the edge of the wooden plate. Collecting the *tesserae* and placing them in bags with the number of the mosaic part to which they belong.[117]

7. The individual parts of the mosaic pavement are turned over so that the canvas on which the *tesserae* lie faces the wooden plate. (Fig. 51)



Fig. 51. Lifting of the mosaic pavement process and putting it in the wooden boxes. (Jbaee, M. 2010).

8. Removing and cleaning the powdered parts of the mortar that adheres to the base of the *tesserae* with pointed tools (chisels, scalpels, and coarse brushes) to ensure adheres it well to the new mortar when it is returned to its original location after treatment or placed on a new support for display in museums. (Fig. 52)



Fig. 52. Removing and cleaning the powdered mortar that adheres to the base of the tesserae. (Jbaee, M. 2010).

[117] Haddad, R 1999: 105-106.

CHAPTER VII

MOSAIC PAVEMENTS OF EARLY BYZANTINE CHURCHES NEAR ALEPPO

The purpose of my thesis is to shed light on the archaeological discoveries related to the mosaic pavements found in Byzantine churches in northern Syria. Specifically, I will focus on the mosaic sites located around Aleppo, including Tell ʿAmārana, al-Nabgha, Deir Qinnsrőn (Qinnasrin Monastery), Zamka, \ Elî Bîskê, \ ʿUqlat al-Bwydir, and Tell Bājr, as well as al-Mankūba. These discoveries were made between 2000 and 2011 through a collaboration between the Directorate of Antiquities, the Museum of Aleppo, and foreign archaeological missions. Every mosaic that has been found belongs to the Byzantine period. The Syrian missions in Aleppo are headed by Dr. Youssef Kanjou, Dr. Houmam Saad, and Dr. Muhammed Fakhro, Architect. Youssef Dabety, Adnan Al-Mohammed, Abdullah Nasser, Firas Alhaj Ali, and Qais Abboud.

It should also be noted that there were many researchers and emergency and systematic archaeological excavation missions by the Directorate Antiquate and Museums of Aleppo and foreign missions that worked in the province of Aleppo, and many archaeological sites dating from the Byzantine period were discovered between 2000 and 2011, including Byzantine churches from the 5th and 6th centuries AD. Furthermore, all these churches were paved with mosaics, and we can mention the archaeological mission that worked at the site of Deir Qinnsrīn and the archaeological mission that worked at the sites of al-Nabgha, Tell al-ʿAmarana, Zamka, ʿUkla al-Bwydir, Tell Bājr, and Elî Bîskê.

In this academic research dedicated to studying the mosaic pavements of Byzantine churches around Aleppo, I will review and study the al-Mazraʿa al-ʾUlia mosaics, Tell al-ʿAmārana, Deir Qannsrin, Mosaic of the Martyr John's Monastery (Al-Nabgha), al-Mankūba, ʿUqlat al-Bwydir, Zamka, Tell Bājr, and ʿElî Bîskê. (Fig. 53)

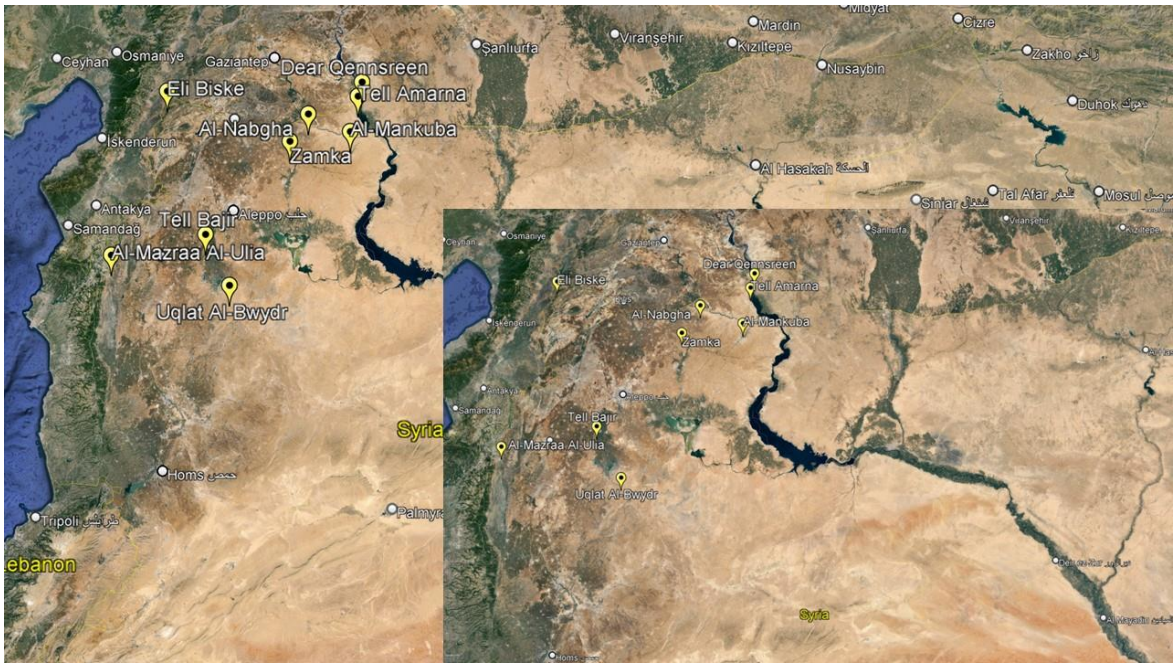


Fig. 53. Mosaic Pavements of Byzantine Churches in Aleppo (Syria). (Source: Google Earth).

I. MOSAIC PAVEMENT IN THE VILLAGE OF AL-MAZRAʿA AL-ʿULIA

Geographical Overview

The village of al-Mazraʿa al-ʾUlia is situated in the northern region of Syria, approximately 17 kilometers east of Jisr al-Shughūr city in the Idlib governorate. In 1970, the fortuitous discovery of the sacristy containing reliquaries led to the complete discovery of the church and the mosaics in the area. Due to concerns about mosaic protection at the original site, the decision was made to lift the mosaics found there. The architectural remains were documented and planned by a team under the leadership of *R.P. Castellana* in 1971. Unfortunately, the mosaics in the front section of the nave and a significant portion of the northern aisle were destroyed. However, the mosaics in the central nave and the southern aisle are well-preserved, except for some limited areas where traces of burning are present. These surviving mosaics are currently exhibited in the inner courtyard of the National Museum of Aleppo.[118] (Fig. 54)

[118] Donceel-Voute, P 1988, A:178.

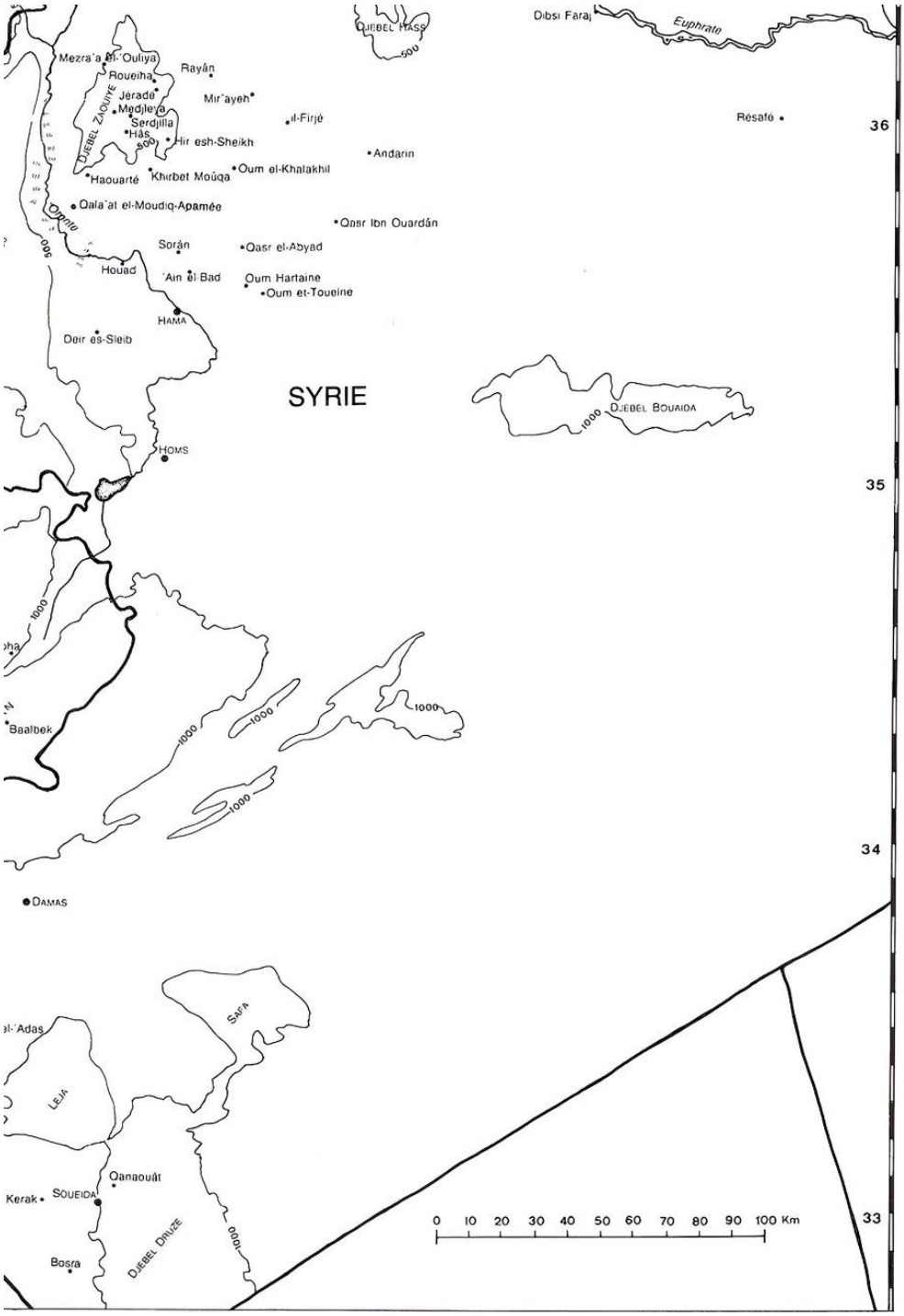


Fig. 54. Map of Syria locating early Christian churches. (According to map I in Donceel-Voûte. P 1988, A: 14).

Church (Basilica) Layout

The basilica discovered in al-Mazraʿa al-ʾUlia has a rectangular plan with a shallow apse that hides the sanctuary and the two rectangular sacristies that surround it. The church has three naves separated by columns, of which only the bases are preserved without decoration, forming the six short side aisles (1.60 m between columns). The side aisles end

in quadrangular sacristies; the left sacristy is connected to the apse by a passage that rises over two steps and to the nave by a sill next to a step. The right sacristy, the martyrium, is much lower and located far below the apse walls. It was built with small stones connected with a clay mortar with pebbles and reinforced at regular intervals by high upright blocks; only the eastern third of the north facade, the east wall, and the south facade have been preserved, with a height of two meters in the east but on two courses only at the west.[119] (Fig. 55)

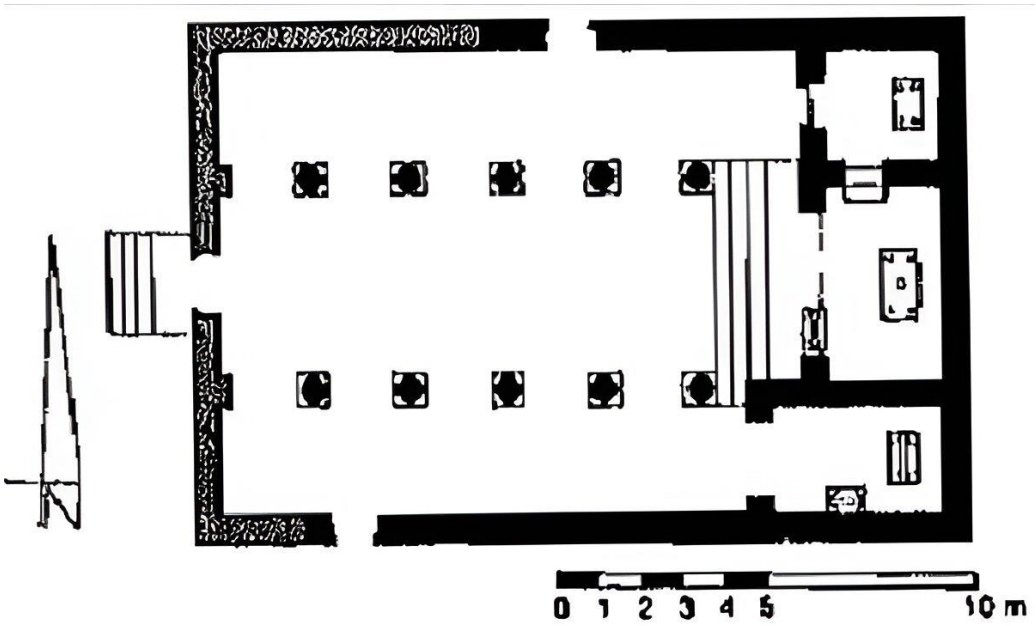


Fig. 55. Church layout in the "Basilica" architectural style. (Donceel-Voûte. P 1988, A: 178).

Three doors are documented in the west facade, one each in the north and south facades, but only in the west on two courses. In the eastern axis of the southern sacristy, leaning against the back wall, there was a huge sarcophagus-relic shrine with all the small circuits through which the oil was consecrated, being poured over the relics, and collected in a sort of small, vaulted niche. A second, smaller reliquary sarcophagus was added and leaned against the south wall. In the sanctuary, three of the five small columns that supported the upper slab of the altar were found incomplete in place; their small Corinthian crowns have a highly simplified bas-relief. The sanctuary was partially close to the nave by the pillars, one of which was to be the triumphal arch. A large sarcophagus with a winged cover stands across the board at the top of the last of the four steps and is superimposed on the front mosaic pavement of the sanctuary, which thus blocks access. The northern sacristy,

[119] Ibid., 179.

connected to the sanctuary by a door and four steps on a small staircase, should be equipped with a four-legged table.[120] (Fig. 56)

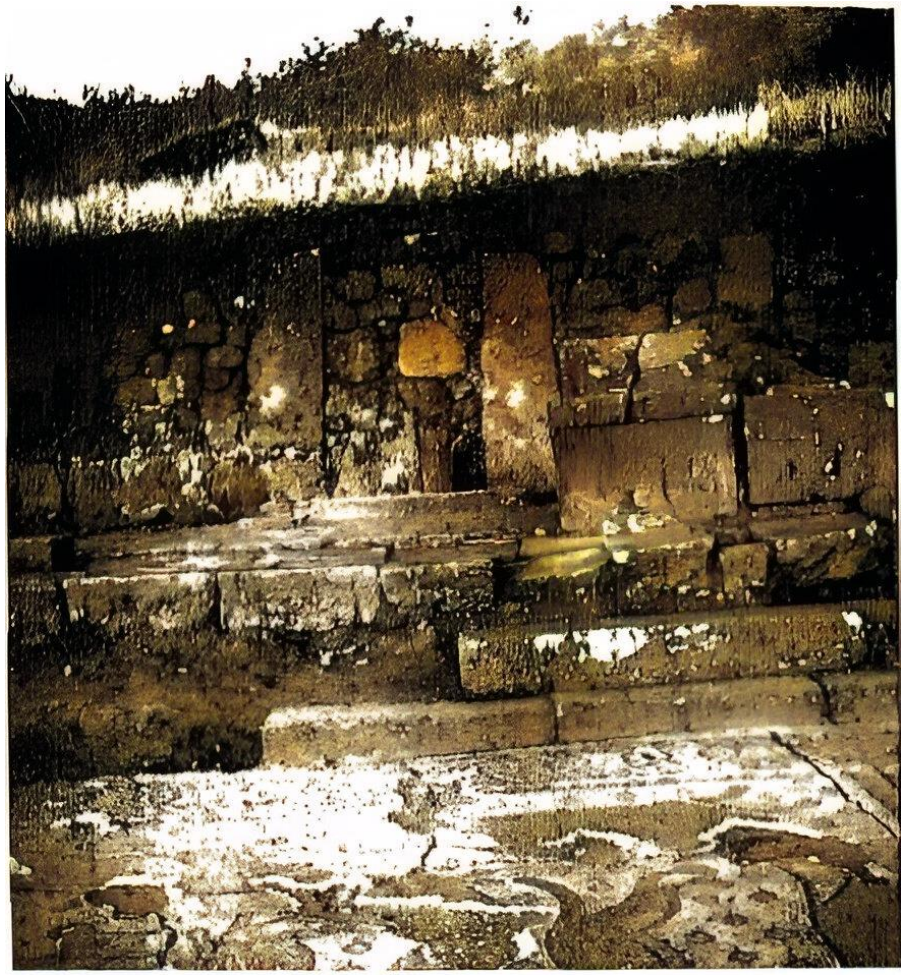


Fig. 56. The sanctuary view from the nave. (Donceel-Voûte. P 1988, A: 178).

Mosaic Pavement of the Basilica

The *tesserae* have a size range of 0.9 to 1 cm. Colors: gray-green, yellowish-green, pink, white, and yellow. Not really black, but gray or a stone with black and red grains mixed. The material is limestone for white, pink, and gray, very dense, and smooth; brick red and "black" come from black and red grains. (Fig. 57) No details are known about the underlayers of the mosaic, and the installation of the *tesserae* is tight. The laying mortar is quite fine and consists of lime, fine gravel, sand, and ash; the mosaic is little used. [121]

[120] Ibid., 180.

[121] Ibid., 182.

In the central nave, a white connection of *tesserae* parallel to the edges precedes a 43 cm wide border. The connection is irregularly reduced to less than four rows of *tesserae* in front of the steps of the sanctuary; they must have been "messed up" on the mosaic during the changes to which they were subjected. This outer monochrome frame is directly to treat the irregularity of the room and to let the main fields and decorative frames to be regular. Between two black lines, the border consists of a series of edges whose strands, bordered by black, red, are grey/grey green/white and once red/brick-red/pink. The squares contain small straight green squares; the third is dark gray/gray/white; and the last is yellow ochre/crimson, yellow/white. A row of brick-red, jagged triangles serves as an interior frame.

The field represents an animal carousel against a white background with rosebuds scattered irregularly in all directions. All the animals are represented one behind the other and with their backs to the center of the field, except for a dog, a humpback ox, and two birds that cross the field in the western part. All four-legged animals run, and the birds are at rest. Starting from the west and going clockwise, we see a leopard, a doe, a small bear, a large brown bear, two small hares with trimmed and clipped manes and knotted and combed tails, and above them a lioness. Next, a pelican, a deer, a crane, and two sloughy dogs are placed behind two hares, one of which turns its head toward the back, and hooves to the south; a lion cub and a dog are placed, then two donkeys, above which run a gazelle and a leopard; above and below the leopard are placed a kind of goose and a duck.[122] Then, between a tiger and the humpback bull that precedes it, a bird is placed with its paws toward the center. Beyond the west, a pigeon, an ibex, the hindquarters of a large waterbird, and a quadruped with cloven hooves above a bird. Then, in the north-south direction, comes a group formed by a songbird, a dog showing fangs, a rather large and rather deteriorated ram, and a bird with a long tail.[123] (Fig. 58, Fig. 59, Fig. 60)

[122] Ibid., 184.

[123] Ibid., 186.

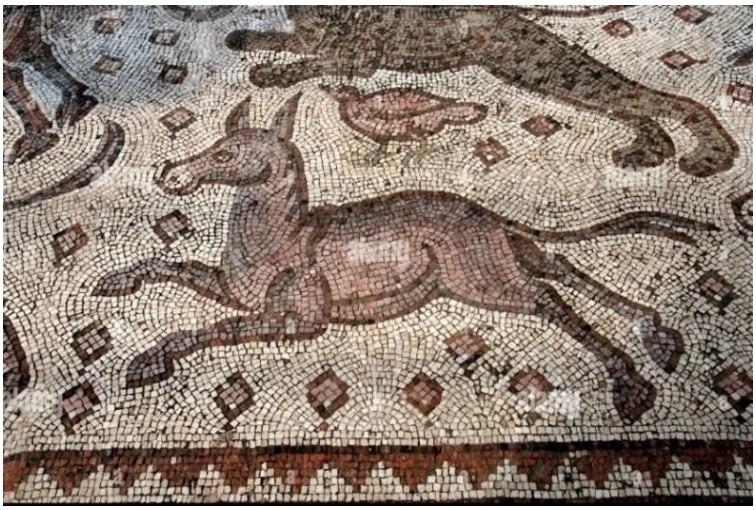


Fig. 57. Byzantine Mosaic: "The pink horse" maybe a donkey in the nave of the Basilica. National Museum of Aleppo, Syria. (Donceel-Voûte. P 1988, A: 179).



Fig. 58. Byzantine Mosaic: The whole mosaic of the Basilica nave. National Museum of Aleppo. (Alhaj Ali, F. 2021).

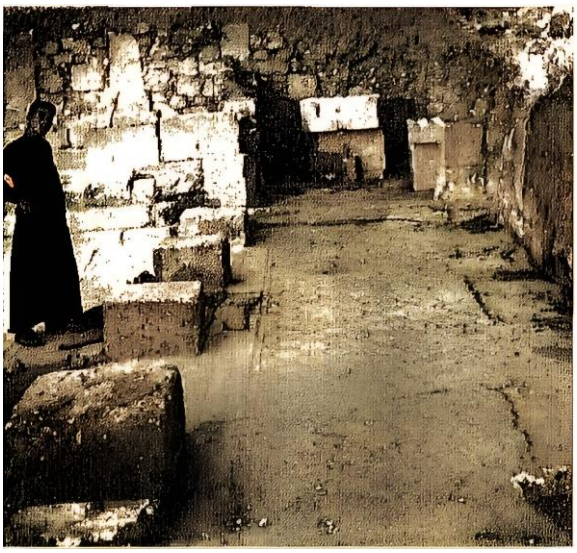


Fig. 59. Byzantine Mosaic: The Southside view from the west of the Basilica, Syria. (Donceel-Voûte. P 1988, A: 180).

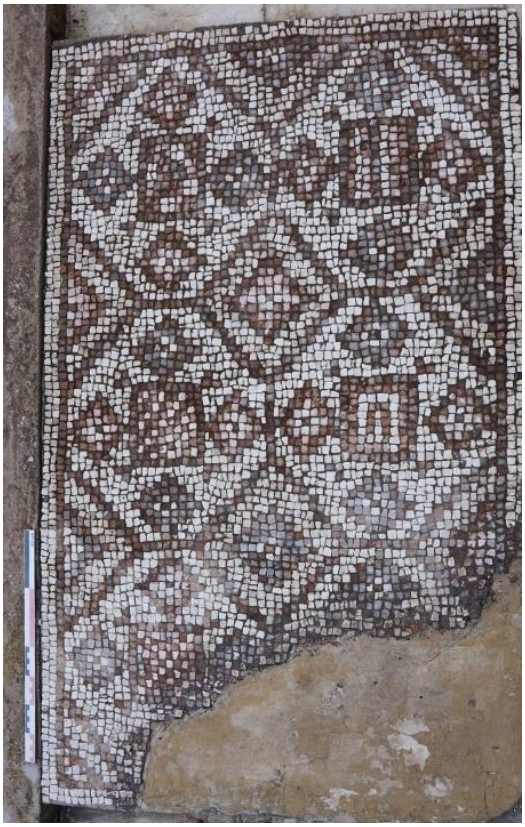


Fig. 60. Byzantine Mosaic: Southside Mosaic pavement and threshold view from the east of the Basilica, Syria. (Donceel-Voûte. P 1988, A: 180).

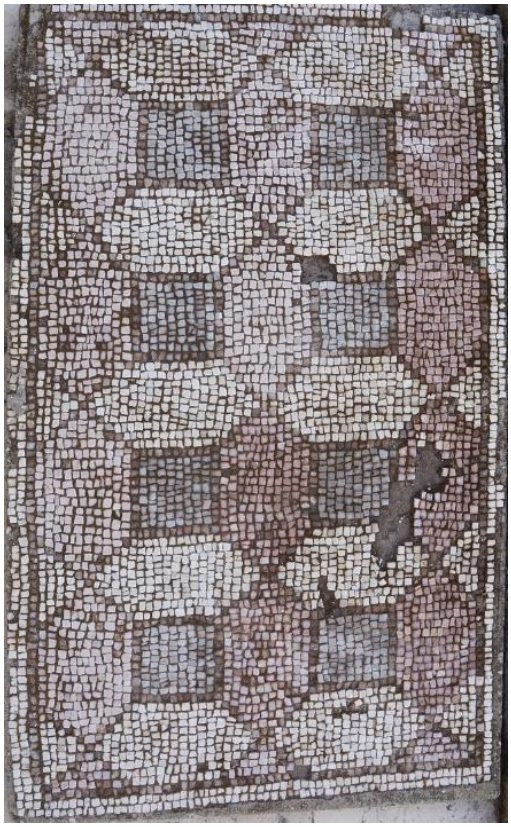
The rosebuds in the field are shown in a rhombus shape with a single *tessera* at the tip as the stem. They are particularly dense around the group facing the center; there is a group of these flowers that interrupts the lower arrangement of white tesserae and flowers between the animals in the rest of the field. We can assume this group could have been made by another craftsman, but the colors used are the same as in the border. The damaged surface over the entire width of the western side allows for two different hypotheses for its restoration. According to one, there would be only a single large register of animals parallel to this narrow side, as on the narrow side to the east, but several. According to the second, the field would close after the group of preserved animal figures; the empty space between the mosaic and the threshold could easily have contained a dedicatory inscription.

The pavement of the south aisle consists of a short geometric mosaic in the west, followed by a longer mosaic in the east, extending over three fields. The first mosaic in the west, framed by a simple white connecting strip, consists of a square grid of stripes decorated with indented, jagged diamond shapes, with openwork straight squares at the intersections. The large intermediate squares are decorated with a variety of rainbow patterns and Solomon's knot, with a rosebud in all four corners. In this case the rainbow pattern can be interpreted as marble imitations, and as the imitation of the marble slabs used to pave floors and walls, the so called "open stone" when they used the patterns (veins) of a

marble as decorative element.[124] The mosaic has the shape of an "L" hollowed out on the southeast side, in front of the south door. This narrowing of the mosaic is matched by a large slab that sits slightly above the mosaic and below the threshold. It reinforces the pavement at the entrance of the nave and somewhat compensates for the high level of the threshold of this south door of the church, which opens onto the second row of columns. The second mosaic also has only the white connecting strip as a frame. The field is an orthogonal composition of nested circles drawn by gradient bands. Large, round flowers fill the large circles. No information can be given about the mosaic in the northern aisle as it was in bad condition. Only the mosaics of the last three interstices in the east of the colonnade in the south were restored and preserved. These small rectangular mosaics are all decorated with geometric patterns. The third pavement from the east is a composition of secants and adjacent octagons defining alternating pink (forming lines) and white (forming lines perpendicular to the previous ones) oblong hexagons and small blue-grey squares.[125] (Fig. 61)

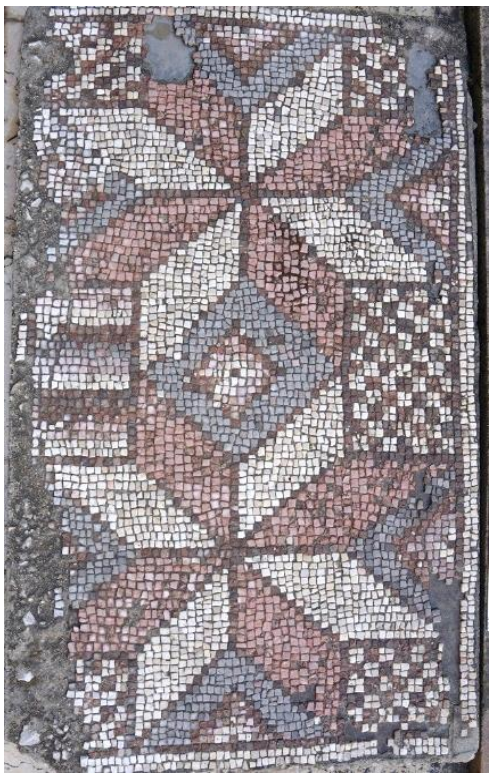


A



B

[124] Kürtösi 2010: 57-58.
[125] Ibid., 186.



C

Fig. 61. Byzantine Mosaic: (A) The interlocking mosaic pavement on the Southside. (B) The interlocking mosaic pavement on the Southside. (C) The interlocking mosaic pavement on the Southside (C). National Museum of Aleppo. (Alhaj Ali, F. 2021).

The second preserved intercolumnar mosaic consists of connected irregular octagons executed in black and red. They contain a straight square decorated with rainbow effects in checkerboard or band form with red, pink, sometimes gray gradients, on each of whose four sides an alternating gray square is tangent to the top. and red-pink, square, or triangular intervals interlock squares and triangles in red-pink or pink-gray gradients. The last preserved intercolumnar mosaic is composed of two connected stars, each consisting of eight parallelograms, alternating pink and white. The long sides of the parallelograms form intervals in openwork squares on the blue-grey top, and the short sides form rectangular refusal intervals and quarter-square intervals in the angles, five of which are decorated with a red-and-white checkerboard pattern and one with white, pink, or brick red, black, white, light grey, dark grey, or black, white, or pink running rainbow stripes. The remains of the fourth row of columns are decorated with parallelepipeds.

The four steps leading to the 57-centimeter-high apse are large blocks of well-cut limestone, placed on the only preserved step of the original staircase. Two rows of these blocks from the wide upper step. In front of the beginning of the limestone pavement that

forms the pavement of the sanctuary proper and the base of the altar, a thick slab of 1.57 x 0.86 m, regrooved with square holes at the four corners and in the center, fits itself into this pavement but emerges from it by about 10 centimeters. Slabs of the same material and the same size, with a side of about sixty centimeters on average, pave the floor of the north sacristy. A large slab of 1.30 x 0.73 m on the side, hardly smaller than that of the sanctuary, in short, regrooved to receive four feet, is located parallel to the east wall; it is slightly offset to the north.[126]

A large, slightly raised, monolithic stone threshold separates the south aisle from the Sacristy of the Martyrs. The piers of the rebuilt arch that formed the entrance to the sacristy are located along the northern edge of the stone threshold. In the Sacristy of the Martyrs, the mosaic pavement is divided into four different geometric mosaics, none of which has a border. The main mosaic is composed of fortifications and tangent circles forming quatrefoils and enclosing a square at the top. It is surrounded by a long, narrow mosaic that runs parallel to it and runs along the north wall. The field is a sloping grid of jagged nets with jagged squares inscribed in the spaces between them. Two small mosaics are located in the northeast and southeast corners of the room. They surround the large reliquary that occupies the center of the side and is placed in a rectangular reserve in the white field. Both bear a composition of secants and adjacent octagons that define rectangular squares and hexagons with a jagged square at the top.[127]

Dating of the Basilica

It seems that no inscription has been found that gives a date; therefore, it is the peculiarities of the building and its decoration that allow us to determine the date of the mosaic. The design of the pavement mosaic of the southern sacristy, which provides for its establishment as a church of martyrs, allows us to locate this room after the years 420–430 AD, when the habitus of these churches was established. The stylistic study of the mosaic pavement allows it dating to the last third of the 5th century. The second phase of construction, to which the reinstallation of the Arch of Martyrium and the raising of the level in front of the sanctuary can be added, remains entirely in the spirit of the original

[126] Ibid., 185.

[127] Ibid., 186.

construction. These are only rearrangements, difficult to date, but not after the end of the 6th century.[128]

Basilica Style

The mosaic pavement of the nave is one of a series of mosaic pavements with animal decorations that were very characteristic of northern Syria in the second half of the 5th and 6th centuries. The style of this mosaic pavement is characterized by several features: the proximity of the animals, whose shapes overlap, leaving little room for the background; the nature of the flower buds in the latter, which are very stylized, scattered without order, and without any other landscape or vegetation element used; and finally, the rendering of the bodies of the animals, which are compact with simplified silhouettes, where the muscles and masses are delineated by a single clear line. This form of the juxtaposition of elements delimited by a line and a dark band is characteristic of the stylistic development of mosaic figures at the end of the 5th century. These features of composition and representation place this mosaic after those of the porticoes of *Apamea* (469 AD), in the same stylistic phase as the animal mosaics of the basilicas of *Haouarté* (483–487 AD), and before the great "*zoological garden*" of ʾUm Hartāīn (500 AD). The execution of the nave mosaic can thus be placed fairly precisely in the last two decades of the 5th century. Both the interweaving of its border and that of the eastern mosaic in the southern aisle, decorated with large round flowers, would fit this date. The grid of the same aisle is almost identical to that of the southern aisle of the southern church of *Haouarté* (483 and 484 AD, according to the inscriptions in the nave and the north sacristy). The small geometric interlocking mosaics offer subtle color harmonies reminiscent of the great tradition of coloristic geometries of the previous century.[129]

Icon Comparison and Analysis

Regarding the iconography, we can make a small remark about Solomon's knot in one of the interval squares of the grid in the southern aisle: all the other intervals are decorated with rainbow patterns, except this one. However, it is located on the axis of the threshold of the south door, in the central square of the aisle, and not directly on the threshold; it is therefore visible as a node. This is again illustrated by the presence of this motif in an

[128] Lassus, J 2012: 159.

[129] Levi, D 1947: 584-586.

entrance. On the other hand, here we have a new example of a large animal mosaic in the nave. The animals chase each other, they do not fight, but the only ones completely peaceful are the birds. The same activity prevails in the east mosaic of the nave of ʾUm Hārtaīn and around the nave of Halaoua.

Liturgical Organization

There are some interesting clues about the liturgical organization: the great church of the martyrs, with its imposing reliquaries, is located in the south of the sanctuary. It was used until the abandonment of the building; the piece of the column with the capital that served as a base for the vessel to contain the consecrated oil was still in front of the front opening of the axial reliquary. (Fig. 62, Fig. 63)



Fig. 62. Byzantine Mosaic: The martyrium with the reliquaries in place. (Donceel-Voûte. P 1988, A: 183).



Fig. 63. The sanctuary view from the north sacristy, after the excavation. (Donceel-Voûte. P 1988, A: 184).

This church opened widely onto the aisle, whose door to the outside (to the south) had a reinforced threshold, well suited for an intense passage. As for the reliquaries, they even invaded the sanctuary; the one blocking the entrance on the right side is particularly large. The conquest of the sanctuary by the reliquaries can also be observed elsewhere, namely in

Qirqbizé, where they found three reliquaries, albeit smaller, in the southeast corner of the sanctuary and two below the chancel barrier on the side of the nave.[130]

However, the term "*reliquary*" applies rather poorly to this massive sarcophagus, since there is no system for recovering a sanctified liquid; perhaps it is better to see where the tomb of a holy man, a church founder, or a patron saint is located. It could be the final resting place for the chief clergyman who undertook the renovation of the church.

The sanctuary and the martyrium bear the marks of a reorganization; the steps of the podium were advanced in the nave, and their upper level was raised. he platform of the choir is only a few centimeters below the level of the sanctuary, a step taken in the spread of the apse arch. It is not clear why the entrance arch to the martyrium was reconstructed, moving it slightly to the east so that it spans the original threshold. The design of the mosaic pavement of the Martyrs' Church is similar to that of the church added to the Basilica of *Julianos* in Brād. (Fig. 64) It was intended for a main axial reliquary. The reason for the long, narrow mosaic against the left wall may be linked, like that of the two north-east and south-east mosaics, in that it was to accommodate the supports of future reliquaries, although the second reliquary was found on the main mosaic against the south wall. A small portable reliquary, of which only the two-shelled lid and the opening on the ridge were found, had yet to find a place either in the Martyrs' Church or in the north sacristy with the rest of the church treasure.[131]

The original plan of the building with the long church of the martyrs and the retreating northern sacristy area is unexpected; it is found in the reverse form in the rebuilt church of Sinhār. From this comparison, we can deduce that the northern sacristy may also have been remodeled; its old entrance would have been at the same level as that of the martyrium. The poor condition of the mosaic pavement and of the building at the end of the northern aisle does not provide any information that could confirm or deny this hypothesis. In the four-legged base of the sacristy, we can recognize the larger table base of the northern sacristy of Brād. (Fig. 65)

[130] T. Chalenko, G 1953: 334.

[131] Ibid., 1953: 335.

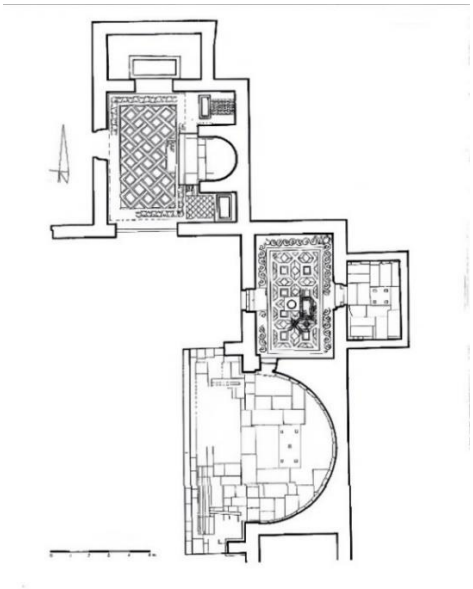


Fig. 64. Plan of known Mosaic pavements of Brad's church. (Donceel-Voûte. P 1988, A: 41).

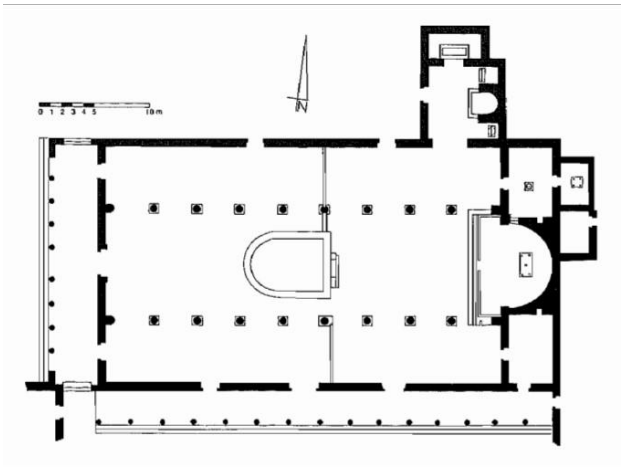


Fig. 65. Layout of Brad's church. (Donceel-Voûte. P 1988, A: 39).

The doors closing the room on two sides would be sufficient to call it a "*skeuophylakion"*, a storage room for the treasures of the church. The wide table could be used to store the sacred vessels but also to transport the priestly clothes and the wafers prepared for the office. There was no cabinet on the wall; other devices, probably chests, were necessary to complete the furnishing of this room that served the sanctuary.[132] (Fig. 66)

[132] Doncel-Voute, P 1988, A: 186.

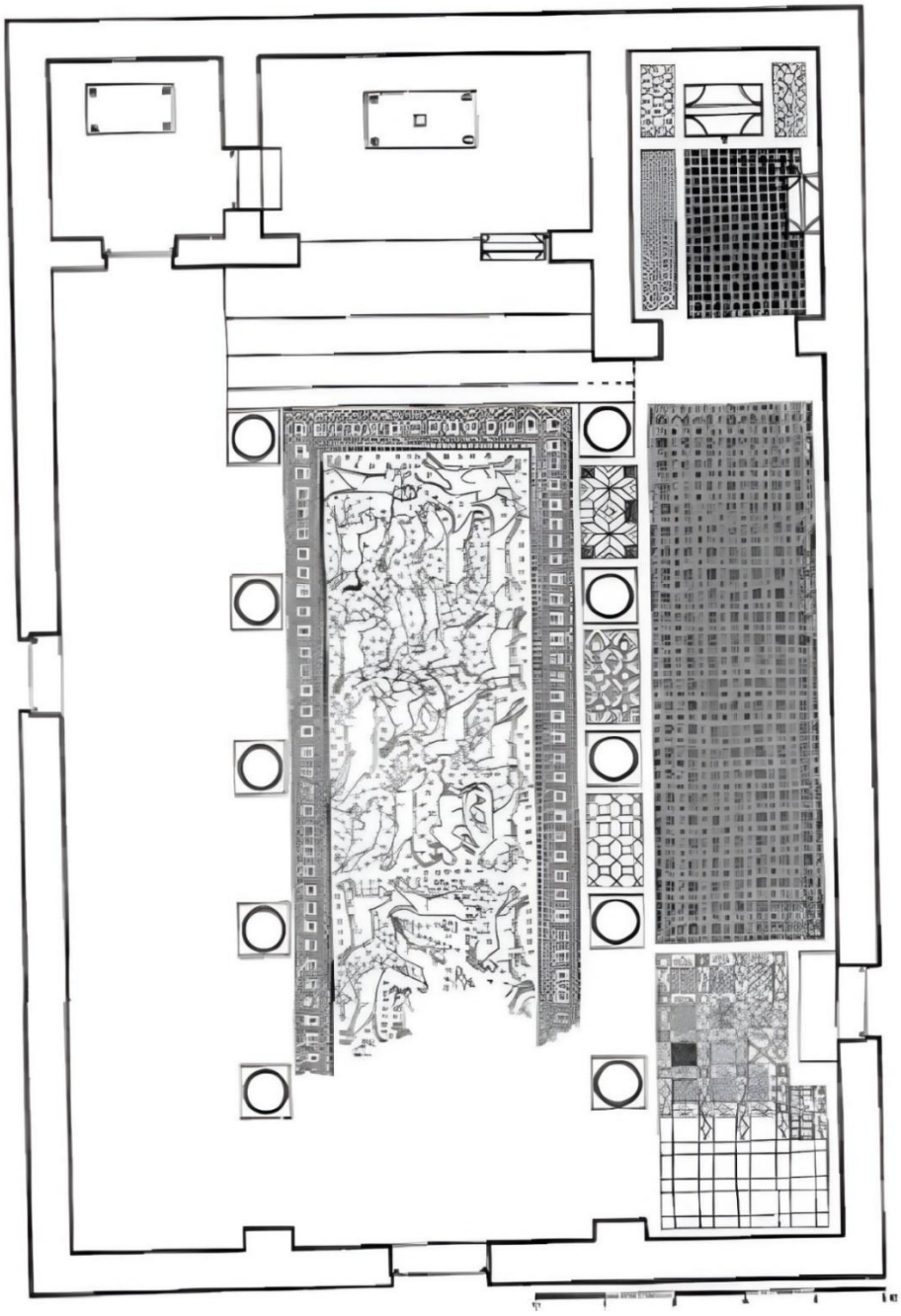


Fig. 66. Attempt to Restore Mosaic Pavements. (Donceel-Voûte. P 1988, A: 185).

On the site of Jebel al-Zawiya, it is interesting to determine the symbols that replace this monument in the movement of *Apamea* or Antioch. It is noted that the church of the Martyrs is open to its full width on the aisle to the south of the sanctuary. *Lassus* and *Tchalenko* have made it possible to describe the architecture as specific to the Antiochians. It is also noticeable that the sanctuary is extremely high compared to the nave and has an altar that is moved to the back of the sanctuary. No liturgical furniture seems to have been preserved in the nave.

However, it is not impossible, and we should not forget that there was a structure in the nave that served as a bema; it was made of wood and therefore could have disappeared without a trace. In the unforeseen north-south orientation of the florets in the field of the nave, which is accompanied by the change in the direction of view of the neighboring animals, one could easily see the reference to a liturgical installation of this type, located at two-thirds of the length and preserved from the mosaic pavement of the nave. This reference cannot be overlooked, even if it is not as clear as in the case of the exedra of Rayān, of Roueiha, or of ʾUm Hartāīne, which are clearly represented on the mosaic pavement.[133]
(Fig. 67)



Fig. 67. View from the Southeast towards the paved Bema in Roueiha Church, Syria. (Donceel-Voûte, P 1988, A: 286).

Thus, the interior layout of this church makes it possible to locate it in the liturgical area of Antioch. The progress of the border between this and the liturgical province of *Apamea* can therefore be indicated at this place as running straight westward, after passing between Frikiya and Kafr Hayâ.[134]

[133] Ibid., 186.

[134] Ibid., 186.

II. MOSAIC PAVEMENT OF TELL AL-ʿAMĀRNA CHURCH

Geographical Overview

The site of Tell al-ʿAmārna is found in northern Syria, on the right bank of the Euphrates, about 8 km south of Jarablus (36° 44' 36" north latitude and 38° 00' 40" east longitude) and near the Syrian Turkish border. Tell al-ʿAmārna is an oval hill about 20 m high, surrounded by the Wādī ʿAmārna to the west and north.[135] (Fig. 68)

At the beginning of the 20th century (1911–1914), L. Woolley carried out excavations at Carchemish and was able to prove that this site was very rich in metals during the Early Bronze Age; he also informed us about the existence of burial remains at Tell al- ʿAmārna. An archaeological mission of the University of Liège, directed by Professor *Önhan Tunca*, has carried out eight excavation campaigns at Tell al- ʿAmārna between 1991 and 1998 as part of the rescue program for the construction of the new Tishrīn Dam on the Euphrates.[136] (Fig. 69)

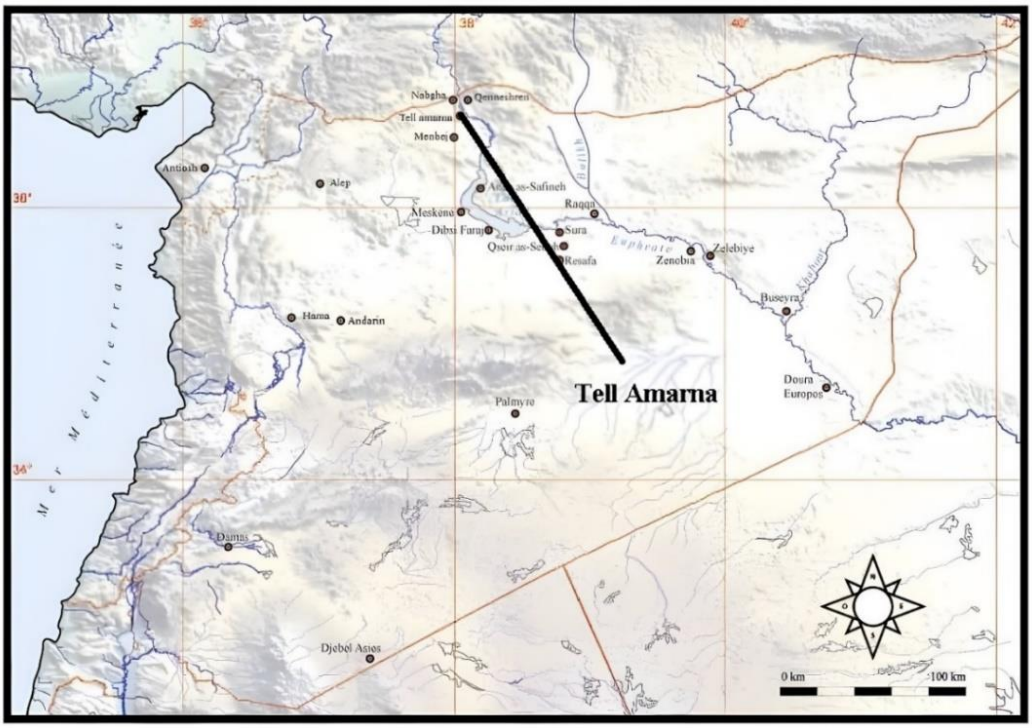


Fig. 68. Map of Syria locating Tell al-ʿAmārna and other Archaeological sites. (Balty, J. 2008: 54).

[135] Waliszewski, T., & Chmielewski, K 2001: 347.

[136] Cruells, W 1998: 18.

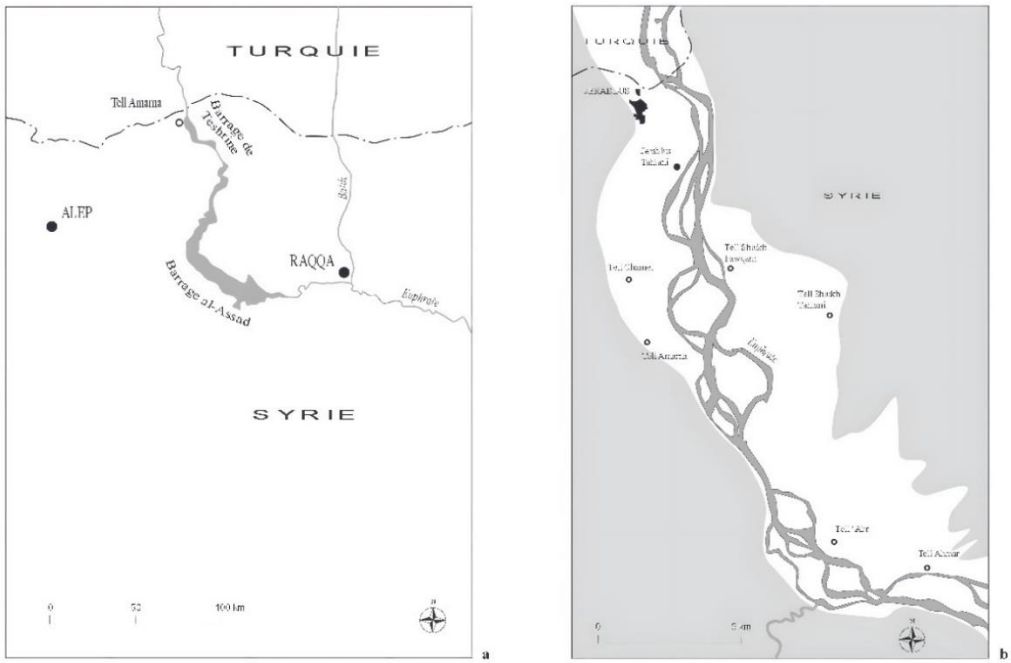


Fig. 69. a) Partial map of Syria. b) Map of the Euphrates Valley (before the construction of the dam) with Tell ʿAmārna and the main neigh boring sites. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 7).

The site appears to have grown to its highest size during the Roman-Byzantine era. The ruins of a Byzantine quarter have been found in site N, at the base of the hill to the east, resting on simple Roman homes that, however, are in extremely poor condition due to surface pits. In addition to the hill and its immediate surroundings, shards from this era were also found on the plateau's southern slopes and even farther away.[137] (Fig. 70)

[137] Toma, M 2002-2003: 120.



Fig. 70. General View of Tell al-ʿAmārna in 2000 from the south, where the ruins of the Byzantine church are situated. (Waliszewski, T., & Chmielewski, K. 2001: 348).

The Byzantine church ruins may be found in Site O, which is on the Wādī al-ʿAmārna and is about 700 meters south of the main mound and southeast of the contemporary village. On a natural mound, there are the remains of the excavation. This is a portion of the plateau that forms the southern boundary of the valley in which the Euphrates runs; its peak has a fifty-meter view of the valley, and its northern slope gently slopes into the Euphrates bed approximately a kilometer away from the dam before the water begins to rise. A large part of the area on the top of the hill was occupied by an orchard of pistachio and olive trees.[138]

Excavation of Site O in 1998

The 8th campaign in 1998 was to be the last for the team from the University of Liège, as rescue operations in the region were to come to an end with the filling of the Tishrīn dam. During the surveys around the mound, *tesserae* stones were found in the southeast corner of the new village. To figure out the nature of the remains to which the *tesserae* belonged, they opened a sondage among the trees of the orchard at the top of the hill in April. Work begun

[138] Tunca, Ö., Waliszewski, T. & Koniordos, V 2011: 1.

by a Belgian expedition in 1998 led to the discovery of a 5th-century Byzantine church decorated with polychrome mosaics immediately below the topsoil at a depth of 30–40 cm, most of which has been preserved despite the damage caused by plowing. This led to the involvement of *Tomasz Waliszewski*, a researcher specializing in Byzantine archeology from the University of Warsaw, who undertook the excavation, restoration, and conservation of the mosaic pavement. At the end of the campaign, on May 20, 1998, all the preserved structures and mosaics were cleared and lifted.[139] The pavements are in the National Museum of Aleppo and in the National Museum of Damascus.

Church (Basilica) Layout

The walls of this structure are built on rocks. The foundation is made of hewn limestone blocks, while the walls are made of flat bricks, of which imprints are preserved in the mortar on the stones in many places. The church has a basilica layout. The main entrance was probably on the west side of the building, which had been lost. About two-thirds of the nave and the side aisles could be watched. The side aisles and the naves were separated by two rows of pillars made of flat bricks. The eastern end of the church was divided into three parts: the apse and two rectangular side rooms. The presbytery and the side rooms are about 0.35-0.55 m above the floor of the nave of the church. The mosaics in the nave and side aisles were executed in the technique of *opus tesselatum* with stone *tesserae* of 1 cm edge length. Geometric motifs formed rectangular panels that emphasized the internal division of the church. Some of the motifs used for decoration are considered unique to the region.[140]

Dating of the Basilica: Discoveries for Dating Purposes.

According to *Tunca et al* (2011) the few datable sherds of pottery found in the deposits that covered the building date between the Late Roman and Proto-Islamic periods. The late sealed fragments are dated to the second half of the 5th and 6th centuries. Two mosaic pavements were detected in the stratigraphy.

1. The layer that separated the two mosaic pavements in the apse held some fragments of tiles and pottery whose dates are between the 4th and 5th centuries.

[139] Ibid., 2-3.

[140] Toma, M 2002-2003: 116.

2. The bronze coins of *Honorius de Constantinople* (395–408 AD) were discovered in the preparation layer of the Late Phase mosaics in the south nave.

3. The oldest phase mosaic can be dated to the end of the 4th or the beginning of the 5th century, while the second phase mosaic (the latest) could be dated to the first half of the 5th century according to the bronze coins, and this dating is also suggested by the iconographic analysis of this stylistically very homogeneous group.[141] (Fig. 71, Fig. 72, Fig. 73)

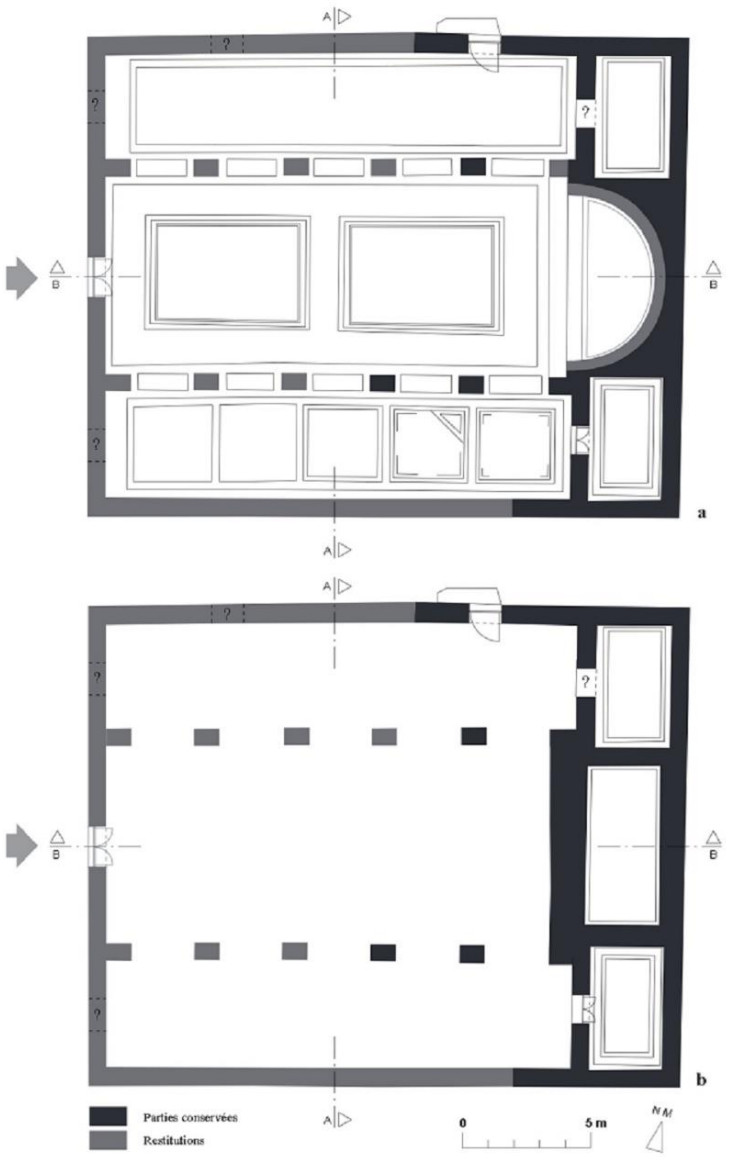


Fig. 71 a) Reconstitution of the Basilica plan of Phase II. b) Reconstitution of the Basilica plan in Phase I. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 46).

[141] Tunca, Ö., Waliszewski, T. & Koniordos, V 2011: 22.

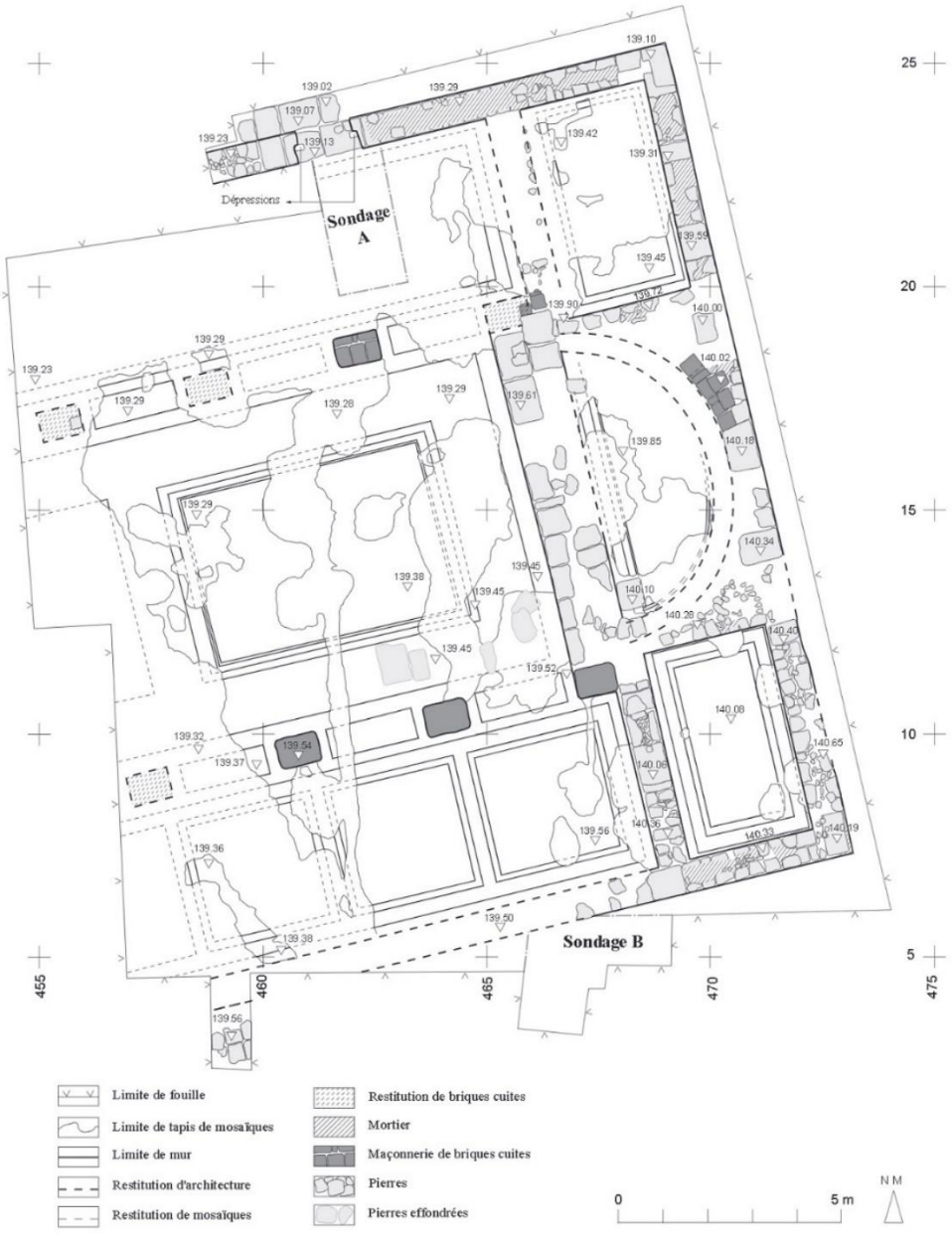


Fig. 72 The remains of Phase II of the basilica with the location of sondages A and B. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 35).



Fig. 73. The remains of Phase I of the basilica. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 36).

Mosaic Pavements of the Basilica

In the preserved section of the building in the east, about 104 square meters of mosaics were discovered. Considering possible theoretical reconstruction of the church, the mosaic pavement should cover about 361 square meters. The state of the discovered mosaic pavement was quite different: there were sections that were almost completely preserved and sections badly damaged by agricultural works. Most of the mosaics of the ancient phase, the mosaics of the apse and the mosaics of the "*Sacristies*" (the two side rooms of the apse) were executed according to the *opus tesselatum* method. The composition of the decorations in the apse is geometrical and organized around a cross, and the horizontal bar of this cross was hidden behind a partially preserved five-line Greek inscription.

In the northern sacristy, the mosaic pavement has been preserved in the southern part. The central scene was surrounded by a frame so that the two sections were separated by a strip of white *tesserae*. The frame of the mosaic pavement consists of an ivy branch on a yellow or white background. The central scene has a rhombus-shaped structure of closely spaced monochrome scale motifs, each bearing a rosebud on a white background.

In the southern sacristy, the mosaic pavement has been almost completely preserved. The frame of the mosaic pavement consists of a pair of sinusoidal curves in the form of a mesh with straight edges. A band of white *tesserae* separates the frame from the central scene. The central scene is filled with an orthogonal arrangement of closely spaced octagons defining squares, making a total of 55 octagons arranged in 5 rows, each row containing 11 octagons.[142]

The mosaic pavement of the first modern stage was prepared in the wings according to the technique of *opus tesselatum*, and in the apse, the old mosaic pavement was covered with another later mosaic pavement. The mosaic pavement is a frame consisting of a series of three-part cups upside down. The central scene is a diagonal structure of tangential circles and squares.

Only a small part of the mosaics in the north nave, about 1.40 x 2.75 m^2, is preserved in the southeast corner, while parts of the frame are preserved on the south side. The frame consists of matching motifs and a white band separating the central scene. The central scene

[142] Ibid., 52.

is an orthogonal formation of interlocking circles, of which only a small part of the decoration at the western end is preserved. In the spaces between the columns on the north side, only two mosaic pavements are preserved, standing for a decoration that imitates diagonal lines in veined marble. The mosaic of the spaces between the northeastern columns was a composition of white and gray checkerboard squares arranged diagonally.

The central nave has a large geometric shape surrounded by a frame separated from the columns and the spaces between them by a wide band of about 34–38 cm made of white *tesserae*. The frame had vertical square motifs of squamosal on a white background. Each squamosal had a rosebud. The stem of each rose was a green rosette, while the flower was a rosette made of white, pink, and reddish-brown *tesserae*. A white band, 16 cm wide, separated the frame from the central scene. The central scene was surrounded by a rectangular frame that was 4.10 m wide and 5.96 m long. It had decorations in the form of square spindles and circles around the squares against a white background. In addition, a series of small crosses separated the mosaics of the central transept in the east from the steps of the church choir. In the western part of the central transept, another rectangular corner was found, similar to the one in the eastern part.

The mosaic of the space between the southeastern columns consists of a rectangle filled with a checkerboard arrangement of white, gray, and black squares arranged diagonally. Of the twelve white squares in the space between the central columns, only eight are preserved, and the rectangle has been filled with a formation of diagonally arranged checkerboard squares. The motifs of this mosaic are identical to those of the space between the northeastern columns. The motifs of the space between the south-north columns, which are partially preserved, are also identical to the motifs of the space between the northwest columns and imitate the oblique veins of the marble.[143]

A complete mosaic pavement was discovered in the eastern part of the southern transept. The mosaic pavement is divided into square sections surrounded by geometric frames. The general frame is formed by a series of blocks that appear from a three-dimensional perspective. The central scene is divided into squares with shaped decorations such as circles, squares, or triangles. In the eastern square, there is a circle with a diameter of 2.68 m, whose dimensions reach 2.77 x 2.75 m, filled with a formation of four spindles

[143] Ibid., 53.

around another circle tangentially intertwined in two patterns. On the second square to the west is a smaller square that occupies the center of the large square, and the 64 circles form an orthogonal formation filled with red concave squares. The third square to the west has been damaged but can be partially reconfigured. We find a circle inside a square that encloses large and small circles intertwined in two patterns, while the outer ring has a wavy band decoration. In the corners left by the rings in the square, we find four concave triangles.[144] (Fig. 74, Fig. 75, Fig. 76, Fig. 77)



Fig. 74. General view of the basilica and Phase II mosaics. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 79).

[144] Ibid., 55.

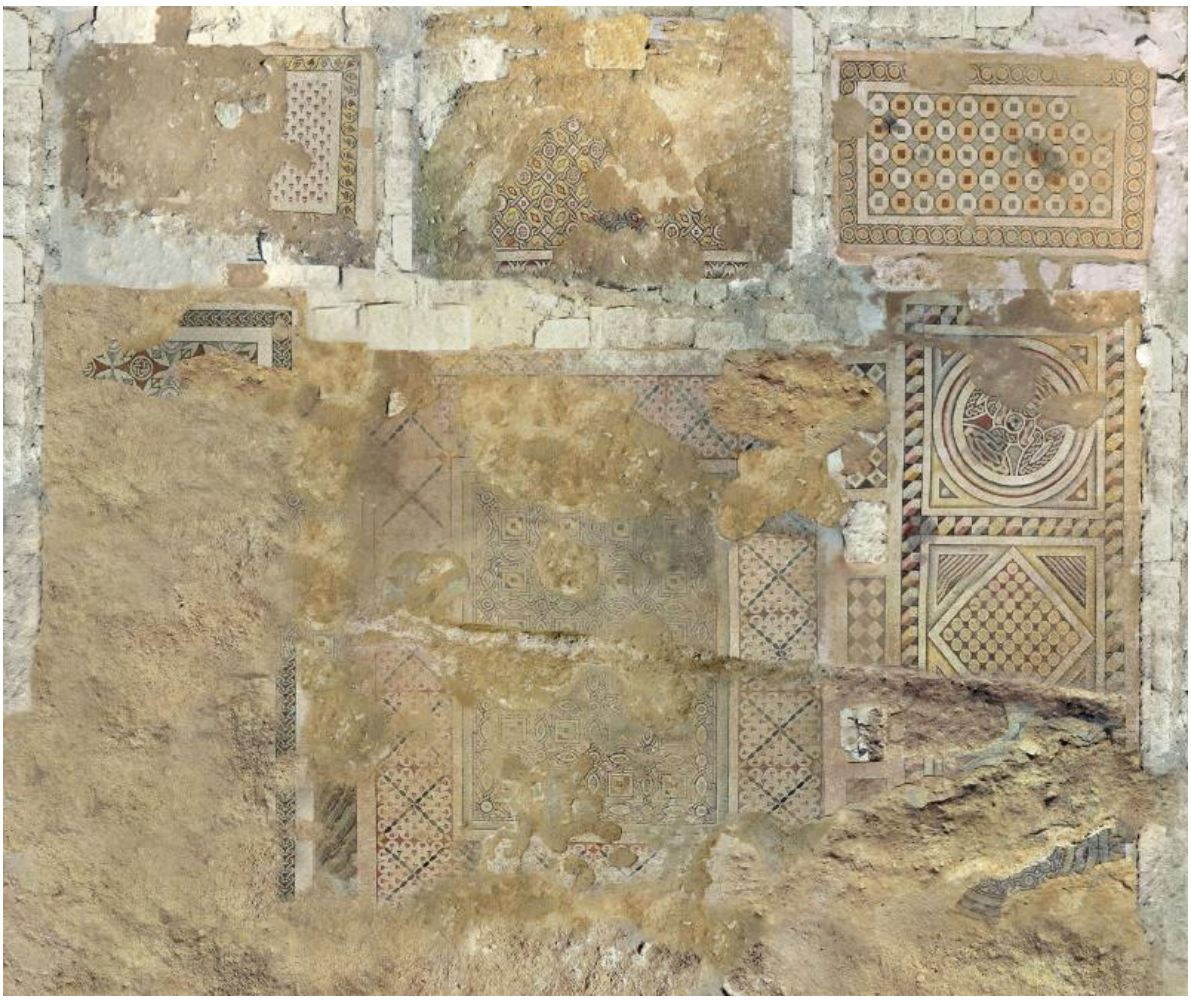


Fig. 75. Reconstructed view of the west mosaic decoration from the basilica in Tell al-ʿAmārna dated to the first half of the fifth century AD. "Phase II mosaics". (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 80).

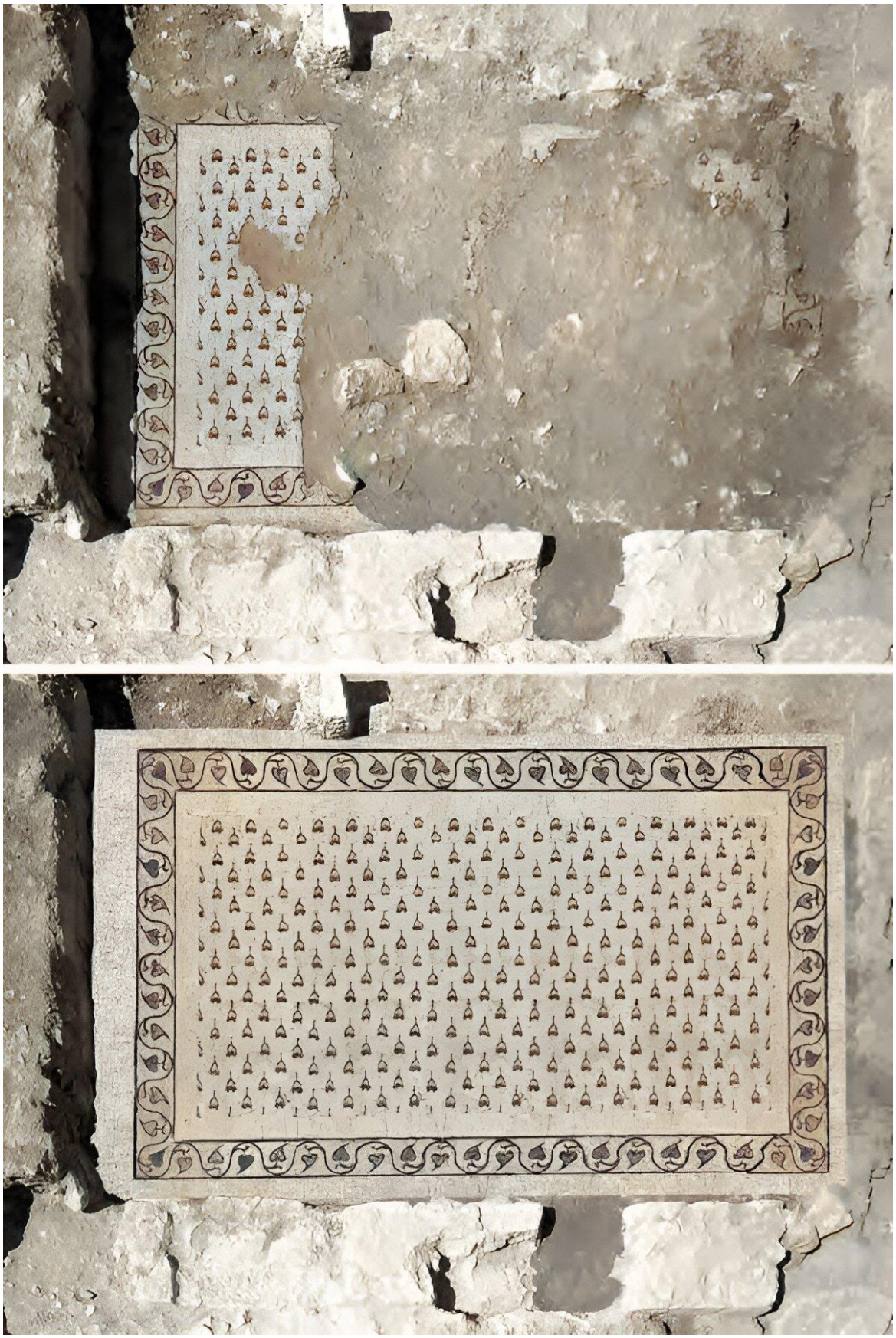


Fig. 76. Plan view of the mosaics of the northern pastophorion: state of the discovery and restitution. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 81).

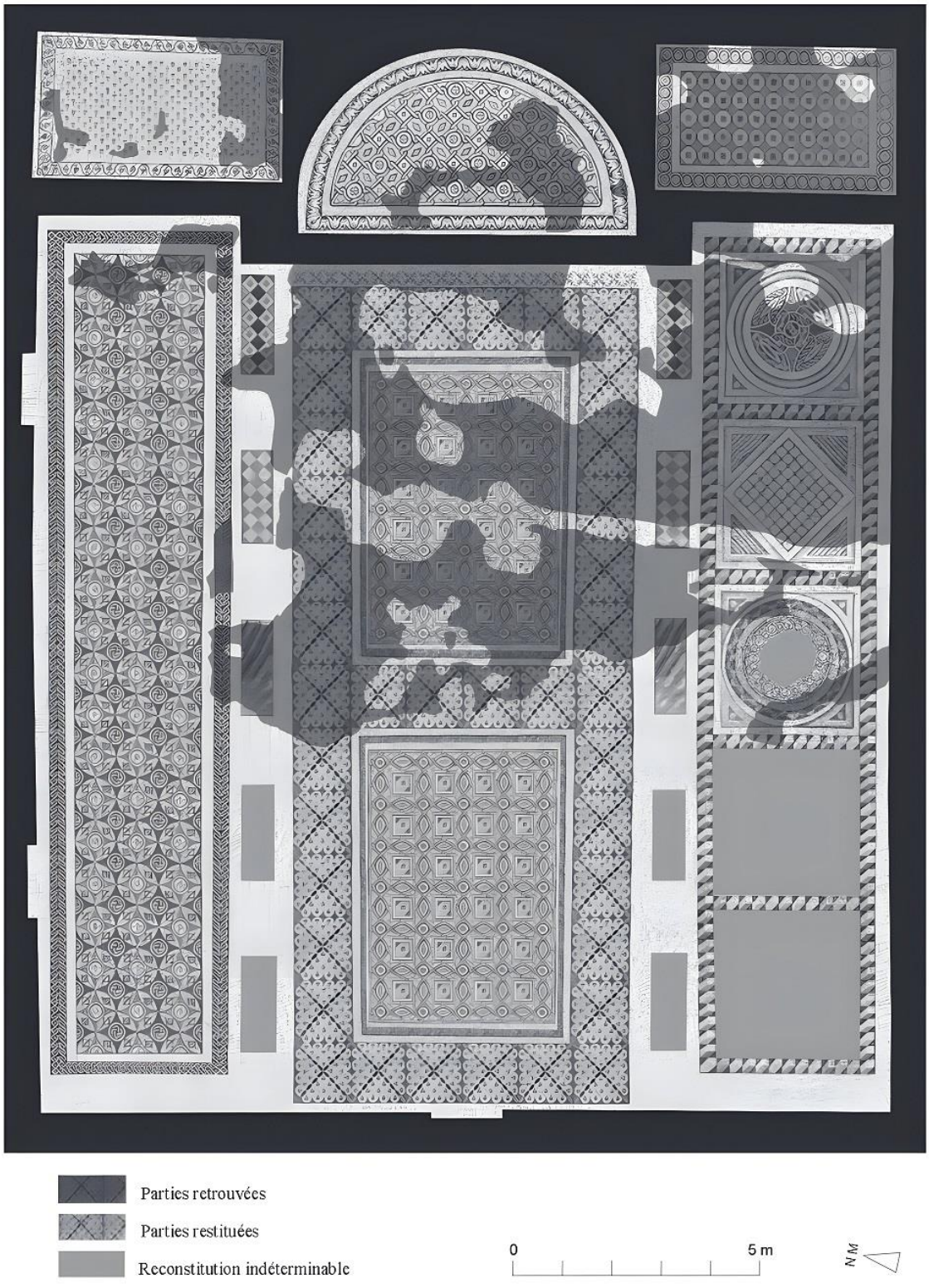


Fig. 77. Overall reconstruction of the mosaic pavement. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 100).

Elements of Mosaic Dating

According to Önhan Tunca, it is evident from these clues that nearly all the motifs found in the mosaics of Tell al-ʿAmārna closely resemble, if not precisely match, examples dating approximately from the latter half of the 4th to the late 5th centuries AD, with a notable concentration between the end of the 4th and the middle of the 5th centuries. Therefore, the execution of the mosaics of both phases of Tell al-ʿAmārna must be placed within this chronological range. The mosaics of Phase I (oldest) likely date back to the end of the 4th or the beginning of the 5th century, while those of Phase II (latest), according to the bronze coin and iconographic analysis, can be attributed to the first half of the 5th century AD.[145]

Inscriptions: A tentative interpretation of the inscriptions

The geometric mosaic of the apse of the proto-Byzantine church of Tell al-ʿAmārna belongs to the early phase of construction (phase I), dating to the end of the 4th or the beginning of the 5th century. In the northern half of the apse, found to the east of the basilica building, two Greek inscriptions have been preserved. The inscriptions are read facing east; the writing is in a square, and the letters, about 10 cm high, are black against a white background. They gave a simple reading of the two preserved short inscriptions and then proposed hypotheses for understanding and restoration according to the two possible variants with four or six inscribed pavements.[146]

ΙχΝΙΑΙ / ΡΑΝΙΑΙ
ΣωΝ
ΑΣ hedera
c) [Ὑπὲρ σ] ωτηρίας
[τῶν σῶ] ν
which was to continue, in d):
[δούλων - - -]
[- - -].

[145] Ibid., 67.

[146] Gatier P.-L., 2005: 121.

A first hypothesis, consistent with the first reconstruction, would allow us to read four mosaic pavements (a, b, c, and d) in the correct order. We can recover only one formula: "For the salvation of your servants...", which should precede the names of the donors:

c) [Ὑπὲρ σ] ωτηρίας
a) [τῶν δούλω] ν
σῶν

The sequence should then be at *b,* perhaps just in the middle line, then at *d,* and include the names of the donors. It stays to integrate lines 1 and 3 of a. It is hardly possible to restore a missing line in the inscription a. One can read lines by connecting lines 1 and 3 - ΙΧΝΙΑΙΑΣ. It should be considered Ἰχνιαίας as a personal name in the feminine genitive case. The text thus rewritten would be translated, "*For the salvation of your servants, Ichniaia*...". It would extend to the right, along with the names of other people. The main obstacle to this reinterpretation, besides the unusual character of the text's division, is the lack of evidence for the anthroponym *Ichniaia*, although it seems very Hellenic. An ethnonym in the feminine genitive (Ἰχνιαίας), which would be exceedingly difficult to imagine.

The second reconstruction of the pavement with six pavements would lead to a clear separation of the two parts of the text: *aa*, then *a*, then *b*, then *bb*, on the one hand, and *c*, then *d,* on the other. This third hypothesis can only make sense if we consider that the text of line 1 of *aa* is continued by line 1 of *a*, then by line 1 of *b*, and so on, and the same is true for the following lines.

In the first line of the extant text, two places with the name *Ichnai* Ἴχναι. One is a city in Thessaly, the other a Macedonian foundation in the east, as reported by *Isidore of Charax*, who places it in the valley of Balīkh on the road from the Euphrates to *Apamea* near *Nicephorion*. This Syro-Mesopotamian agglomeration is mentioned in the accounts of the defeat of Crassus in the battle of *Carrhes*, a town not far from *Ichnai*. The exact identification of the site of *Ichnai* is problematic, but since it is found in Isidore, the last stage before Nicephorion, today's Raqqa, its approximate location north of the city is certain. *Ichnai* is also not extremely far from Tell al-ʿAmārna, but in early Byzantine times, tell

ʿAmārna must have belonged to the territory of Europos in Euphrasia and *Ichnai* to that of *Nicephorion* or *Callinicum* in Osrhoene.[147]

For the first line of the compartment alone, there stays the possibility of a reading ṖĄṆIAI and the return of a feminine anthroponym [Οὐ]ρανία. If the intersection of words is regular, a dative Οὐρανίᾳ is difficult to put into a coherent form, and an iota adscript seems unlikely at this point. In this case, one would have to consider a nominative followed by an iota belonging to the beginning of another word. In addition, one might suggest a formula for line 2 that would begin on the left, in the aa compartment, and would be quite proper to the location of the inscription, the sanctuary of the church (i.e., the choir or presbytery). As an example, I suggest [τῶν] σῶν [σοί ---]. It would be part of a form well attested in Christian epigraphy, with several variations, meaning "*These offerings are yours, Lord,"* or "*What is offered to you is yours*."[148] (Fig. 78)



Fig. 78. Tell al-ʿAmārna: Greek inscription on the mosaic of Phase I in the apse. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 128).

[147] Ibid., 121.

[148] Tunca, Ö., Waliszewski, T. & Koniordos, V 2011: 167.

The Iconography of the Mosaic Pavement

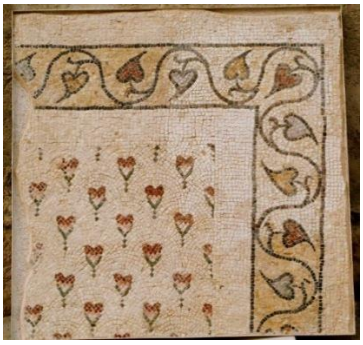
The Basilica of Tell al-ʿAmārna in Syria serves as a model for pre-Byzantine mosaics, showcasing the flourishing of this art in the region during late antiquity. The site is situated on the Euphrates River in an area that was part of the province of *Augusta Euphratensis*, established between 330 and 350 AD. The provincial capital, *Hierapolis*, also became an episcopal capital. Despite its poor state of preservation, the decorative themes are still visible and easily recognizable. A stylistic comparison of the mosaics from the two periods reveals differences; in the first period, the decorations are more elaborate and exhibit more pronounced color contrasts. In the apse, frame motifs were widespread in fifth- and sixth-century mosaics in the eastern basin of the Mediterranean, especially in Antioch, Palestine, Arabia province, and Cyprus, but were rare in North Africa. The figuration used in Tell al-ʿAmārna Basilica shows distinct variations from similar subjects in Antioch and *Apamea*. The motifs found in the northern sacristy were widely employed by Syrian craftsmen in the fifth century, with other examples found in Antioch, *Apamea*, and other sites in Syria. In the southern sacristy, the motif of decoration with connected octagons appears commonly elsewhere as well, but the arrangement used at ʿAmārna shows distinct idiosyncrasies and is not quite identical to the well-known examples in Antioch and *Apamea*. The themes for the decoration of the main nave were found elsewhere in Syria, Lebanon, Cyprus, the Arab provinces, and Palestine until the first half of the seventh century. (Fig. 79)

In conclusion, the similarities to the mosaics of the Eastern Roman Empire clearly indicate that the later mosaics of the Tell al-ʿAmārna Basilica must date from the first half of the fifth century.[149]

[149] Ibid., 110.



A



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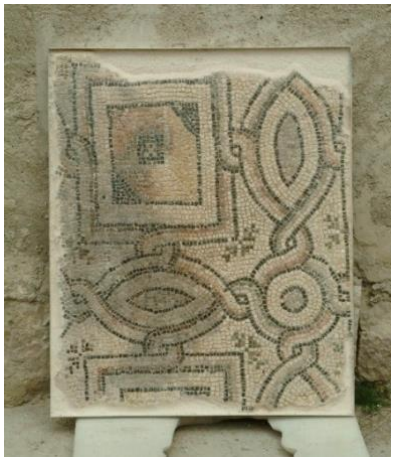


E



F



G

Fig. 79. A) Surviving mosaic in the south pastophorion. B) Detail of the mosaic in the north pastophorion. C)The motif of a circle chain encompassing the main field of the mosaic which adorned the floor of the sacristy. D) The motif of cuboids shown in perspective is used in the decoration of the mosaic border in the southern aisle. E) Details of the mosaic from the nave. F) Surviving mosaic in the north aisle. G) Ivy leaves on a yellow background of the mosaic border in the northern pastophorium. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 133 -136 - 138 - 147 - 148).

Technical Aspects of Mosaics Execution: A Comprehensive Analysis

Most of the evidence left on Roman or pre-Byzantine mosaics shows that the work was conducted by a team, and this is probably true of the mosaics at Tell al-ʿAmārna. Under the first mosaic pavements in the apse and in the two sacristy rooms, there were preparatory layers consisting of mortar, a few centimeters thick applied on a layer of soil lying directly on the rock. Before applying the mosaic pavement in the first phase, a suitable layer had to be prepared, and the approved substrates vary from place to place. In the apse of the church, a layer of large stones about 10 cm thick was laid on the mosaics of the earlier phase. Then it was covered with a layer of red earth, followed by a mixture of small pebbles and lime mortar. The apse became ready for the new mosaic paving.[150]

In the wings of the church, the new mortar was poured on the floor mortar of the early phase, in a thickness of 2 to 3 cm, before the *tesserae* were placed. As a basis for the mortar of the first stage, quicklime was used, which is extremely hard and of excellent quality. The *tesserae* used for the first and second stages are with an average size of 1 cm. These dimensions are typical of *opus tesselatum* in pre-Byzantine Syria. The colors include 13: white, grey, bluish-grey, blue, dark blue, pink, reddish-brown, yellow, orange, black, green, dark green, and blue green. The stones were probably brought in the form of rods and were cut in the mosaic workshop as needed for the *tesserae*. (Fig. 80)



Fig. 80. Tell al-ʿAmārna: a) View of the east wall of sondage A. (b) Survey of the east wall of sondage A. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 37).

[150] Waliszewski, T., & Chmielewski, K 2001: 347.

The mosaic pavements preserved in the basilica occupy a total area of about 120 m^2. Each pavement consists of four technical layers. An uneven layer of stones of varied sizes is laid directly on the ground and fixed with a first layer of lime-sand mortar. A second layer of white lime-sand mortar, a few centimeters thick, was poured on top of this first layer, and the *tesserae* of assorted colors made of natural stone were placed in this layer (about 1 cm to the side). (Fig. 81, Fig. 82)

Preservation and Restoration of Mosaic Pavements



Fig. 81. Floor mosaics from the southern aisle of the church after repeated cleaning in 2000. (Photo by T. Waliszewski: 2011).



Fig. 82. Tell al-ʿAmārna: Placing the protective layer (facing) on the surface of the mosaics. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 182).

The pavements are irreparably damaged, with large, irregular losses of *tesserae* that often make it difficult to reconstruct the original geometric composition. However, the overall level is fairly uniform. There is a westward slope in the side aisles, probably due to the ground sank downward. A narrow, regular strip of lost *tesserae* several meters long must be the result of plowing. (Fig. 83)

Despite the loss of *tesserae*, the preserved pavements showed good cohesion between the four technological layers. A hard mortar, both the lower and the upper, preserved its internal cohesion and connection with the substructure and the *tesserae*. The surface was heavily soiled and covered in some places with the remains of a secondary layer.[151] (Fig. 84, Fig. 85)



Fig. 83. Tell al-ʿAmārna: General view after gluing the facing to the surface of the mosaics. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 182).

[151] Ibid., 350.



Fig. 84. Tell al-ʿAmārna: Removal of mosaic panels after cutting. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 183).



Fig. 85. Conservators roll up the mosaic floor from the nave. (Waliszewski, T., & Chmielewski, K. 2001: 354).

The mosaic pavements were found on private property land, in a grove of walnut trees, unprotected and difficult to secure; the only way to protect and preserve them was to lift them and remount them on a new substructure for display in the museum. In the 2000 season, all preserved mosaic pavements were lifted and stored after proper protective measures. The mosaics were first photographed and drawn and then divided into over forty larger and smaller pieces to be lifted one by one. The boundaries of the individual pieces were figured out both by the arbitrary edges of the missing parts and by the original geometric motifs in conjunction with the technical possibilities. After cleaning the mosaic surface, two layers of gauze and a thin linen fabric were glued to the mosaics with polyvinyl alcohol (PVA), a water-soluble synthetic polymer. Then the pavements were divided into pieces, and the *tesserae* were removed from the junctions. After the pieces were separated from their bases, they were placed on wooden boards and turned over to remove the mortar from the underside. This was done to reduce the weight of each piece and increase their cohesion. Then the mosaic pieces were packed in foam layers and taken to a storage room. (Fig. 86)

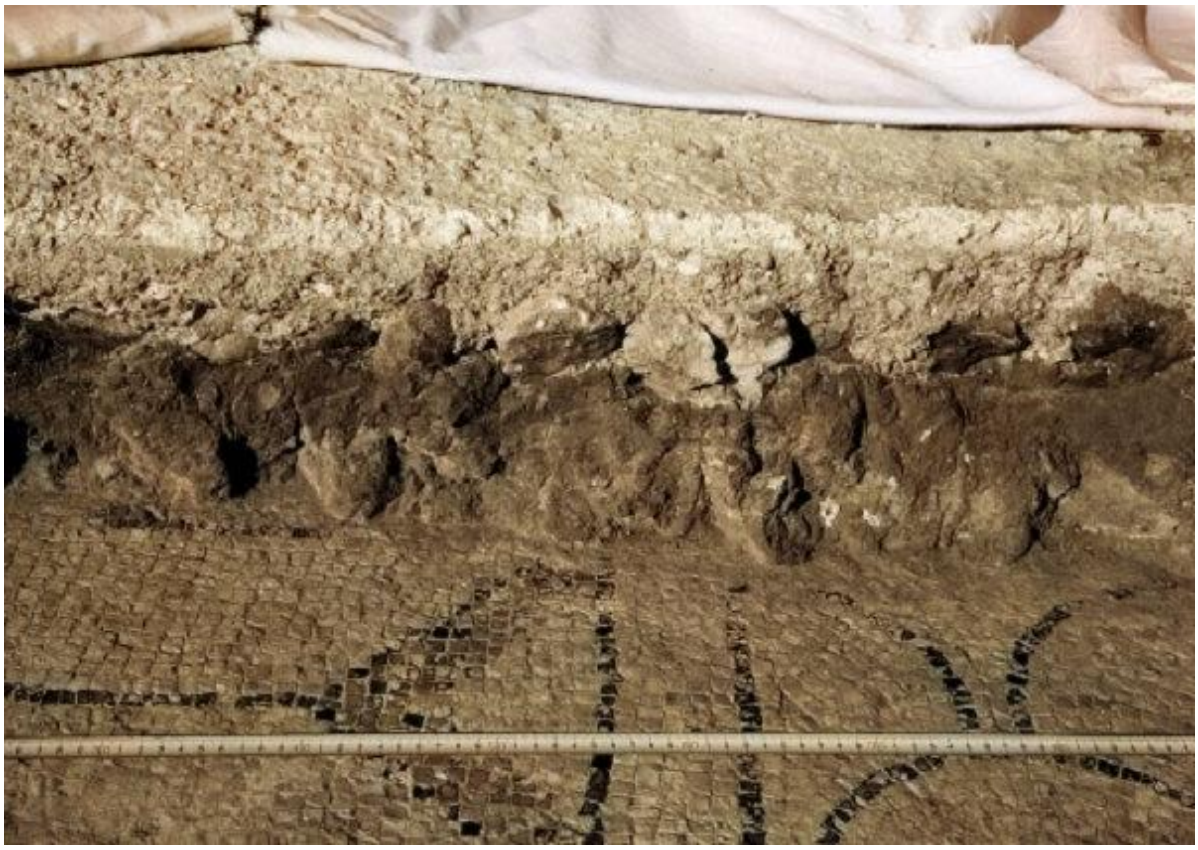


Fig. 86. Tell al-ʿAmārna: Two levels of mosaic floors in the central apse of the basilica. (Waliszewski, T., & Chmielewski, K. 2001: 355).

After the mosaics were brought to Damascus between 2004 and 2005, 13 mosaics with limited dimensions that could be easily transported were restored to be presented in a traveling exhibition. An emulsion having 10% acrylic emulsion (Primal AC33) was injected where the original mortar had cracked. All the edges of the pieces were then reinforced with new strips of lime-sand mortar. In the end, it was the mortar with 15% of the above-mentioned additive, reinforced on the inside with a grid, which supported the proper hardness. Sheets of 1 cm thick polystyrene (PS) foam, forming a transition layer, were glued in 17 x 20 cm pieces directly to the new mortar with a mixture of one-part polyvinyl acetate emulsion. Finally, aluminum sheets embossed from the inside were applied to form a new frame. To complete the restoration, the mosaic pavements were placed in an aluminum frame and cleaned. (Fig. 87)

Analytical Study of Mortar Samples and Mosaic Tesserae for Pavements

1. The mortar of the second phase has the characteristics of hydrated lime.
2. The mortar of the first phase consists of lime with a small amount of secondary white mortar.
3. The *tesserae* were made of limestone of assorted colors depending on their provenance and composition.[152] (Fig. 88, Fig. 89)



Fig. 87. Tell al-ʿAmārna: Pouring the new mortar on the back of the mosaic panels. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 177).

[152] Ibid., 352.



Fig. 88. Cleaning of the mosaic stuck onto a new foundation. (Photo by Tomasz Myjak)

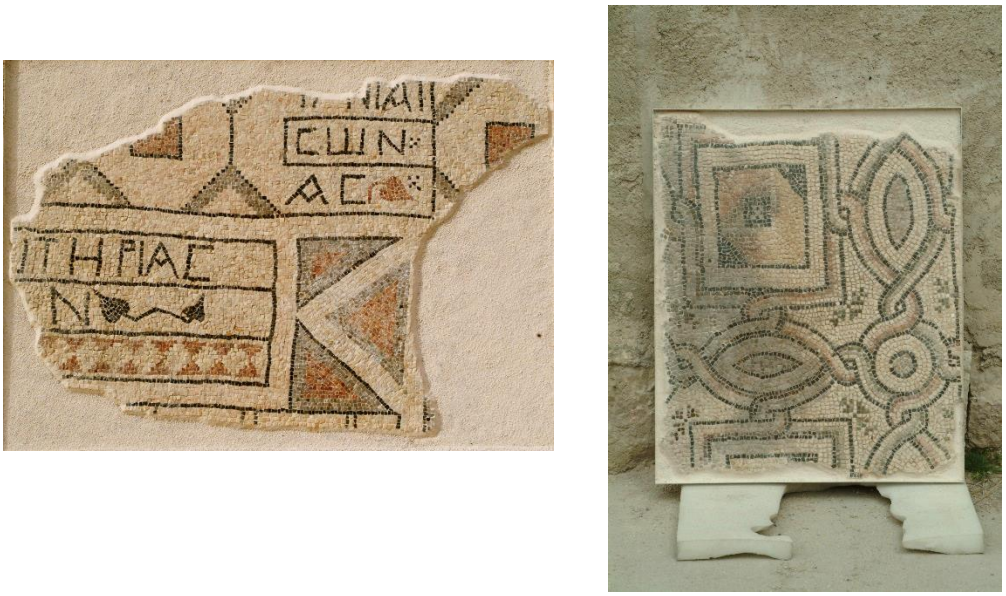


Fig. 89. Tell al-ʿAmārna: Finishing a mosaic pavement on its new support. (Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 177).

III. MOSAIC PAVEMENT OF QINNASRIN MONASTERY (DEIR QINNSRĪN)



Fig. 90. A general view of the Qinnasrin Monastery site. (Fakhro, M. 2016: 404).

Geographical and Historical Overview

Located on the eastern (left) bank of the Euphrates River, in close proximity to the Syrian Turkish border, al-Nāqūṭa (Qinnasrin Monastery - Deir Qinnsrīn) is situated north of Shuyūkh Fawqānī (formerly known as Būrmārīna) and approximately 6 km south of the settlement of Zūr Maghār. It also lies across from Jarabulus (formerly known as Carchemish). The name "al-Nāqūṭa" was derived from the presence of a freshwater spring that cascades down the hills, creating a waterfall during the summer months. The local inhabitants referred to the location as *"Khirbat Al-Naṣṣāra,"* which translates to "*the area of the Christians*." (Fig. 91)

During the winter of 2005–2006, the National Archaeological Mission of the Directorate of Antiquities and Museums of Aleppo conducted excavations at this site, leading to the discovery of a significant portion of the monastery. Within the remains, traces of Ayyubid and Mamluk infrastructure and constructions were found, including walls,

earthenware drinking water pipes, and a sewage disposal drainage channel. These discoveries emerged from several test squares (sondages) that were excavated at the site.[153] (Fig. 92)

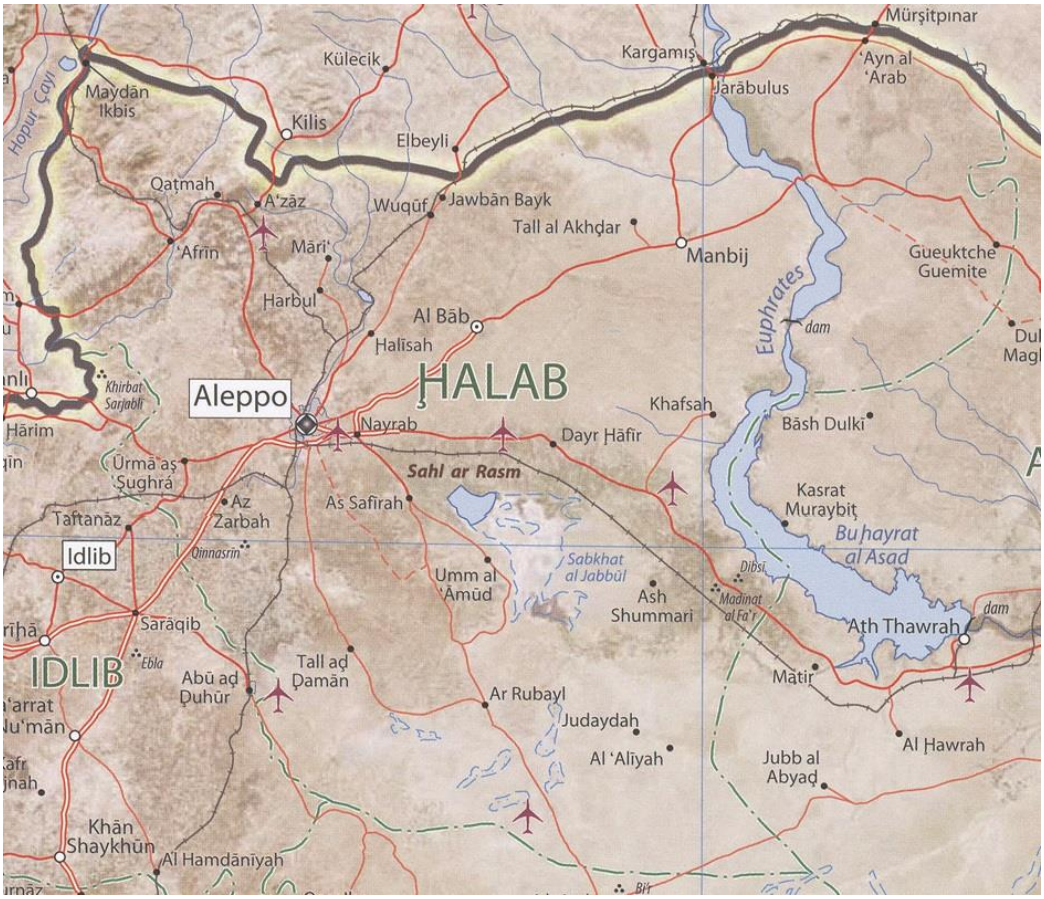


Fig. 91. Aleppo governorate map. (https://rb.gy/om78k).



Fig. 92. The remains of the Islamic structures. (Fakhro, M. 2016: 405).

[153] Fakhro, M 2016: 404.

During the early fourth century AD, the region encompassing Antioch (ʾAntākiya) to Edessa (now Urfa) witnessed the prevalence of Greek as the official language of the state, while Syriac served as the native tongue of the populace. This era witnessed a significant proliferation of churches, monasteries, and schools throughout Syria, reflecting the extensive evangelization efforts in the Middle Euphrates Basin region. (Fig. 93)

The sixth century AD emerged as the illustrious "*Golden age*" of Syriac, characterized by a remarkable upsurge in literary production and a profound advancement in scientific knowledge. This period saw the establishment of libraries housing thousands of manuscripts and books, encompassing various fields of arts, sciences, and other relevant disciplines. The profound scholarly and artistic achievements were exemplified by the proliferation of scientists, authors, and poets, as well as the expansion of educational institutions along the eastern borders of the country. This intellectual flourishing and the dissemination of knowledge played a pivotal role in shaping the cultural and intellectual landscape of the region during this epoch.[154]



Fig. 93. The discovered parts of the monastery (from the southwest corner: the rectangular hall). (Fakhro, M. 2016: 405).

[154] Ibid., 405.

The Syriac monasteries were renowned for their thriving educational institutions, which spread across the city of ʾAntākiya (Antioch) and its surroundings. Notable among these were the schools of Mār Pāssos Monastery, Taladah Monastery, Mount Edessa, Tur ʾAbdīn, Nusaybīn, Rʾas al-ʾAin, and others. Particularly prominent during the 6th century AD was the monastery of Qinnasrin (Deir Qinnsrīn), founded in 530 A.D by St. John Al-Rahawi, hailing from Edessa. It bore the epithet "*Monastery of John ibn Aftūniya*" in his honor and stood as one of the most significant and distinguished establishments within the Syriac Orthodox Church.

The term "Qinnasrin" derives from ancient Syriac, combining two words signifying "eagle's nest." This esteemed monastery was also known as Qaneshry Monastery. According to historical sources, Qinnasrin assumed substantial proportions, being comparable to Jarabulus (Carchemish). Its location lay four *farsakhs*[155] from Manbij and seven *farsakhs* from Surūj. Yāqūt al-Ḥamawī al-Rūmī mentions this site in his work " *Muʿjam al-buldān*," referencing the monastery of Qinnasrin situated on the Euphrates, east of al-Jazīra, along with the land of Muḍar, Jribas, and Jribas Shāmiya.[156]

The school established by John ibn ʾAftūniya, who passed away in 538, gained widespread renown and grew to become the most prominent Syriac theological school of its era. During its zenith, it boasted an enrollment of over 371 students and produced numerous distinguished patriarchs, scholars, and philosophers. Among its notable alumni were Sawira Sabochat (7th century AD), who is credited with imparting knowledge of Indian numerals to the Arabs; Thomas Aharqli, renowned for translating the New Testament from Greek into Syriac; and Mar Jacob Al Rahawi, esteemed as the author of the first Syriac lexicon.

Unfortunately, the monastery faced destruction in 810 at the hands of Naṣr ibn Shabath, who led an opposition against the Abbasid caliph El Maamoun. However, in 820, Patriarch Mar Dionysius, the first al-Talmahari patriarch of Antioch and a graduate of the monastic school of Qannsrīn, orchestrated the reconstruction of the institution. The school

[155] Ancient length measure in Persia. Also called *fars seng*, means “stone of Persia”, which Herodotus and the other Greek authors write as *parasanga. https://www.sizes.com/units/farsakh.htm (01.04.2024)*

[156] Dabty, Y 2007: 83.

continued to function until the mid-12th century, leaving behind a legacy of scholarly achievements and significant contributions to the Syriac intellectual tradition.

Qinnasrin Monastery held a paramount position as a vital center within the Jacobite Church, actively promoting the core principles of Christological unity. This esteemed institution garnered international renown as a distinguished university, revered for its comprehensive pedagogy encompassing theology, philosophy, astronomy, various languages, and a plethora of other arts known to the ancient civilizations along the Euphrates River in Syria. Furthermore, the monastery's architectural ensemble showcases a remarkable contrast in styles, attesting to its historical significance.[157]

Given the significance and complexity of the site, thorough archaeological endeavors are imperative to unearth and comprehensively study all its features. Particularly in light of the Syrian crisis, additional excavation campaigns become even more crucial to ensure a comprehensive exploration of the monastery and a thorough understanding of its cultural and historical heritage.

Architectural Description: A Comprehensive Study

The most important discovery at the site was the remains of a huge structure ornated with decorative stones. These were distributed in all sections and corners to reflect the importance of the building, and the religious purpose of the building seems clear from the basic layout of the structure. A rectangular hall (16.30 x 4.05 m) occupied the southern part of the structure, which was presumably used as a place of worship and gathering (perhaps a chapel). (Fig. 94) The floor was paved with mosaic pavement, executed in a precise and technical method. The main mosaic pavement was surrounded by decorative ribbon braids in a frame within two parallel lines found at the intersection of geometric symmetrical shapes (triangles, circles, etc.) that formed a cross of four equilateral triangles in assorted colors (black, white, red, and orange). This makes sense given that the religious structures of the Syriac period included an educational part. The remaining scenes, which merely featured scenes of geometric shapes in various portions of the hall, were damaged.

Next to the hall was a small room connected with a door in the northeast corner (perhaps a priest's room), a rectangular room with a width of 3.4 meters. However, the end

[157] Fakhro, M 2016: 406.

of the northern part of this room could not be precisely figured out due to the accumulation of enormous amounts of dust and debris. The floor was paved with rectangular pottery tiles, alternately 70 and 80 cm wide and 2.5 cm thick, apparently made with stencils. This room is connected to a large central hall divided into two open rooms by a slotted arch in the west wall of the room. Symmetrical stone shoulders clarify the 240 cm slot-arch, and on each wall was a small cabinet (39 x 39 cm). Both were covered with a stone arch decorated with bas-relief, and the end of the upper part of the room in the northeast corner has a decorated stone cornice with geometric motifs and several friezes.[158]

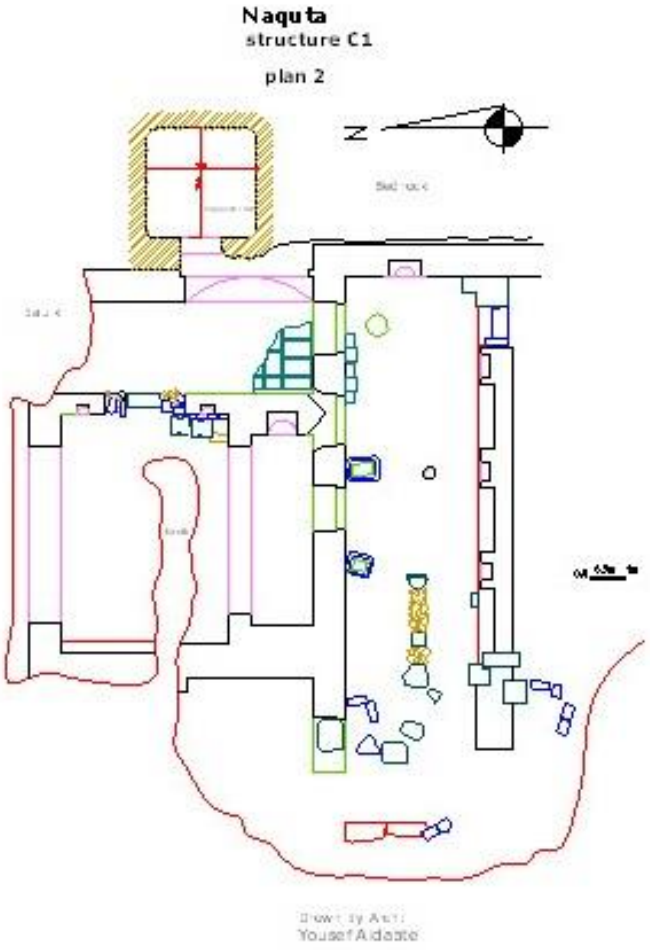


Fig. 94. Plan of the rectangular hall with attached sections "Excavations 2006". (Ḍabty, Y. 2007: 89).

[158] Dabty, Y 2007: 85.

The floor of the hall was paved with a layer of hard lime mixed with river sand and finished with a thin layer of mortar that had been colored orange before being laid. (Fig. 95) This structure may have originally been a part of the Syriac Qinnasrin Monastery (Deir Qannsrīn) in the sixth century AD. Additional structural components, such as columns, walls, etc., may have been repurposed for residential or other functions throughout the Islamic period (Ayyubids/Mamluks).[159]



A



B



C

Fig. 95. A hard lime-based layer paves the floor of the hall of white lime mortar and river sand and finished with a thin layer of mortar-colored orange. (Photos: Fakhro, M. 2006).

[159] Ibid., 86.

Study of Architectural Decorations

The building is characterized by the accuracy of the manufacturing of the stones, showing the importance, it enjoys, since many carved and decorated stones were found, showing the high artistic and decorative level contained in its various sections.

Decorative Stone Cornices:

- The first cornice is a corner cornice found in the upper part of the northeast corner of the central hall and consists of several layers. (Fig. 96, Fig. 97. Fig. 98)
- The second cornice is found above the corner of the southeast part of the central hall, above the wide wall cupboard.[160] (Fig. 99)



Fig. 96. A conical column capital of limestone decorated with relief floral motifs. (Dabty, Y. 2007: 93).



Fig. 97. Limestones decorated with relief floral motifs. (Dabty, Y. 2007: 93).



Fig. 98. A triangular stone with three lobes decorated with geometric decorations. (Dabty, Y. 2007: 93).

[160] Ibid., 87.

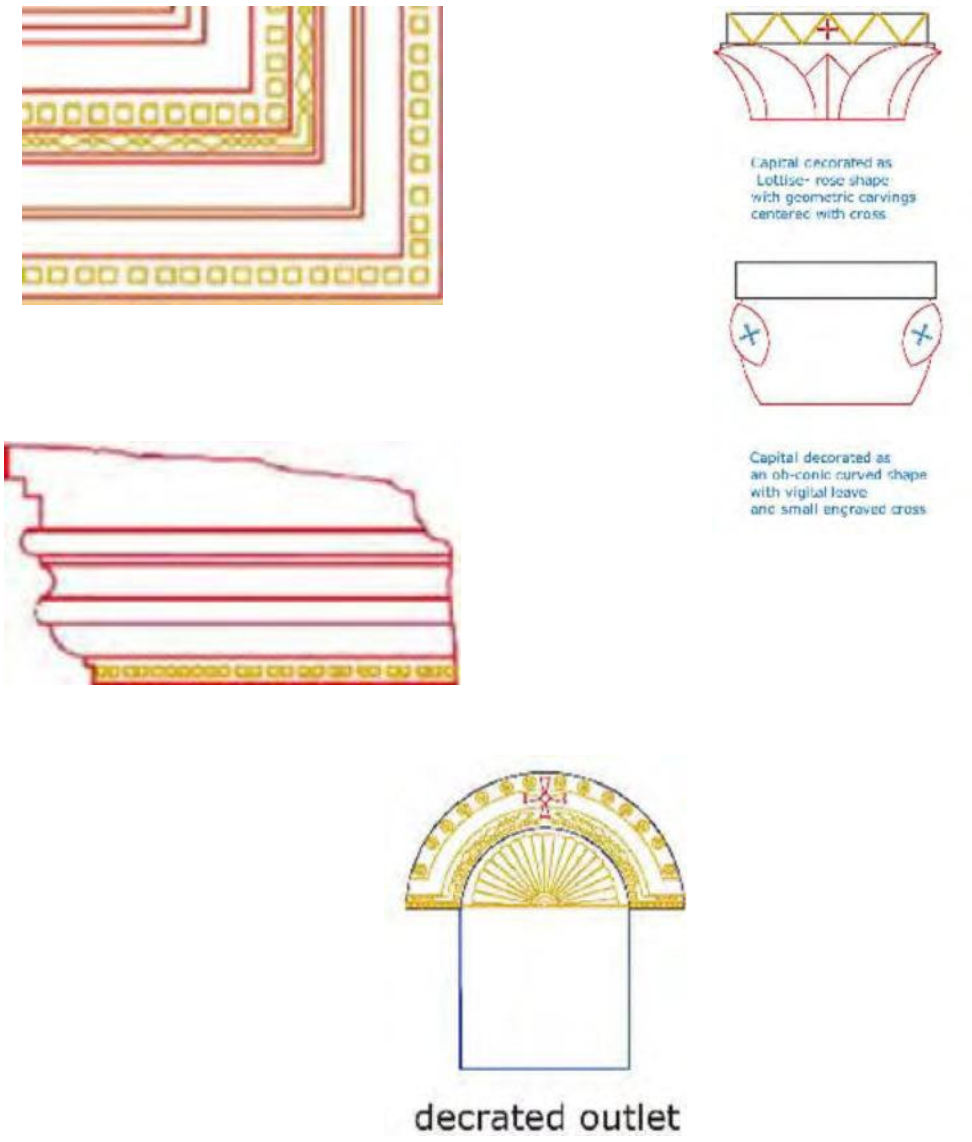


Fig. 99. Illustrations of stone cornices, column capitals, and a decorated wall window. (Ḍabty, Y. 2007: 94).

Mosaic Pavement: A Study in the Artistic Decoration of Floors

The mosaic pavement of the hall (C1 A) was divided into two sections:

First section: was lifted and brought to the Museum of Aleppo in 2000. The dimensions of this part of the mosaic pavement are about 6.8 x 4.2 meters, surrounded by a decorative braids frame arranged in two parallel lines. (Fig. 100) As for the interior scene, it was decorated with geometric shapes distributed in a regular and symmetrical way on both ends of the diagonal axis of the mosaic pavement, so that four circles were distributed in the center, followed by two semicircles at the ends of each of the four corners along the diagonal axis (southeast-northwest). (Fig. 101)



Fig. 100. Remaining parts of the mosaic pavement in the rectangular hall" Cl A". (Fakhro, M., & Dabty, Y 2006: 1-12).

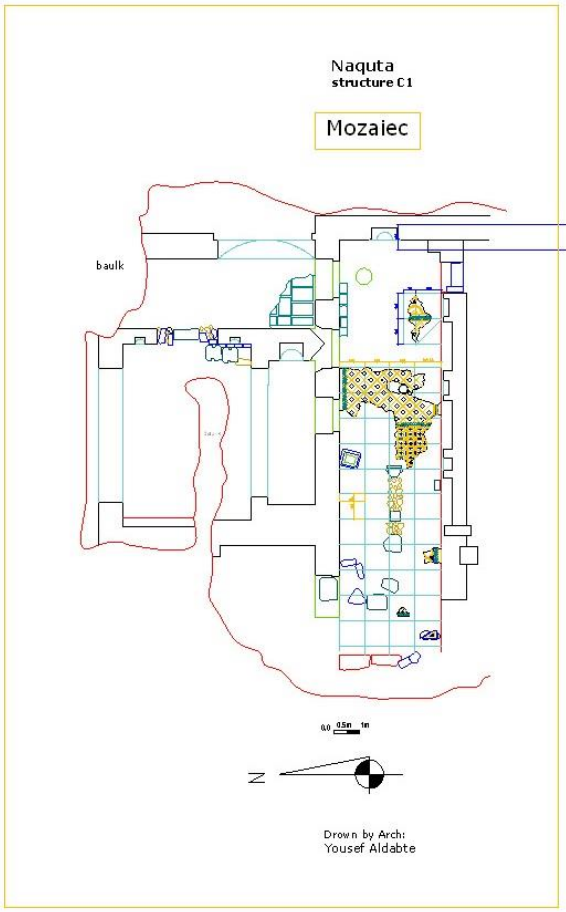


Fig. 101. Plan of the remaining parts of the mosaic pavement in the rectangular hall "Cl A". (Dabty, Y. 2007: 95).

The mosaic pavement has four elongated rhombuses, each rhombus had a small, elongated rhombus in its center. Each large rhombus is tied from both ends with a complete circle by a double knot. As for the circles, two opposite geometric shapes (Solomon's knot) and probably two cobra snakes are placed, which were not identified in the references by Fakhro and Dabty. Cobras are considered sacred creatures in many cultures, often as protective symbols.

Each circle forms knots of linkage from the four sides of this circle with equal and symmetrical longitudinal rhombuses. The rhombuses are confined by equilateral triangles / 12 x 12 ×12 cm / approximately from the four sides of this circle. Looking at this mosaic pavement in general, we can realize the intersection of these geometric shapes (circles and rhombus and triangles) which composition has a three-dimensional effect.

It must be noted that the size of the stone *tesserae* used in the implementation of this mosaic pavement completely without change is /1×1×1 cm/, and its colors were numerous and varied (black-white-red-orange) and this adds to the mosaic pavement more artistic sophistication and senses the creativity of the craftsman who designed and implemented it.[161]

A small part of it (180 x 85 cm) remained. In this part of the mosaic pavement, a braided decorative strip 12 cm wide appears in the form of successive braids of equal length. They confine at their intersection points rhombuses of 4 x 4 cm size, which extend along the central axis of the strip. On both sides of this rhombus are two small isosceles triangles (2 x 2 cm) that are distributed diagonally.

Following the braided decorative band at a distance of 6.5 cm, there was a single black line with a width of 1 cm that connected with it directly a small circle with a diameter of 10 cm, followed by another circle at a distance of 6 cm from the first circle; both circles are dark red; followed by another circle with a width of 1 cm at a distance of 15 cm from the second circle, followed by another circle with the same width at a distance of 4 cm, but in black color, which connects at its end with a straight line parallel to the braided band.

[161] Fakhro, M., & Dabty, Y 2006: 1.

- On either side of the vertical axis of the center of the circle are two equilateral triangles (12 x 12 x 12 cm). The overall geometric composition of this part of the mosaic pavement is not clear due to the damage.[162] (Fig. 102)



Fig. 102. The first scene of the mosaic pavement in the rectangular hall. (Fakhro, M. 2016: 406).

Second section: In the western part of the hall (C1a), the floor was paved with mosaic, which extends over the width of the hall by about 4 m and a length of 406 cm. It is noted that there is damage around a cylindrical column that was placed directly above the mosaic pavement. The mosaic pavement here seems to be severely damaged, which is due to the fact that the building was used for residential purposes in the Islamic period and many structural elements (walls, columns, etc.) were placed directly on this mosaic.

In general, the geometric scene of this section of the mosaic pavement differs from the scene of the first section, but the common denominator between them is the surrounding frame, which consists of continuous braids and on the surrounding of the mosaic pavement. The mosaic pavement is divided into two parts:

[162] Ibid., 5.

- The first part consists of regular, straight, and intersecting geometric lines, which by their intersection with each other form rhombuses by dimensions (34 x 34 cm), and in the center of each large rhombus is a small parallel rhombus by dimensions (12 x 12 cm) in black color.
- The second part is separated from the first part by a braided band, followed by rows of regular and intersecting octagons in an even and regular way both vertically and horizontally. Each octagon is divided into four hexagons, whose dimensions are (27 x 17 cm), and in the center of each hexagon is a black rhombus with dimensions (27 x 17 cm).[163] (Fig. 103)



Fig. 103. The second section of the mosaic pavement in the rectangular hall. (Fakhro, M., & Dabty, Y 2006: 1-12).

[163] Ibid., 7.

Technical Condition of Mosaic Pavement

1. The mosaic pavement appears to be severely damaged, primarily because the building was repurposed for residential use during the Islamic period, resulting in many structural elements (walls, columns, etc.) being placed directly on top of this mosaic.
2. There are *lacunae* in the mosaic pavement.
3. Loss of the mosaic *tesserae*.[164] (Fig. 104)



Fig. 104. Damage to the mosaic pavement. (Fakhro, M., & Dabty, Y. 2006: 1-12).

[164] Ibid., 10.

Mosaic Pavement Lifting Process

1. Cleaning the mosaic pavement using a brush and water to remove sediments and calcifications (mechanical cleaning).
2. Conducting comprehensive photo documentation of the mosaic pavement before initiating the lifting process.
3. Sketching the mosaic pavement and establishing extraction lines for precise removal.
4. Releasing the edges of the mosaic pavement to facilitate easy removal.
5. Thoroughly documenting all stages of the mosaic pavement' removal process.
6. Placing the canvas longitudinally and crosswise while utilizing glue to secure it.
7. Drawing cutting lines on the canvas to guide the extraction.
8. Gradually lifting the mosaic pavement in sections after completing the cutting process. (Fig. 105)
9. Transferring the lifted mosaic pavement to the National Museum of Aleppo.[165]



Fig. 105. Process of Mosaic Pavement Lifting. (Fakhro, M., & Dabty, Y. 2006: 1-12).

[165] Ibid., 12.

Conclusion

The comprehensive observation of the floor, adorned with mosaic throughout its entire expanse, reveals an exceptional artistic achievement, underscored by remarkable precision in execution. The sophisticated execution of the mosaic pavement relied on mathematical principles and intricately interconnected geometric lines, skillfully combining straight and oblique elements to interlace diverse geometric shapes, such as circles, octagons, rhombuses, and more.

Notably, the craftsmen made a successful attempt to break the monotony of shapes by creating different and varied forms of new geometric formations in each part of the mosaic pavement. The result reflects a high artistic sense and a remarkable level of craftsmanship and technique.

IV. MOSAIC PAVEMENT AT MARTYR JOHN'S MONASTERY (AL-NABGHA)

The Syrian Mission in Aleppo, under the direction of Dr. Youssef Kanjou, launched an emergency excavation campaign in February 2007 in the village of al-Nabgha al-Kebira in the canton of Ghandūra (in the Jarablus area) northeast of Aleppo, during which, unfortunately, nothing more than the mosaic itself could be excavated. On behalf of the Syrian Directorate General of Antiquities and Museums and within the framework of the Syrian French mission (directed by Fançoise Briquel Chatonnet, Alain Desreumaux, And Nichola Kabbad), which collects Syriac inscriptions, the monument, and its inscription were studied (Ayash, Sabbag, Balty, Briquel Chatonnet, and Desreumaux 2008). They have published a book in English about the church of St. John Martyr on the Middle Euphrates in the village of al-Nabaghah, translated into Arabic by Musa. Deeb Khoury and Suhail Jumʿa.

Geographical and Historical Overview

The monastery is located about 100 km northeast of the city of Aleppo, in al-Sājūr Valley, near the village of al-Nabgha (al-Nabgha Mountain) in Jarablus town, on the top of a mountain of medium height that is very rugged with basalt stones. It is 5 km away from the right bank of the al-Sājūr River, and the mountain extends from the side of al-Ghandūra town to the side of al-Rāʿī town along the Turkish border. (Fig. 106) The site was accidentally discovered in an area known archaeologically as one of the most important ancient quarries, where basalt stones were used to make statues in many historical stages. Several huge

statues were seen at the Sixlar site, which is about 7 km from the discovered site. Researchers *Guy Bunnens* and *Stefania Mazzoni* spoke about this archaeological quarry.

The presence of the archaeological site in this geographical location on the top of a mountain overlooking a valley indicates that the area was rich in natural resources such as water, fruit trees, and animals, which allowed a kind of self-sufficiency that allowed the establishment of worship and isolation from the outside world, which means that there was a prior choice of accommodation for asceticism and worship, and the site is still far from people's eyes. The excavated site is small; it is a little more than 400 meters long and consists of several rooms heading south. However, the archaeological site is relatively large. There is a small archaeological mound, which could be a watchtower, found 500 m from the excavation site and extending more than 1 km to the south, where a large stone was found prepared for manufacturing. The surrounding lands were reclaimed by farmers, and the site was left as it is due to its ruggedness and the abundance of stones, which prevented any harm to it.[166]

The history of settlement on the banks of the al-Sājūr River dates back to prehistoric times. There are several mounds near the site that date back to the Bronze Age, such as the Tell al-Nabgha and the Tell al-Hajar. A tomb was discovered in 2006. date back to the middle of the third millennium BC in the village of al-ʿLqāna, numerous sites from the Byzantine period were discovered containing various mosaic pavements, including the mosaics of Tell al-ʿAmārana, Tell al-Fursān, and Deir Qannsrīn. This area belonged to the Archdiocese of Manbij, which is located 25 km northwest of the city. [167] (Fig. 106)

Stages of Archaeological Excavation: A Comprehensive Study

The site was discovered by chance, as some reports spoke of an important site on the top of the mountain. In order to identify the history of the site, several sondages were carried out, as follows:

Sondage A: In the upper part of the archaeological site, a square was made, and the excavation could not be completed because of the many stone blocks. It is believed that there are several important rooms on the site.

[166] Kanjou, Y 2008: 49.

[167] Briquel Chatonnet, F. Desreumaux, A 2011: 45.

Sondage B: This square is found in the center of the site, and parts of a large water cistern are found, with an upper opening and surrounded by a stone wall.

Sondage C: It is the most important square and is located 3 m from the earlier square. A mosaic pavement was discovered at a depth of 30–50 cm. Therefore, the work focused on this square only that season.[168]

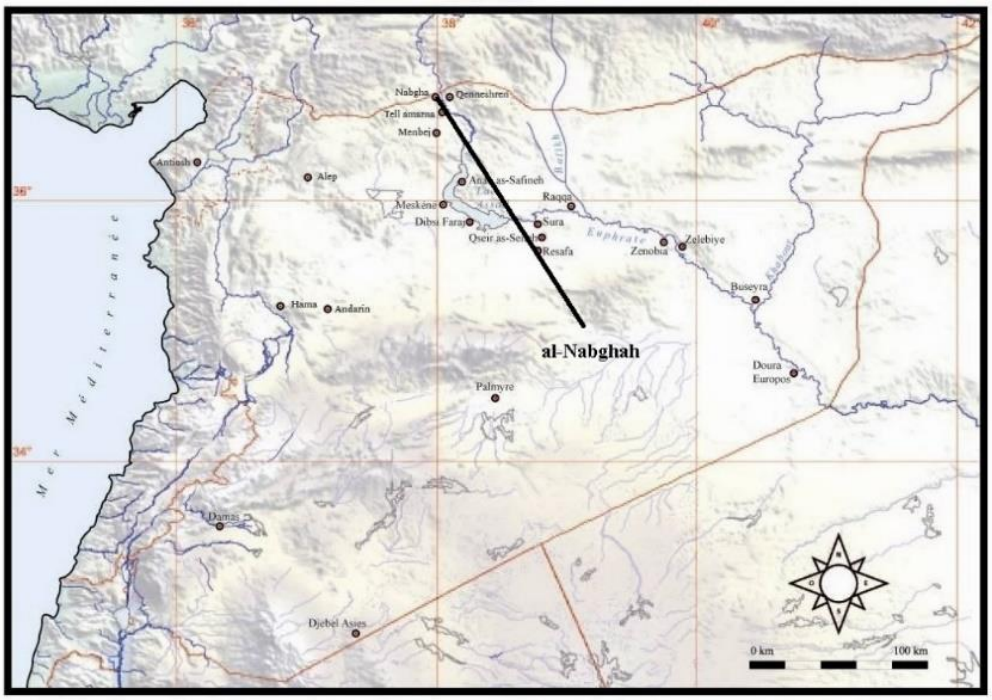


Fig. 106. Map of Syria locating St John's Monastery of "Al-Nabgha" and other Archaeological sites. (Balty, J. 2008: 54).

Descriptive Analysis of Mosaic Pavement: A Comprehensive Overview

The mosaic pavement has a rectangular shape, and its dimensions are 9.45 x 5 m. It is located in a portico with a west-east orientation, and its door faces south. The mosaic was executed with small (6-mm) multicolor *tesserae* with a color gradient between the dark and light tones. Through it, the ancient Syrian artist expressed his religious beliefs, his environment, and the philosophy with which he views things and the universe and what it has in terms of animals, plants, land, and sea creatures. The mosaic was surrounded by walls of small basalt stones, 75 cm wide, covered with a layer of pebbles. On the eastern side of the mosaic, there are two steps leading to a second room. The mosaic pavement can be

[168] Kanjou, Y 2008: 50.

divided into four sections: a geometric scene, a scene from the natural environment, a Syriac inscription, and a frame.[169] (Fig. 107, Fig. 108)



Fig. 107. Mosaic pavement of Martyr John's Monastery "Al-Nabgha". (Balty, J. 2008: 43).

[169] Ibid., 50.



Fig. 108. A schematic diagram of the entire mosaic pavement parts (drawn and documented by Fayez Ayyash, and Rana Sabbagh). (Balty, J. 2008: 53).

1. Geometric Motifs in the First Scene of the Mosaic: A Scientific Study

The geometric scene represents the largest section of the mosaic; its dimensions are 5.40 x 3.80 m, and it forms the entrance and function of the building. The general shape consists of six symmetrical centers; each center is a circle with different depictions. Each circle is surrounded by eight squares and eight rhombi, and there are triangles on the borders of the mosaic in addition to six rhombi on the main axis. Thus, the geometric scenes are divided into one hundred twenty-five shapes, each of which has a symbolic scene. Twenty-four of them have animal content, seven of them have plant content, and there are three scenes containing shapes with religious content, including Syriac inscriptions, and the rest are geometric scenes. (Fig. 109)

The three elementary geometrical shapes (rhombi, squares, and triangles) together also form a 3D view and seem to depict polyhedral. The main depictions from the right side are a dove, (Fig. 110), Solomon's knot (Fig. 111), a cow, and a tree are all within an octagon with an inner a circle shape field. To the eight sides of each, eight squares are connected, four are with geometric and four are with figural motifs. On the left side are semi-open flowers, a *kantharos* from which the vine emerges with bunches of grapes and a rabbit with flower buds. Two to four secondary fields surround them, with birds such as partridge, rooster, owl, and some fish. Geometric shapes and assorted colors, and the gradation of colors, added a third dimension and a strong depth to this scene. The main unit of the geometric shapes can be seen in the form of an octagonal maquette, and the three-dimensional sides are repeated regularly and seen from all sides, a technique called the prism technique and rainbow colors.[170] (Fig. 112)

[170] Ibid., 52-53.



Fig. 109. The first Scene is "Geometric Scene". (Kanjou, Y. 2008: 52).



Fig. 110. Dove between two plants. (Balty, J. 2008: 47).



Fig. 111. Intricate interlaced motifs. (Balty, J. 2008: 46).



Fig. 112. Heart-shaped flowers and buds. (Balty, J. 2008: 45).

2. Natural Environment Motifs in the Second Scene of the Mosaic: An In-depth Study

This scene can be divided into three levels: First level: On the top of the mosaic are two opposite peacocks, while on the second and third levels there are four symmetrical animal scenes divided by trees on the main axis. One scene remains, standing for a predation scene. Second level: A deer appeared as a type of wild deer that lived in large numbers in the Euphrates basin called *Dama Mesopotamia.* The artist shows how the prey was affected by clearly depicting the deer's spilled blood and how it tried to escape. On the same level, on the opposite side, a deer is looking toward the center of the mosaic. Its body was vandalized except for its horns, ears, and mouth.

Third level: Found on the right side of the bottom of the mosaic, this level has a bull in an attacking position, a large part of which has been destroyed except for the remains of its horns and back. Opposite him, a lion appears, which is almost destroyed. A tree separates them in the center of the scene. Two trees are depicted: the lower is a fruit tree, which may be a pomegranate or apple tree, while the upper one is a cypress tree. There are also two parallel trees on the left side that look like pears, and the scene is surrounded by rosebuds that aim to form a turbinate framework for all animal shapes in the mosaic. This scene stands for wildlife in all its fauna and flora details.[171]

Iconoclasm: Historical and Cultural Study

Iconoclasm and its outcomes were studied in the 1.5, 1.6.[172] We have several similarly treated parts concerning which can be connected to the iconoclasm at the Al-Naghba site. (Fig. 113, Fig. 115, Fig. 116, Fig. 117) We can compare them with another example in the Upper Church of Massuh in Jordan, where the body of a pheasant was camouflaged but the head was left interestingly untouched—and to prevent further damage, the space once occupied by the bird's body was filled in, perhaps with the *tesserae* used in the original image. (Fig. 114Fig. 114) The careful, almost loving "camouflaging" of the images in these mosaics may suggest that Christians themselves did the damage pointed out by Vasiliev A. A. [173]

[171] Kanjou, Y 2008: 52 - 53.

[172] Please see Pp. 39-42.

[173] Vasiliev. A. A 1956: 23.

According to Dr. Youssef Kanjou, many references point to several possibilities to explain the phenomenon of iconoclasm appearing in the mosaic of St. John's Monastery (al-Nabgha), (in 30 parts), although we do not know the real causes:[174]

1. The Umayyad Caliph Yazid II ordered the destruction of all art forms in places of worship that embody living creatures, such as images and sculptures, based on the opinion of a Syriac historian, but according to the dates, this corresponds to the Abbasid caliphate and the era of al-Manṣūr and al-Mahdi.[175]

There are those who say that the destruction of icons is nothing but a reaction by groups of religious Christians to the Jewish and Islamic accusations that Christians worship idols. The history of iconoclasm dates to the middle of the 8th century AD.[176]

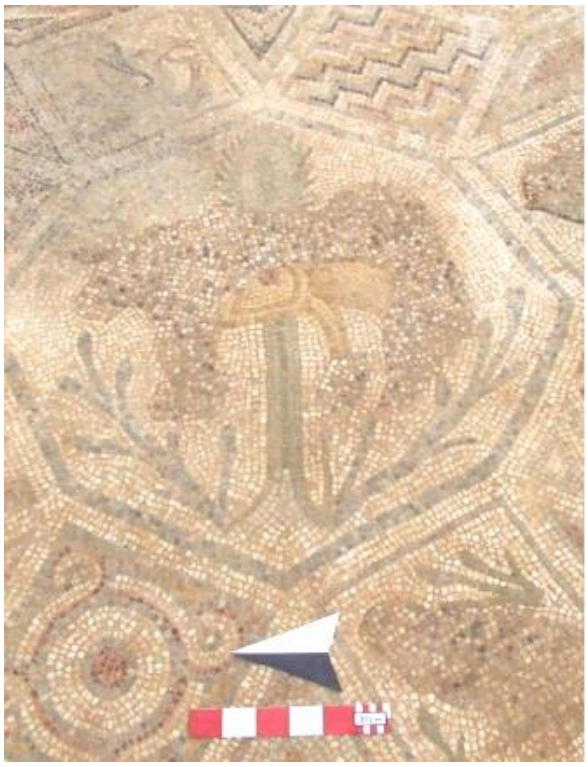


Fig. 113. An animal in front of a tree "deformed cow". (Balty, J. 2008: 47).

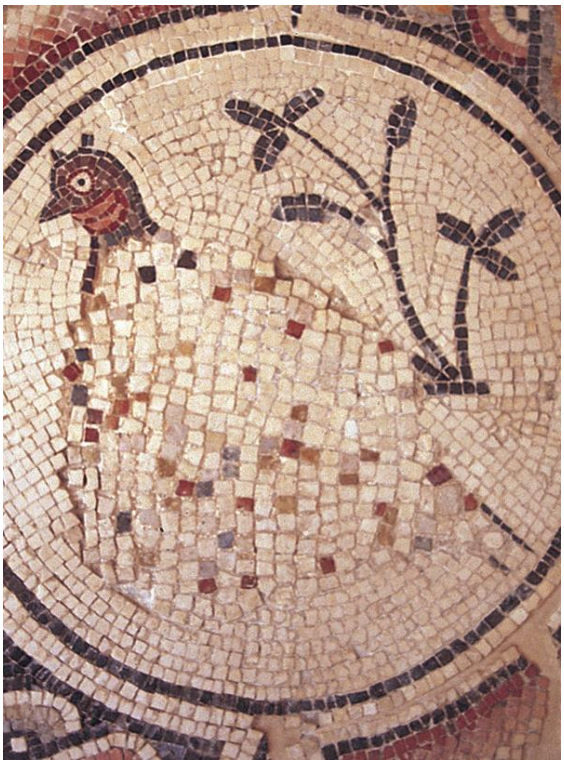


Fig. 114. A figure of camouflaged chicken from the mosaic pavement of the Upper Church of Massuh in Jordan. (Vasiliev. A. A 1956: 23-47).

[174] Kanjou, Y 2008: 54.

[175] Vasiliev. A. A 1956: 25.

[176] Kanjou, Y 2008: 55.



Fig. 115. The second scene is "The natural environment scene". (Kanjou, Y. 2008: 53).



Fig. 116. A dog chasing a tiger. (Balty, J. 2008: 49).



Fig. 117. Pomegranate tree with its fruits. (Balty, J. 2008: 49).

3. Syriac Inscriptions in the Third Scene of the Mosaic: Analysis and Interpretation

Mosaic inscription on the pavement of the Martyr John Monastery (AL-NABGHA)

Historical Overview of Syriac Inscriptions

Ancient Syriac refers to inscriptions and texts written in the Syriac language, dating back to the period between the first and third centuries AD. Syriac is believed to have originated in or near Edessa, which presently corresponds to Urfa in southeast Turkey. Over time, it became the official language of Christianity, gaining prominence across a vast region encompassing Mesopotamia, Syria, Ethiopia, India, and Central Asia. As the most renowned variety of Aramaic, a member of the wider Semitic language family, Syriac boasts a substantial corpus of Christian literature that emerged during the second century.[177]

[177] Butts, A. M 2011: 315.

Ancient Syriac writing can be categorized into two groups based on the medium employed: inscriptions on durable surfaces and documents on organic materials. The earliest ancient Syriac inscriptions can be traced back to 6th AD, primarily found in Edessa and its vicinity. Some were also uncovered in Dura-Europos, a crucial military outpost of the Parthian Empire, and later the Roman Empire, situated approximately 350 kilometers southeast of Edessa along the Euphrates River. These ancient Syriac inscriptions represent a continuation of an earlier Semitic tradition connected with the so-called 'epigraphic habit' prevalent in the Roman Empire.

Among the most comprehensive compilations of ancient Syriac inscriptions is that of *Drijvers* and *Healey*. This compilation offers editions, translations, commentaries, and often illustrations for more than one hundred inscriptions.

Predominantly, ancient Syriac inscriptions are found in burial contexts, either carved into stone or featured in mosaic pavements. Some of the funerary mosaics display portraits of the family, while others exhibit Greco-Roman motifs. For instance, a mosaic from 194 AD portrays Orpheus among wild animals, reflecting the influence of Greco-Roman culture in Edessa during the late second century AD. Additional depictions of Orpheus are evident in mosaics from 227/228 AD and 235/236 AD, while a mosaic from the latter showcases a phoenix. These mosaics provide valuable insights into the interplay of Greco-Roman culture within Edessa during this historical epoch.

Through these ancient Syriac inscriptions, valuable information about the religious life in Edessa and its surrounding regions during the initial centuries AD is unveiled. Notably, several inscriptions from Sumatra, located east of Edessa beyond Ḥarrān, also contribute to our understanding of this historical context.[178]

In the Mosaic inscription found on the pavement of the Martyr John Monastery (al-Nabgha), two Syriac texts are prominently displayed at the top of the mosaic, separated by a staircase leading to another room. Each text consists of eleven lines. "*The north text (on the right) includes information that this construction was built by the abbot of the monastery, Saint Sach. Mosaic....*".[179] The left-hand text, while partially damaged, contains details about the construction date of the place and the year of the mosaic's execution. The available

[178] Ibid., 317.

[179] Briquel Chatonnet, F. Desreumaux, A 2011: 45–61.

translation of the preserved portion reads: *"In the year 718, the Martyrs' House was decorated with mosaics running Saint John, during the time of the monastery's abbot, Saint Barnabas...."*. Based on the inscriptions, it can be deduced that the building dates back to the year 718 in the Seleucid calendar, which corresponds to 407 AD.[180] The significance and contents of these two scriptural texts are subjects of investigation and analysis:

1. The existence of a monastery called Saint John Monastery.
2. The possibility of the presence of the tomb of one of the martyrs on the site.
3. The names of the two heads of the monastery, Saint Barnabas, and Saint Sach.
4. Mosaic decoration took place in two stages. [181] (Fig. 118, Fig. 119)

It is noted in these inscriptions, and according to the opinion of specialists, they were professionally written by Syriac people, which makes translation difficult.



Fig. 118. The first section of the Syriac Inscription "Northern". (Balty, J. 2008: 51).

[180] Ibid., 45–61.

[181] Kanjou, Y 2008: 54 - 55.

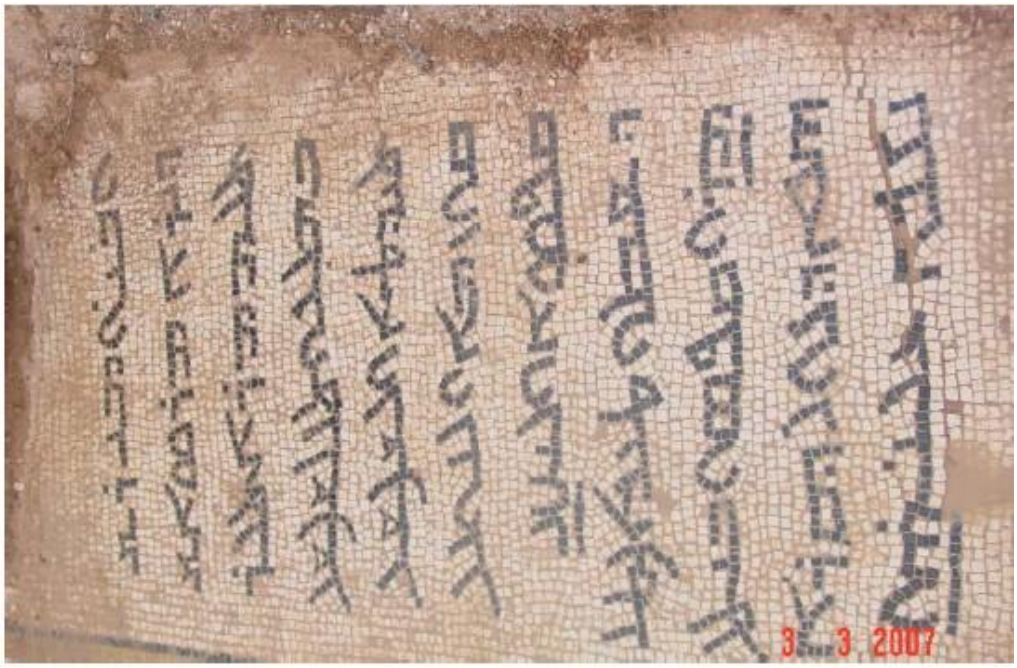


Fig. 119. The second section of the Syriac Inscription "Southern. (Balty, J. 2008: 52).

4. The Mosaic Frame: Design, Techniques, And Symbolic Representations

The mosaic has two frames: The first is external and surrounds the entire mosaic in its geometric and natural sections and is characterized by the existence of several diverse artistic decorations that gather in groups and are connected by geometric lines. They belong to the meander formations of Swastika and embody a series of decorated rectangles that cut the continuous spread of the meander. Later, this style of framing became extremely popular in the fourth and fifth centuries AD, also in Antioch or in the church of Ḥayr al-Sheikh, and its use continued in the 5th and 6th centuries, for example, in the cathedral of *Apamea*. The backgrounds are often geometric (Rainbow-style) or can be filled with animal scenes, and the two styles were used together in Ḥayr al-Sheikh.

At the site of al-Nabgha the meanders of the flat swastikas are executed in two or more colors (black, grey, blue, red, pink, and green), surrounded by extended rectangles of constant dimensions and spread from the southeast corner at the bottom of the inscription, The frame continues in this regular shape on the south side, but appears as a longer rectangle in the southwest corner and returns to its normal shape on the west and north sides.[182]

[182] Balty, J. Sabbagh, R. Ayash, F. Briquel Chatonnet, F. & Desreumaux, A 2008: 23 – 24.

The framing of the meanders ends before the northeast corner and is not symmetrical to the inscription, as the architecture of the structure explains the asymmetrical. The framing ends with a long rectangle decorated with interlocking lines and then begins with another type of characteristic decoration, namely a series of jagged squares on the upper edge that are not contiguous. However, the presence of this new decoration refers specifically to the place where there are two trees, executed in opposite directions; perhaps it is the main entrance of the building. The break of the frame and the recourse to a qualitative drawing reinforce the hypothesis of a corridor that opens to the north towards another room, but the mosaic is interrupted at once after the first row of squares.

Not all geometric backgrounds belong to the rainbow style (dashed lines and squares alternating colors), and we can count two examples of squares coordinated with only two colors (white and black) and the combination of adjacent geometric shapes. (Two or three rectangular hexagons separated by rectangles), tangential (octagons with a central square), cut-out (three central square octagons), contiguous (six squares spaced) or non-contiguous (a line of four circles), three quadrilaterals, two rosettes facing each other at the top, and finally two interlocking decorations (one part in a recess, the other with an ornament). For the longer rectangle that closes the frame to the north. These backgrounds date back to the end of the fourth century and the beginning of the fifth.[183]

The second frame is specific to each scene, which is two parallel lines. There is damage from vandalism connected to the iconoclasm in three sections of the frame, one of which was restored later. It is noted that *tesserae* of larger sizes and assorted colors were used. The presence of the general frame indicates that the mosaic was made at one time.[184] (Fig. 120)

[183] Ibid., 23 – 24.

[184] Kanjou, Y 2008: 54.



Fig. 120. The northern and southern sections of the outer frame of the Mosaic Pavement. (Kanjou, Y. 2008: 54).

Symbolism in Mosaic Art: A Comprehensive Exploration

Those responsible for religious buildings usually try to put shapes and artistic paintings that have various connotations in the mosaic, and these connotations are messages of a religious nature in the first place directed to believers who enter the holy places intending to feel reverence and respect for the place. On the other hand, it has other aims, as it constitutes an integral part of the urban style by giving aesthetic importance to the building in which it is located, that is, many aims can be derived from the mosaic in religious buildings, which are often religious symbols derived from the Old or New Testament (The Torah and the Gospel) in the Byzantine period and earlier periods, so myths were the main inspiration the mosaic artist who used mosaic cubes to express his beliefs.[185]

[185] Balty, J. Sabbagh, R. Ayash, F. Briquel Chatonnet, F. & Desreumaux, A 2008: 11-22, 43-50.

Although mosaic artists usually avoid symbolizing the Christian faith directly on the floors of churches there are indirect symbols on those floors, such as the vine, the peacock, and the types of crosses that are frequently repeated in the mosaic floors of the Byzantine period, the vine that has branches bearing leaves and bunches of grapes has a deep literary symbolism and religious concepts, the vine according to the Bible has more than one indication and was mentioned in more than one place in the New Testament, denotes to Christ and his relationship with believers. The peacock symbolizes the resurrection and immortality of Christ. (Fig. 121)

On the other hand, the existence of fruit trees, flowers, and animals of all kinds, both from the land and sea, formed part of the general aesthetic perspective of the mosaic floor and expressed the surrounding area, and these features are a continuation of the Artistic school in the Hellenistic and Roman era. [186]



Fig. 121. Kantharos with vine branch. (Balty, J. 2008: 46).

Chronological Analysis of Al-Nabgha Mosaic Pavement

The mosaic pavement resembles many mosaic pavements previously discovered in various places in Syria. For example, we mention the mosaic pavement of Deir Sharqi,

[186] Kanjou, Y 2008: 55 - 56.

which is shown in the National Museum of Damascus, and the mosaic pavement of *Apamea*. This similarity is only in the geometric shapes, where the octagonal shape surrounded by several squares can be seen. It has multiple colors to reflect three-dimensional shapes. As for the natural scene, it also appears in many mosaic pavements, such as Ḥurata mosaic pavement in Maʿārra region. As for the existence of the two scenes together in one mosaic pavement, we see them in the church of *Martyr Saint Theodore* in Madaba, Jordan.[187] Based on pottery fragments, archaeological sites where mosaic pavements were discovered, and the initial translation of the Syriac inscriptions, we can date this site to the fifth century AD. The church existed until the eighth century AD, and studies were still being carried out to determine the dates of its foundation and collapse and the reasons that led to these events, but they were discontinued due to the Syrian crisis, which prevented us from reaching this.[188]

Significance and characteristics of Mosaic Pavement

The totality of the features of this discovery, represented by the mosaic pavement can be summarized in the following points:

1. The mosaic highlights various religious-philosophical concepts inspired and taught by the Christian religion at that time, expressing the artist's great ability to combine religious life with the environment in which he lives in a creative style.

2. The mosaic is also characterized by the presence of two different scenes: the first is geometric, and the second is with animals and plants which is rare in the mosaic pavements discovered so far in Aleppo. The mosaic is characterized by its size; it is complete without missing any part, and its measurement is 50 m^2.

3. The presence of Syriac inscriptions and the absence of human representations give another dimension to the discovered mosaic, apart from the information about the history and the names of the head and builder of the monastery, which are undoubtedly general information. The most important thing for us is that this monastery was built by the inhabitants of the region at that time and not by foreign peoples. This monastery has an authentic oriental character.

[187] Ibid., 56.

[188] Ibid., 57.

4. The history of mosaic dates to a very sensitive period, the era of iconoclasm, especially the transitional period, in which several sections of the mosaic note the obliteration or removal of the icon and the restoration of the place in a beautiful style, and this is the only mosaic in Syria so far that records and chronicles this phenomenon.[189]

5. The mosaic is of historical importance, as it supplies information about the history of the area surrounding the site and confirms the spread of the Christian religion and Syriac settlement. It can be well related to the newly discovered sites in the Euphrates basin, Tell ʿAmārana on the right bank near the site, and the Qinnasrin Monastery (Deir Qannsrīn) discovered on the left side of the Euphrates, to redraw the archaeological map in northern Syria.[190]

Methodology Manufacturing Al-Nabgha Mosaic

The mosaic pavement of al-Nabgha was executed by professional craftsmen and was characterized by a stylistic flow pulsating with movement and creative imagination. Although the formation is relatively complicated, it was executed with skill and accuracy according to different squares so that the corners fall entirely in the center of the octagonal angles. The average vertical axis runs in the center of each completely vertical rhombus and in the trunks of the two trees. The clerks of the axes all bear an ornament that emphasizes verticality: the interlocking rhombuses alternate with the ring-shaped spindles, while the ornament of vertical braids occupies the center. Such harmony in the decoration is not found anywhere, and this is not accidental.[191]

Despite the careful distribution of the regular elements, we are surprised by the error in the perimeter of the octagon in the corner. The southwest, which broke the line of the vertical rhombus (axis) and cut the pattern of the rhombus star, which is an essential element of the composition, and which caused the group formed by the rhombus and the square to be overturned, is enough to turn it to restore the original pattern and return to its specific place, decorated with the spindle with rings on the central axis.

[189] Ibid., 58.

[190] Ibid., 58.

[191] Balty, J. Sabbagh, R. Ayash, F. Briquel Chatonnet, F. & Desreumaux, A 2008: 25 – 26.

This observation gives us an idea of how the mosaic craftsmen worked when they assembled the forms to avoid distortion, and while there was no real organization of the decorations except on the central vertical axis, we do notice a care in their placement, and the care seems evident in the absence of a succession of decorations of the same type, especially in the theme of the birds. We see this method around the octagon by decorating it with small flowers and the *kantharos*. As we can see around the octagon with the interlacing lines, the other two octagons in the distribution do not look like regular patterns.

As for the backgrounds, they were implemented very carefully. The design and the varied color choices are rich, and not only the color palette: red, pink, green, grey, blue, yellow, white, and black, but also the craftsmanship is particular, especially in the rainbow series.

Although the quality of execution was excellent, we believe that different hands contributed to the work: We refer here to the amazing artistry of the interlocking formation on a yellow background, which is contrasted to the north by the striking lightness of the image of the chalice with two handles placed on the center line. Undoubtedly, these two formations were executed by mosaic craftsmen with more experience. The execution of birds and animals is difficult to judge due to the damage to the scenes, but the plant elements are characterized by an extremely elevated level of technique.

Finally, it is noticeable that the squares of the white background in the second scene are arranged in a fan shape at the bottom of the transverse trees. The meanders in the frame are mostly pink and black and are sometimes distinguished by a regular pattern. The background is simpler and was probably executed by less skilled craftsmen. In general, the mosaics are of high quality, which proves that there was a workshop in this area that we can call "*vanguard*". The similarity that we have noted in comparison with the mosaics in Antioch, and the regular style that generally characterizes the funerary mosaics of *Addisa* but is absent here can be attributed to a mobile workshop coming from the capital.[192]

[192] Ibid., 25 - 26.

The Technical Condition of the Mosaic Pavement in Al-Nabgha: A Scientific Review

1. Cracks complicated: Mosaic pavement cracks are a common and recurring problem, and they occur as a result of multiple factors such as temperature changes, humidity, and the natural expansion and contraction of the materials used in the mosaic.

2. Lacunae, loss, and eroded of tesserae: Mosaic tesserae loss refers to a situation where decorative tesserae used in the construction of a mosaic pavement are missing or damaged. This problem is caused by several factors, including natural erode and tear, environmental effects such as corrosion from water and chemicals, and sometimes due to excessive use or mechanical erode.

3. Plants grow between the tesserae: Plant growth between mosaic pavement tesserae can occur as a result of various environmental factors and natural processes. Seeds can find their way into the crevices between the mosaic pavement tesserae through natural dispersal mechanisms like wind, water, or even through accidental human activities. Once a seed lands in these crevices, it may find sufficient soil, moisture, and sunlight to germinate and grow.

4. The mosaic pavement has been lifted and preserved in the mosaic store of the Aleppo Museum and is waiting for a restoration project.

5. Elevated temperatures result from the metal shelter, (Fig. 122) which lacks ventilation holes.

6. Acts of vandalism, including an attempted intrusion into the metal structure by digging from the outside and causing random damage to the mosaic pavement.

7. Soil humidity due to lack of ventilation led to the non-drying of the adhesive while placing the canvas on the surface of the mosaic.



Fig. 122. The Metal structure was built over the mosaic pavement. (Jbaee, M. 2010).

Mosaic pavement lifting process

A. Documenting all stages of work with photos.
B. Cleaning the mosaic surface by mechanical method.
C. Drawing mosaics on plastic foil at a scale of 1/1
D. Placed the canvas (facing) on the surface of the mosaic pavement.
E. Drawing the mosaic cutting lines on the plan and on the fabric.
F. Separating the pieces of mosaic from each other according to the plan.
G. Place the mosaic pieces in boxes, considering the box numbers and the numbers of the mosaic pieces contained within one box.
H. Transferring the mosaic boxes to the Aleppo Museum so that the painting can be restored in the future. (Fig. 123)



A



B



C



C



D



E



F



G

Fig. 123. Mosaic pavement lifting process. (Jbaee, M. 2010).

Conclusions

After the archaeological excavations for the first season and through the primary translation of the inscriptions, it was found that we are in front of a site that dates to the 5th century AD and probably had three functions: Syriac monastery, the tomb of one of the martyrs, church.

The mosaic of Martyr St. John Monastery (al-Nabgha) is considered one of the most important discoveries in the region, due to its complex geometric and animal motifs and the way of its high-quality execution, showing a remarkable technique in the work of paving motifs and the presence of specialized workshops.

Therefore, it can be said that the mosaic of al-Nabgha is considered one of the masterpieces of Byzantine art in Syria. It was created by a talented artist, and his workshop is distinguished by remarkable artistic flair, aesthetic sense, manual skill, and professional experience in harnessing geometric shapes in the service of scenes of symmetry.

V. MOSAIC PAVEMENT IN THE VILLAGE OF AL-MANKŪBA (MANBIJ)

Geographical Overview

The city of Manbij is located in northern Syria, northeast of Aleppo Governorate, about 81 km west of the Euphrates River. (Fig. 124) It is one of the most important regions and a major point of contact, convergence, and transit between Anatolia and the Levant, as well as between Yamkḥad and Ḥarrān. Its importance was increased by the passage of great thinkers, kings, sultans, and travelers, including *Ibn Jubeir*, *Romanian Julian*, *France Commun*, and others.



Fig. 124. Map of Syria showing the location of al-Mankūba Site "Manbij". (Source: Google Earth).

The site where the mosaic pavements were discovered is located in a residential area of the city of Manbij (al-Mankūba neighborhood). It was damaged on the east and south sides by the construction of the road for the area. The site was excavated in 2008 by the Syrian Archaeological Mission in Aleppo, where a mosaic pavement was discovered, but the excavations were stopped and not continued, and the site was covered again, and some information about the discovered mosaic was published. The mosaic pavements are usually lifted by the technical laboratory team of the Directorate of Antiquities and Museums and scientifically and technically taken to the National Museum of Aleppo, where they are restored and conserved using suitable methods or stored in the mosaic storage until another time.[193]

Stages of Archaeological Excavation

During the construction of a north-south road in the industrial area in the north of Manbij city by the municipality, archaeological layers came to light on the western side of this road. One of these layers contains small mosaic stones that indicate the presence of a mosaic pavement for an archaeological building from the Byzantine period, part of which was destroyed and part of which was still well preserved.

The archaeological excavations began on November 20, 2008, and when the rubble was removed to a depth of about 50 cm, many broken brick slabs and "*roof tiles*" were discovered, as well as many small *tesserae* of different colors and some white, green, and red marble fragments, some of which have floral ornaments and others in the form of small triangles, used as architectural decoration. According to Fakhro this mosaic is one of the most important mosaic pavements because it has a special form of vital homogeneity that indicates calming. While many mosaic pavements showed violence, chasing, and the like, this mosaic pavement contains many bird scenes and flora scenes.[194] There are special sections such as the division of regions, part of which can be explained and can explain that the benevolent spread the region in all its directions and also gives a social reflection that the region was dominated by a time of prosperity and tranquility, for which these scenes came in a very quiet and beautiful form, which means that the work was done in them quietly, accurately, and with psychological comfort that reflects these scenes and contents.

[193] Fakhro, M 2009: 56-62.

[194] Fakhro, M 2008: 1-7.

On the other hand, this tessellated pavement, like many other mosaic pavements, has an external frame, and it is one of the rare frames that have braids that are distinctive in its subdivisions, and among them, there are overlapping geometric motifs that give a special beauty to the geometric shapes. A large part of the mosaic pavement has been damaged in several places a long time ago; if this part had been preserved, it would have helped us a lot in the interpretation of the mosaic. This site is not the only one with a mosaic pavement in "*Manbij*", but "*Manbij*" is based on a successive human civilization and not on a single epoch; it was the center of the continuous civilizations, as evidenced by archaeological finds that date to various periods of antiquity.[195]

Study and Analysis of the Technical Condition of the Mosaic

The mosaic pavement is extensive and may have been the floor of a gallery or a long courtyard. It measures 12 x 58 m, but it was damaged in several places long ago because it is close to the surface. The preserved mosaic measures about 3.8 x 3 x 5 m and is made with small *tesserae* (1 x 1 cm) of limestone and marble in different colors such as white, green, blue, red, black, and purple. (Fig. 125) These *tesserae* form various geometric scenes of coordinated and alternating diamonds, in addition to the semicircles on either side with a colorful flower inside; inside each diamond is an animal (birds) or plant scene (green leaves), a cross, an ornament. The mosaic pavement is surrounded by a geometric and decorative frame consisting of two parts: an intersecting line in the shape of an X and alternating coiled braids, forming a complex geometric decoration that testifies to high artistic creativity. The geometric, floral, and animal scenes and the color gradations added a third dimension and a strong depth to these scenes. The main scene consists of harmonious and alternating geometric shapes (diamonds) distributed along the entire length of the mosaic, and each corner ends with a colored circle containing animal shapes of various birds, such as ducks, geese, partridges, swallows, storks, and others, as well as plants, including trees, leaves, flowers, and fruits.[196]

[195] Ibid., 1.

[196] Fakhro, M 2009: 56.

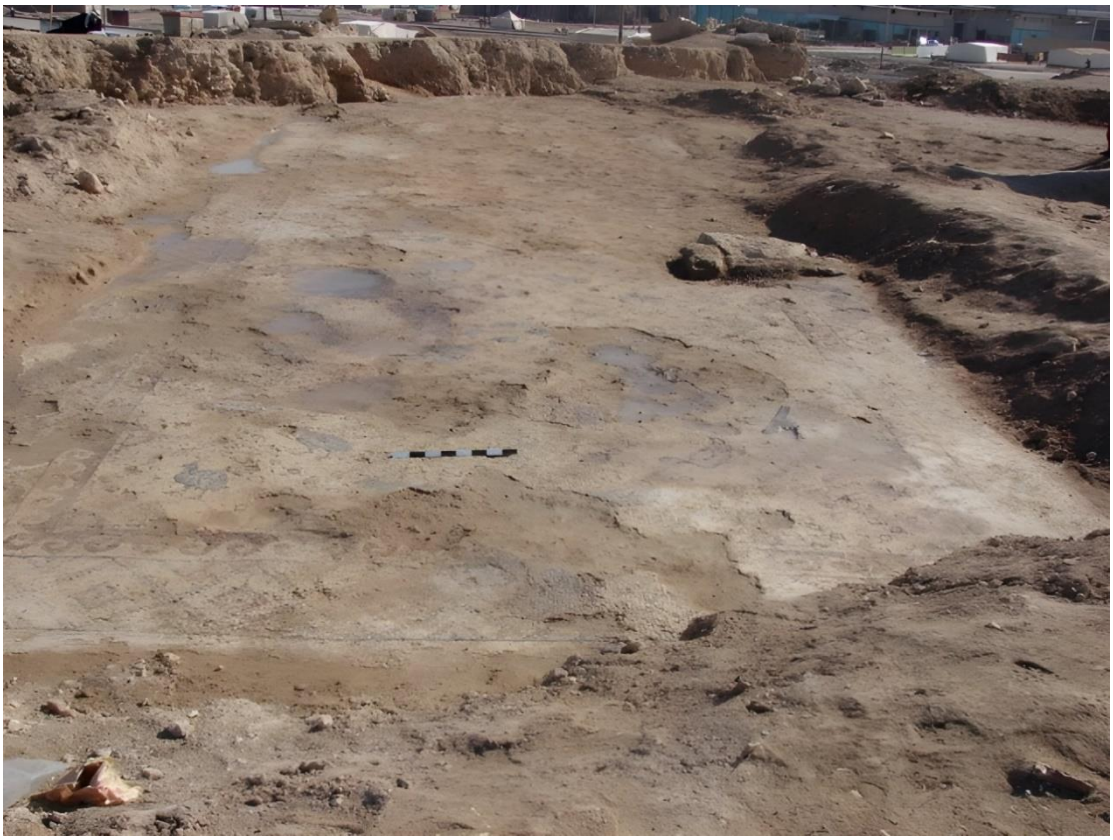


Fig. 125. A general view of the mosaic pavement discovered in al-Mankūba "Manbij" Shows the locations of the damage. (Photo by Fakhro, M. 2008).

Comprehensive Study of Mosaic Pavement

The mosaic pavement contains floral, geometrical, and animal scenes in all rhombuses, which seem to consist of several successive rows. I will describe each of them separately, starting with the west side, where the clearest part of the mosaic is located, and the description of the rhombus will be from south to north:

The First Row

The first scene contains red floral motifs (fruits) that look like pears; the second scene is a standing bird that looks like a duck looking back; the third scene is the green leaves of a yellow and red root plant; and the fourth scene is in the shape of a standing duck looking at the north.[197]

The Second Row

Birds are in the first and last rhombus, and in the middle rhombus have unclear shapes. (Fig. 126)

[197] Ibid., 57.



Fig. 126. Water bird in the rhombus, and unclear motifs in the middle rhombus. (Photo by Fakhro, M. 2008).

The Third Row

It was damaged in some places, but the remains of plant forms (leaves) and animals (legs) appear. The first rhombus contains the shape of a bird that looks like a swallow.

The Fourth Row

It has been badly damaged and shows only a goose-like bird in the center.

The Fifth Row

Parts of the scene have been damaged: the first scene consists of circular shapes which are green and probably represent some kind of fruit. The heron (stork) appears inside the rhombus, and inside the northern rhombus is a plant shaped with the main stem and crossed branches.

The Sixth Row

It contains mostly indistinct motifs but including a Greek-cross shape[198] (Fig. 127)

[198] Ibid., 58.



Fig. 127. A cross that ends with two-line heads, around the intersection many colored circles. (Photo by Fakhro, M. 2008).

The Seventh Row

It contains clear and similar plant forms in two rhombuses consisting of a stem and three leaves, each having three petals. There are also small leaves without petals.

The Eighth Row

It was damaged in the southern parts and contains in the center rhombuses a contain of a standing bird (a duck) with red legs facing east and four symmetrical rhombuses. On the damaged eastern side, there are other scenes that also contain animal motifs, such as a stork with a long beak and two thin legs. Another shape of a water bird appears in a moving position with legs apart and head raised, and floral scenes consisting of small red circles could have been some kind of fruit or root plant such as onions or turnips, which have green leaves.[199] (Fig. 128)

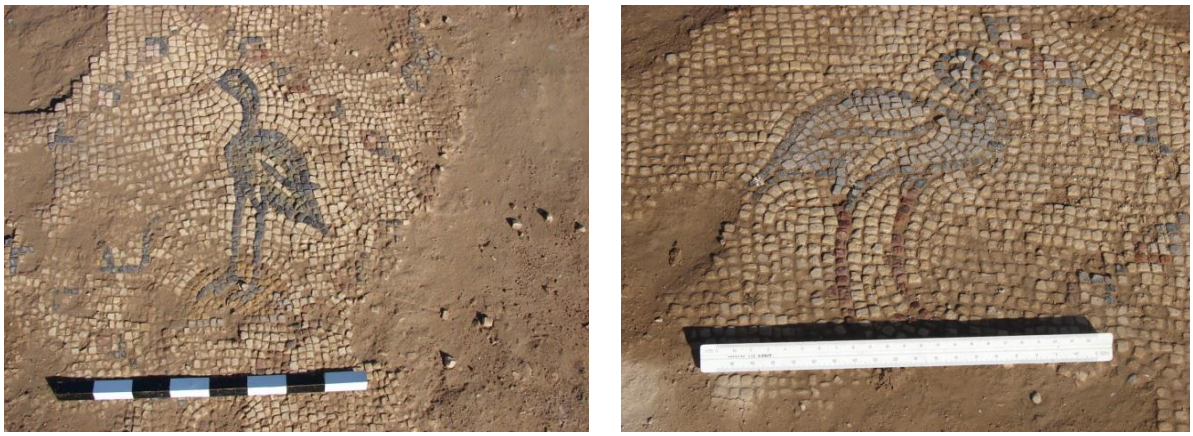
[199] Ibid., 59.



Fig. 128. A mosaic pavement with damage in some areas, featuring floral, geometrical, and animal motifs. (Photo by Fakhro, M. 2008).

Other depictions are found on the northeastern edge of the mosaic pavement within rhombuses in an east-west direction; the western side contains the shape of a standing bird with a red beak, a blue body, and long, thin red legs. On the eastern end are geometric shapes consisting of three circles in yellow and red, forming a triangle. On the eastern side of the mosaic pavement, there are many damaged scenes, but only a few parts have been preserved, such as a bird with a long neck and a red beak standing on a yellowish rock.[200] (Fig. 129)

[200] Ibid., 60.



A **B**

Fig. 129. A) A bird with a long neck and legs, and a red beak standing on a yellow rock. B) A bird with a short neck, long legs, and a red beak. (Photo by Fakhro, M. 2008).

Chronological Analysis of Mosaic Pavement

After the completion of the excavations on the mosaic pavement, which shows geometric, animal, and plant scenes, the following was discovered:

- Two brick fragments and a large number of roof tiles of various sizes and shapes were found, all dating from the Byzantine period.
- By studying the artistic scenes and the method used in the execution of this mosaic, as well as by comparing it with the mosaic pavements discovered at other Byzantine sites of Syria such as Hama, Idlib, the Simeon Mountain, and others, it could be proved that this mosaic was dated to the Byzantine period between the fifth and sixth centuries AD, which is the prosperity period of Manbij city, which was called *Herapolis* during the reign of *Justinian I*, which means in Greek the holy city in reference to the goddess *Hera*, queen of the Greek gods, in addition to *Polis*, which means city. [201]

This period is attributed to the Late Byzantine period and indicates the technology of the work, which belongs to the later periods, in which the ground to be paved with mosaics is first leveled, then the mosaic paving is prepared, and then the *tesserae* are regularly paved. This paving is a sufficient indication of the late period in the technique of mosaic paving. This mosaic pavement belongs to those with little mortar and little filled soil, which caused it to be affected by natural factors.

[201] Ibid., 61.

After surveying the area and studying the nature of the terrain, especially the archaeological layers in which the mosaic pavement was discovered during the road construction of the industrial area, there was clear archaeological evidence, such as walls built with large stones as well as sewers from the Byzantine period, indicating the presence of an important architectural building in this place. Extensive archaeological excavations are required to clarify these features and determine their function.

Excavations were resumed in 2010 by a joint Syrian French mission; they rediscovered the previously discovered mosaic pavement and expanded the excavations. More other mosaic pieces were discovered. These mosaic pavements make up the remaining portion of the site. During the work on the pavement of a large Byzantine Basilica, it became clear that most of the mosaic pavements had been lost (damaged or stolen) in earlier times. During the excavations, only the base layers of the mosaic pavements were visible.

The importance of the site is evident from the presence of a large basilica (*DIACONECON*). The southern room next to the apse contains mosaic pavement with a Greek inscription and large halls, whose function is unknown, all paved with mosaics of various themes. In the rubble in the western part of the site, very small *tesserae* (3 mm in size) and several glass *tesserae* were found among the rubble; we don't know if they belong to the original site or if they are from somewhere else, although no mosaic scenes executed with glass *tesserae* were discovered. These mosaic pavements are very important in defining the architectural plan since there are no walls or other architectural elements on the site.[202]

Mosaic Pavement Themes

- The northern portico (which was discovered in Aleppo in 2008): It is an external frame that contains in its rhombus floral, geometric, and animal scenes against a background of white *tesserae*, and in each rhombus, there are different images of birds, fruits, crosses, a basket of fruits, and more that seem to belong to successive rows.[203]
- The southern portico: What remains of the mosaic pavements in this portico are simple parts of flora frames and parts of other themes within rhombuses, such as the cross executed with green *tesserae*.

[202] Ibid., 62.

[203] Fakhro, M 2008: 1.

- The theme of the mosaic of the southern room (*Diaconicon*): It is a central circle in the middle of the mosaic pavement surrounded by a simple frame, inside the circle, there is a Greek inscription, of which only five incomplete lines remain, this inscription was executed in the middle of the mosaic pavement on a background of white *tesserae*, within which the shape of a flower is distributed over the entire area of the pavement.

- The theme of the mosaic of the central nave: the entire parts of this portico have not been discovered, as several sondages have been made to find out the extensions of the mosaic pavement, where several separate mosaic parts have been discovered in the central and at the end of the nave, having geometric or plant themes. The most important finding in this nave is a mosaic directly adjacent to the portico, whose remaining parts consist of many beautiful frames executed with multicolored *tesserae* and composed of braids or plant leaves. (Fig. 130) The peculiarity of these remaining pieces is the presence of the hooves of an herbivore among the few pieces that are inside the frame, evidence that this is a mosaic with a distinct symbolic theme.[204]



A **B** **C**

Fig. 130. A). Greek inscription. B). North portico mosaic. C). Central nave mosaic. (Jbaee, M. Al-Taweel, M. Bouza, N. 2010: 1-5).

Analysis of the Technical and Physical Condition of the Mosaic

- The mosaic was executed with *tesserae* measuring 0.6 mm in the main themes and up to 1.5 cm in the frames in the background.
- The *tesserae* were made of limestone, glass, and multicolored marble, with *tesserae* in white, black, red, brick, pink, green, light green, light gray, yellow, and light yellow in the mosaic.

[204] Ibid., 2.

- The mosaic pavement at the site was damaged and stolen, and what was discovered did not exceed 30% of the total area of the entire mosaic pavement.
- There is a loss of *tesserae* in the center of the mosaic pavement, especially in the pavement discovered in 2008 by the Directorate of Antiquities of Aleppo inside the medal of the mosaic pavement that paved the floor of the room south of the apse. This distorted the inscription on the medal, and a large part of it was lost.
- Weakening the cohesion of the *tesserae* with the plaster layer is due to the presence of a layer of dust deposited under the *tesserae*.
- Damage to the surface of the *tesserae* in some areas.
- Damage is generally apparent on the edges of the mosaic.
- In some areas, there are deep cracks, especially in the mosaic pavement next to the apse in the central portico.[205] (Fig. 131)



A **B** **C**

Fig. 131. A). Loss of the tesserae. B). Deep cracks. C). Weak cohesion of the tesserae with the bedding layer. (Jbaee, M. Al-Taweel, M. Bouza, N. 2010: 1-5).

Mosaic Reinforcement

- Simple initial surface cleaning of the *tesserae*.
- Reinforcing all edges of the mosaic pavement with lime mortar and reinserting the detached tesserae in their proper place.

[205] Jbaee, M. Al-Taweel, M. Bouza, N. 2010: 1- 2.

- Re-installation of the detached parts of the base mortar layer involves removing the detached part, cleaning the background of the *tesserae*, and then putting it back in place with lime mortar.[206] (Fig. 132)



A **B** **C**

Fig. 132. A) Reinserting the detached tesserae in their proper place. B) Surface cleaning of the tesserae, the edges. C) Reinforcing the edges. (Jbaee, M. Al-Taweel, M. Bouza, N. 2010: 1-5).

Reburying the Mosaic Pavement

The mosaic pavement was reburied using a modern method of protection and preservation, as follows:

- Bags filled with soil were placed around the perimeter of the mosaic pavement to form a barrier to the sand layer.
- Laying a layer of Euphrates sand, after sifting it, with a thickness of about 20–30 cm.
- Laying fiber mesh over the sand layer, covering the mosaic pavement and the soil bags next to it.
- Laying a layer of soil with a thickness of about 30 cm.[207] (Fig. 133)



A **B** **C**

Fig. 133. A) A layer of soil over sand and fiber. B) Laying a fiber net over the sand layer. C)The sand layer. (Jbaee, M. Al-Taweel, M. Bouza, N. 2010: 1-5).

[206] Ibid., 3 - 4.

[207] Ibid., 5.

VI. MOSAIC PAVEMENT AT THE VILLAGE OF ʿUQLAT AL-BWYDIR

Geographical and Historical Overview

ʿUqlat al-Bwydr is located 70 km south of Aleppo and west of the village of al-Bwydr in Tell al-Ḍamān, 20 km south of Jabal al-Ḥoṣṣ. From an archaeological point of view, the hill under study is located 25 km north of the ruins of the archaeological site of al-ʾAndrīn and borders the region of Chālkis (Qannsrīn) to the west and Khanāsir to the east.[208] (Fig. 134)

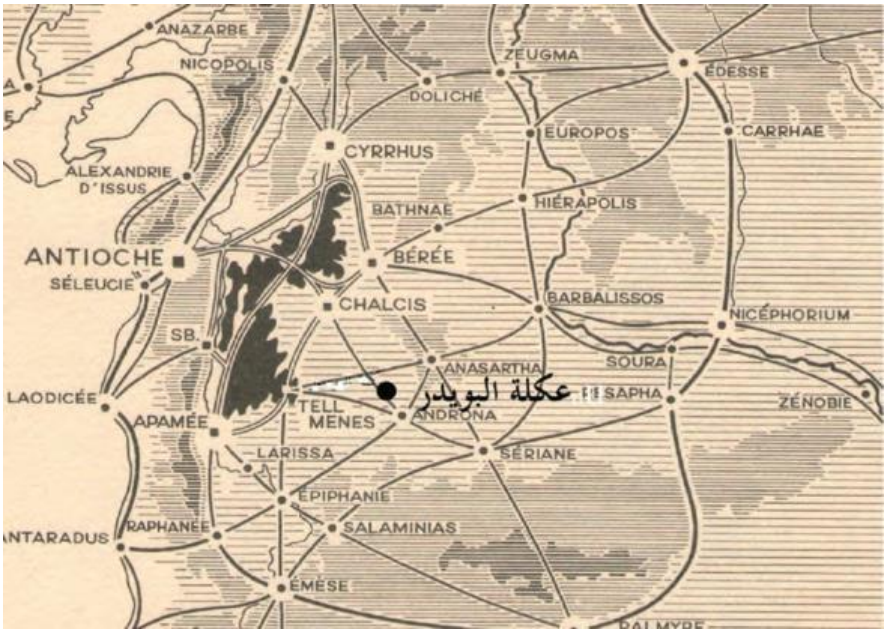


Fig. 134. The location of ʿUqlat al-Bwydr on the main roads during classical Eras. (Kanjou, Y. 2010:186).

Archaeologist *Bodhi Bar* drew attention to the area in his book "*The Borders of Chalkis*", but although he documented the site of al-ʾAndarīn, which is adjacent to the site of ʿUqlat al-Bwyadr, both he and German researcher *Peter Hazeh* did not notice the presence of churches in the area. The study conducted by Dr. Hamidou Hamadeh in the regions of al-ʾAndarīn and Jabal al-Ḥaṣṣ also did not mention this site. This region was classified as the first Arab geographical region "*Mar Mikhael the Great*", and the churches of the region flourished during the time of *Al-Harith Al-Ghassani*, who was a follower of the Monophysite doctrine. According to the Syriac historian, more than ninety churches were built with *Justinian's* support to ensure the alliance of the *Ghassanid Arabs* with him in his wars against the Persians and with the *Manathira Arabs*, because this region witnessed the

[208] Kanjou, Y 2010: 185.

most important battles of the sixth century between the *Ghassanid Arabs* and the *Manathira Arabs*, known as the Day of *Halima*, so the churches in the region differ from those in western Syria in that they follow the doctrine of creation without any doubt, and there is no doubt that the church discovered in ʿUqlat al-Bwyadr is related to the *Ghassanid Arabs* in al-ʾAndarīn, where ten churches were built in the city of al-ʾAndarīn during that time, and there is no doubt that the church belongs to the bishop of al-ʾAndarīn.[209]

Archaeological Excavation

Some archaeological monuments have been found on the natural hill (a large basalt column, a basalt stone with a triangular cross in a circle, ancient millstones, and various pottery fragments), all of which indicate the presence of important archaeological and architectural remains in the area that are still buried. The Directorate of Antiquities and Museums of Aleppo conducted numerous archaeological sondages to survey the area and discovered a basilica-style church with three aisles (Sondage C), an outer portico, and a straight apse separated by three columns on each side. The dimensions of the church with the external portico are 20 x 15 meters. The church also has a bema in the center of the building and three side rooms, two on the right and one on the left. This church dates back to the Byzantine period. As with the other sondages, no evidence of buildings or walls was discovered.

Church (Basilica) Layout

Main Central Nave

The dimensions of the central nave are about 20 x 12 meters; the floor is still present, except for the western wall, which is incomplete, so we do not know the location of the main western door of the church nor its shape. Some destruction was also discovered on the eastern side of the floor due to illegal archaeological excavations. The bema was discovered on the east side of the central nave; it is in direct connection with the sanctuary, and it was not noticed that there is a barrier between them here, perhaps because of the destruction that took place previously. (Fig. 135)

[209] Ibid., 186.



Fig. 135. General view of ʿUqlat al-Bwydr Church from the southwest corner, showing the southern portico, the nave, the columns, and the bema. (Kanjou, Y. 2010:187).

Northern Portico

The floor is preserved in good condition, and next to and parallel to the northern wall a whole series of stones in good condition were discovered, which served as seats. It is possible that these stones were not removed from their place because their shape and heavy weight prevented them from being used in later buildings.

Southern Portico

The floor is complete and in good condition. Two doors were discovered here, the first thought to be for men and the second for women. Also discovered was a row of stones along the south wall from the inside, which, as in the northern portico, extended adjacently to the west side of the church and also served as a seating area.

Southern External Portico

It is a rectangular hall that runs parallel to the church from the south side and measures 17 x 3.5 meters. At its southern end, there are bases for six small basalt columns. Only parts of four columns were found, with two bases and two capitals for two columns, one of which bears a Syriac inscription and a Syriac cross representing the word *Qchiisho*, meaning priest.

The floor of the portico is completely paved with basalt stone tiles and was probably added to the church at a later date.[210] (Fig. 136)

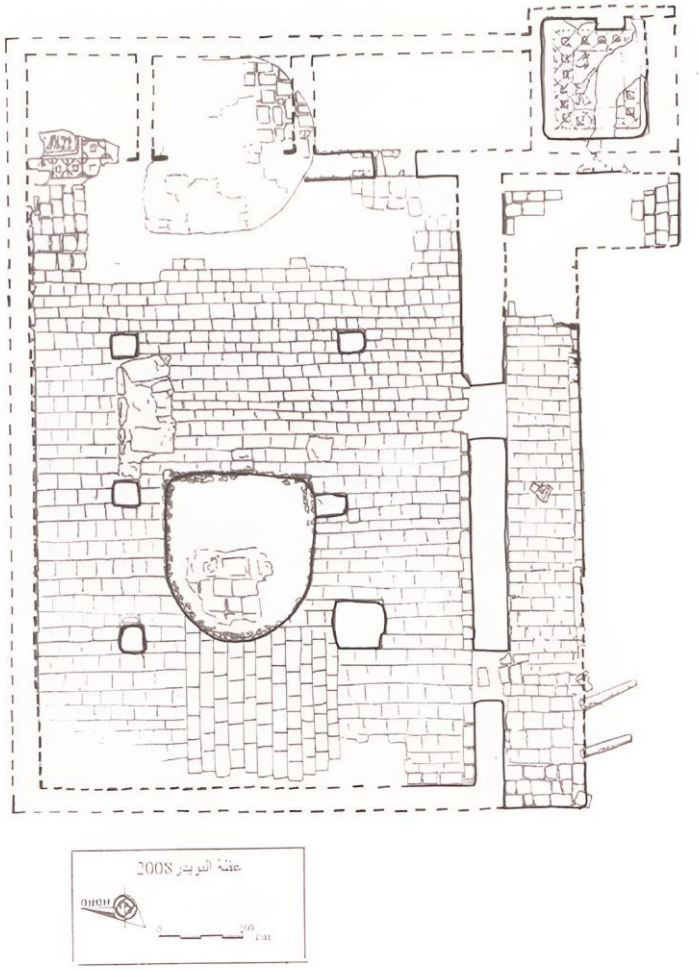


Fig. 136. An illustration of the complete floor of the ʿUqlat al-Bwyr church, along with the remnants of walls that were later dismantled for the church's construction. (Drawing by Fayez Ayyash. Kanjou, Y. 2010: 192).

Bema

The bema is considered one of the most important features of church architecture in northern Syria. The bema discovered in this church is an architectural feature in the center of the nave, which is semicircular, 3 meters in diameter, and built of white limestone on two levels, the lower being larger than the upper. The bema faces west, that is, opposite to the direction of the church, as is the case in most Syriac churches of that period. On the eastern side, that is, the non-circular area, there is a staircase or entrance to the bema. It consists of

[210] Ibid., 187.

two basalt steps with a height of about 50 cm, and it is possible that there were bases for four lime columns on the surface of the bema, which is evident from the remains of these bases. (Fig. 137) On the eastern side of the bema, numerous fragments of artistic geometric motifs were discovered, which may have decorated the walls of the bema.[211] (Fig. 138)



Fig. 137. The bema is centrally located, with the 2nd and 3rd pillars on the northern. Among them a deteriorated wall adorned with artistic decorations on the interior, the southwestern door, and stone seating parallel to the wall. (Kanjou, Y. 2010: 188).



Fig. 138. The left entrance of the church, the church floor, and the external portico with basalt columns. (Kanjou, Y. 2010: 188).

Church Walls:

The walls consist of two rows of basalt stones (the surface of each stone measures 20 x 60 cm), are rectangular in shape, and are carved on three sides. White coloured lime plaster was applied between them. All the stones used to build the walls were stolen a long time ago; perhaps the population of the region took them to build their houses later, as was the case in the areas of the Limestone Massif, except for a wall in the eastern part of the church, through which the layout of the church and the size of the stones were known. The columns supporting the roof were built with the same stones that were used for the walls (basalt). Each column was built with four rectangular stones to give it a square shape, between which the space was confined and small stone fragments were placed. The remains

[211] Ibid., 189.

of the bases of these columns are still present in the northern part. They have a square shape (70 x 70 cm), and the distance between each column is 3 meters.[212]

Church Pavement

The pavement of the church was completely paved with rectangular basalt stone tiles measuring about 30 x 60 cm. They are carefully polished, and the entire floor is still there except for a small section in the western part of the church. No mortar was used to pave the floor. Only flat basalt stones were used. Soft red soil was applied to the floor along with some basalt stone fragments to support the basalt tiles and make them flat. The stone tiles were chiseled flat from the top, while they were left natural at the bottom. During archaeological sondages inside the church floor, another pavement was discovered that is older than the floor paved with basalt stones, i.e., the limestone tiles used on the entire church pavement. It was built directly on the natural rock with soft soil on the floor, as in the case of the pavement basalt stone tiles. Also, no mortar was observed to connect the limestone tiles, each of which was about 40 x 30 cm by the surface. (Fig. 139)



Fig. 139. The first, "oldest" church floor was constructed from limestone atop natural rock and served as the church's flooring prior to being paved with basalt stones. (Kanjou, Y. 2010: 188).

[212] Ibid., 190.

Sanctuary

The floor of the apse of the church "*Sanctuary*" was paved with square limestone tiles, most of which were destroyed by illegal excavations. It is about 50 cm higher than the floor of the church. It can be climbed by two basalt steps, which are also ruined. Various pieces of marble were found on the floor, and it is known that the eastern wall of the apse and the church is built of small basalt stones (one row of this wall is still preserved). The apse is of the straight type.

Left Side Room(*Diaconicon*)

On the left side, a small room with ruined walls and a mosaic pavement was discovered, destroyed by illegal excavations. Its dimensions are 3,5 x 2,5 meters. It consists of small *tesserae* (1 x 1 cm) in different colors (black, white, and red) intermingled. Various geometric motifs (sinuous circles, squares) have a geometric frame made of semicircles connected in a straight line. This frame surrounds the main scene in the center, that is, in the destroyed area, where the shape of a four-legged animal is preserved and the head side was previously damaged and looted.[213]

Above this pavement, a slightly vandalized rectangular stone (tile) made of white limestone was discovered. On it were carved various geometric motifs (small, successive squares forming a cross). Above these motifs was a Greek inscription consisting of 12 letters. During the excavation of this room, numerous white mortar fragments in various bright colors on the top were found among the rubble (black, blue, yellow, and red), which indicate the existence of wall paintings that decorated the northern wall of this room, located on the left of the apse, although it is not known what the former compositions represent.

First Right Side Room (*Martyrum*)

It is directly connected to the apse; its dimensions are 2.80 x 5 m. Nothing was discovered in it. It is an unpaved room with an earthen floor, which differs from the adjacent rooms and porticoes in terms of interest in the floor. The sarcophagus, which will be discussed later, may have been found in this room during the illegal excavations mentioned above, as it was lifted and kept in the National Museum of Aleppo.

[213] Ibid., 191.

Second Right Side Room (*Baptistery*)

It is located in the southeast corner of the church, opposite the southern portico, immediately after the right room (*Martyrum*). It was paved with mosaic, its dimensions are 280 x 320 cm, and it is made of stone *tesserae*, whose dimensions are 2 x 2 cm from the surface, which is larger than the *tesserae* of the northern mosaic pavement, and they are of different colors (white - black-red,) and divided into two parts. A varied geometric frame occupies a large part of the mosaic pavement, around a central scene (the second part), in the center of which there is a representation of a bird that resembles a peacock, next to it there is an unknown symbol that represents the main scene of the mosaic pavement, the features of which were previously disfigured in the place where there is an ancient hole that occupies the central part of the mosaic pavement, including the head of the bird.[214] (Fig. 140)

On the eastern side of the mosaic pavement, the remains of a damaged basin were discovered, which may have been a baptismal site. The mosaic pavement appears to be lower than the rest of the floors, suggesting that it may belong to the earliest stage of the church. (Fig. 141)



Fig. 140. Mosaic pavement of the southern room of the church. showing signs of vandalism in the centre. (Kanjou, Y. 2010: 189).

[214] Ibid., 192- 193.

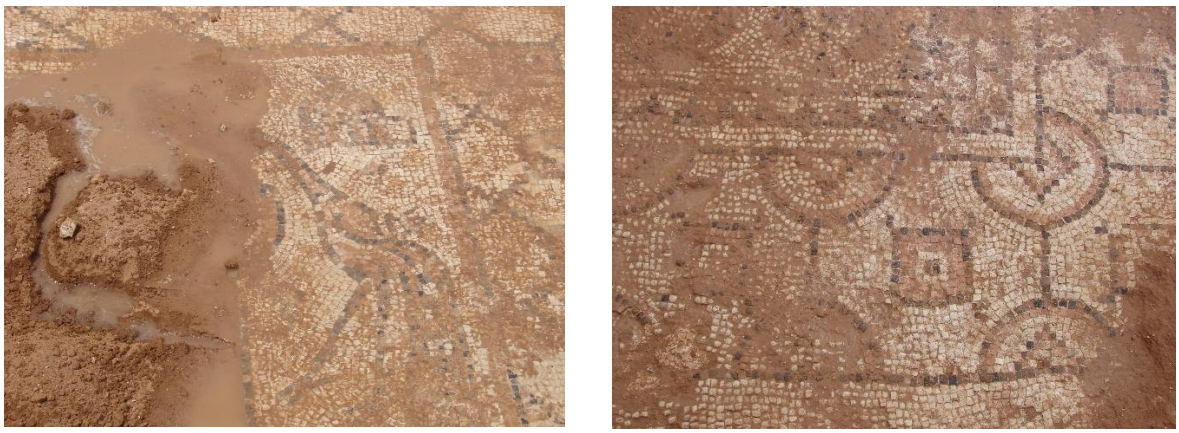


Fig. 141. Geometric and floral motifs on the mosaics of the southern room. (Photo by Kanjou, Y. 2007).

Study of Artistic Decorations

At the northeastern end of the Bema, various geometric and plant motifs as well as cross shapes were discovered carved in white limestones. A limestone wall about 150 cm high on the east side was destroyed and damaged and contained various decorations consisting of a series of limestone blocks with geometric and various plant motifs on the inside. This wall was located between the second and third columns separating the left portico from the central portico east of the bema, so we could not know the actual function of the wall.[215] (Fig. 142)

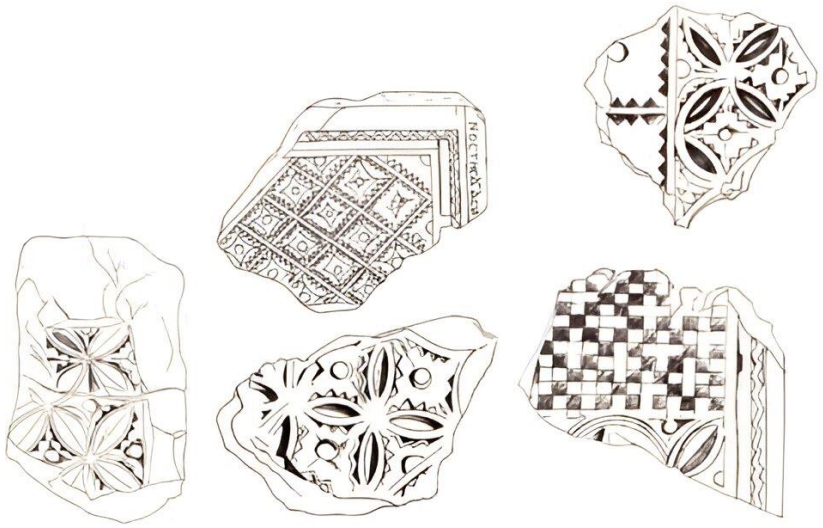


Fig. 142. A drawing of the artistic decorations that were engraved on limestone, where the cross appears in all decorations in an artistic style. (Kanjou, Y. 2010: 190).

[215] Fakhro, M., & Dabty, Y 2006: 1-12.

Inscriptions

Only two words were discovered; the first in the Syriac language is the word *Qchiisho*, which means priest. It was discovered in the external portico of the church and is engraved on the capital of a basalt column, suggesting that it may have been written in the last periods of the church's history. The second word was discovered in the right room and is engraved on a rectangular limestone block with religious motifs. The inscription is located on one of the sides of the stone, is written in Latin, and consists of 12 letters **(---- [NOCTHCAGIACH]).**[216] (Fig. 143)



Fig. 143. A column capital has an inscription of one word in the Syriac. The limestone stone has rectangular artistic decorations and an inscription of one word in Latin. (Kanjou, Y. 2010: 191).

The Sarcophagus

A sarcophagus was discovered in the eastern part of the church and is currently kept in the outer courtyard of the National Museum of Aleppo. It is made of basalt stone in the shape of a camel. There is a decoration in the shape of a cross on the front. This decoration is in each corner, and in the center there is a rectangle. It could have been found in the first right room (*Martyrum*) on the side of the apse. No artifacts were found in the church, which indicates that it was abandoned and the inhabitants of the region took all the objects from the church. An adult human skull was found on the floor of the outer portico and may belong to the basalt sarcophagus.[217] (Fig. 144)

[216] Dabty, Y 2007: 83.

[217] Kanjou, Y 2010: 193.



Fig. 144. Basalt Stone Sarcophagus. (Photo by Alhaj Ali, F. 2018).

Chronological Analysis of ʿUqlat al-Bwydr Mosaic Pavement

According to the plan of the church and in comparison with the plans of the churches in the northern Syrian region, the construction date of the church can be dated to the sixth century AD. It is similar in plan to the church of Taqla and the church of Bāqraha Al-Sharqiya, which are located northwest of Aleppo.[218]

[218] Fakhro, M., & Dabty, Y 2006: 12.

Conclusion

The discovered church resembles in its plan a group of churches spread over the limestone massif in northern Syria. Sixth-century churches in this region consist of the three porticoes, the bema, the apse, and the rooms on either side of the apse. All these architectural elements were found in the church discovered in ʿUqlat al-Bwyadir. The bema was previously discovered in more than 30 Syrian churches, most of them in northern Syria. It was mainly built of stones and decorated with ornaments. There are many opinions about the function of this architectural element, but it is likely that it is the place where some religious lessons are held.

Among the most important churches where the bema was discovered are the *Julianus* Church in Brād, Khirbat Shams, and al-Rusāfa. The floors were paved with basalt stones, which are commonly used in churches. Churches whose floors were paved with stone tiles include the churches of Jirāda and Kāluta. The side rooms are paved with mosaics, which is due to the importance and special function of these rooms. The geometric decorations discovered in the church are among the features of Christian art of the sixth century AD and were widespread in northern Syria, including the site of the monastery of Qinnasrīn. By the presence of two pavements of the church discovered in ʿUqlat al-Bwyadr, it can be imagined that the church was built in two periods. The first period, defined by the limestone pavement, might have had one church hall, and the wall with decorations between the second and third columns on the left side of the church belongs to this period. In the second period, the church developed into the three-nave basilica style and took the form described before.

The apse was of the straight type, which spread in the northern region of Syria between *Apamea*, Antioch, and Aleppo; thus, the church became the type of basilica with three naves, a straight apse, and a lateral portico. An example of this is the church of *St. Sergius* in the monastery of Qita and Dāhis al-Gharbiya. The second right room "*Baptistery*": a similar floor plan is found in the church of Bhyu and in the church of Bāmūqa, and this is a feature that distinguishes the churches of the sixth century. The walls were probably built of double walls of basalt stone without the use of bricks, as in the churches of Krātin and al-ʾAndrīn. These churches can be considered to have three layers of walls since the wide space between the stones was filled with crushed stones, broken bricks, and mortar fragments.

From the foregoing we can conclude: This church is distinguished by its location in the northeastern region of Syria, in the governorate of Aleppo. By its distinctive architecture, especially by the presence of the bema is characterized the ancient Syrian churches in the fifth and sixth centuries AD. Also typical to the Syrian north, and thus the church forms a link between the churches in northern Syria and the churches in the eastern region of Syria. The church also highlights the role that the southeastern region of Aleppo played in the Byzantine period, as it is located between al-ʾAndarīn in the south (20 km), Khanāṣir in the east (50 km), Chālkis "*Qinnsrīn*" in the west (40 km), and Aleppo in the north (65 km), which leads to further studies to understand its importance, the nature of its population, and its role in different periods, especially in the Byzantine period. It is certain that the discovered church served as one of the resting places on the way to the city of al-ʾAndrīn and was built as part of the Byzantine strategy aimed at securing the *Ghassanid Arabs* alliance against the *Manathira Arabs* and Persians. Visiting the sites in the vicinity of ʿUqlat al-Bwydr revealed numerous archaeological sites whose walls are still visible on the surface and date back to the Byzantine period, indicating an increase in the number of villages during this period, which may be associated with the city of al-ʾAndrīn.

VII. MOSAIC PAVEMENT IN THE VILLAGE OF ZAMKA

Preface

The archaeological discoveries of the last century highlight Syria's richness in mosaics. The author aims to analyze the Byzantine mosaics unearthed in 2011 in the village of Zamka, situated northeast of Aleppo, 13 km away from al-Bāb city. The excavation was conducted by a national archaeological mission of the Directorate of Antiquities and the Museum of Aleppo. It led to the unveiling of two mosaic pavements featuring various motifs, including geometric and ornamental elements, as well as vegetal and animal scenes.

The first pavement, measuring approximately 770 x 526 cm, was excavated under conditions that left a large part of it covered. Only two scenes could be identified, as other sections were damaged due to the construction of modern buildings. The second pavement under discussion was discovered in the adjacent house, but only the first scene was readable. The mosaic pavement comprised small, differently colored stone *tesserae*, predominantly exhibiting symmetrical geometric features.

Geographical and Historical Overview

Zamka is a farm situated in the central high plateau of Aleppo, adjacent to the village of Tarḥine, within the al-Bāb zone of the Aleppo Governorate.

Historical sources point to the presence of a significant Syriac monastery known as Deir Ḥabib, attributed to Muslima bin Ḥabib Al-Fihri[219]. This monastery is located northwest of Tell Buṭnān, on the northeastern slope of Jabal al-Deir, along the bank of a valley that extends in a northeastern direction around the tributary of the al-Dzahab River. It is approximately 50 km from the city of Aleppo. (Fig. 145)



Fig. 145. Map of Syria showing the location of Zamka (source: Google Earth).

The houses in Zamka village are constructed of mudstone and have flat roofs. The village is connected to the city of al-Bāb by a paved road[220]. It is approximately 13 km from al-Bāb city, towards the north-east. The city of al-Bāb is considered one of the strategic cities in the eastern countryside of Aleppo, covering an area of 30 km. The city is approximately 30 km away from the southern borders of Turkey and is administratively

[219] Zakariya-Ahmad, W 1984: 214.

[220] Ṭulās, M 1990: 561.

divided into several regions: the northern, western, southern region, and the old town area, including numerous residential neighborhoods.[221]

The first mosaic pavement was discovered in the northwestern corner of a citizen's house in the village of Zamka. It is situated next to the northern wall and extends from east to west, featuring two scenes framed by inner and outer frames. The second mosaic pavement was found in the house adjacent to the first one on the west side, serving as an extension of the initial mosaic. The homeowner, while digging foundations for a new house, revealed the location of the discovery. Following a visit and inspection of the site, a national mission was formed by the Directorate of Antiquities and Museums of Aleppo to conduct rescue excavations. The excavation team included Dr. Youssef Kanjou, archaeologist Adnan Al-Muhammad, and the author, archaeologist Firas Al-Haj Ali.[222]

The city of al-Bāb has deep roots in ancient history, with historical evidence pointing to its origin dating back to the Roman period. Many travelers and historians have mentioned the city in their books. According to most sources, the city was conquered during the Islamic rule in the year 638 AD, under the leadership of ʿUmar Ibn al-Khaṭṭāb, following the conquest of Aleppo by Abu ʿUbaidah ʿĀmer Ibn al-Jarrāḥ.[223]

The city boasts numerous extinct underground water channels, dating back to the Roman period. A hill on its northern side, known as "Tell Buṭnān," conceals various artifacts, including pieces made of pottery and other archaeological finds from Aramaic and Hittite periods.

The old city's houses are distinctive for being constructed of mud and stone. Additionally, the city features an ancient covered market divided into four sections: the eastern, the southern, the western and the northern market. What sets this complex apart is its old urban design.

In the early Islamic periods, it was smaller than the town of Bizāʿa, which is approximately 7 km away from it to the east. However, starting from the al-Zankī era, it began to be mentioned as larger than it was in the previous periods. [224]

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[221] Othman, N 2009: 340.

[222] Kanjou, Y. Alhaj Ali, F 2011: 1 - 5.

[223] Othman, N 2009: 345.

[224] Ibn Shaddād, al-Aʿlāq al-khatira (Damascus, 1991): 124.

This indicates a significant increase in the buildings of al-Bāb city. al-ʾAtābik Ṭaghril al-Ẓāhirī constructed a khan for travelers and a school for the companions of Abu Íanifa. The city of al-Bāb was renowned for its abundance of water and rich groves, boasting two springs of water and the river of al-Dzahab flowing through it. However, later on, all these water resources dried out.[225]

Archaeological Excavations

The excavations commenced when the *tessellated* pavement was accidentally uncovered during construction work in the house. The excavation efforts expanded towards the western and eastern directions, leading to the discovery of two mosaic pavements. The first pavement measures approximately 526 x 700 cm, with a portion still unexcavated as it extends beneath the building. Four scenes were identified in the discovered mosaic pavement, although two of them were damaged by the construction of modern buildings. Subsequently, sondages were conducted in the neighboring house on the western side, revealing an extension of the mosaic pavement. The second mosaic pavement measures approximately 400 x 300 cm, as determined by sondages executed on the north and south sides, with the mosaic initially found only on the southern side. Upon completion of excavation works, the mosaic underwent graphic and photo documentation after surface cleaning.[226]

In the final stage, the mosaic was carefully lifted from its original site and transferred to the National Museum of Aleppo, where it was handed over to the Curator of the Classical Museum. Unfortunately, the sections are in poor condition as they were stored in the mosaic section of the National Museum of Aleppo without any treatment. Restoration will be undertaken, and the mosaics will be exhibited in the museum halls once the necessary conditions are in place.

Description of the First Mosaic Pavement

The discovered section consists of two scenes:

The first scene located in the western part of the mosaic pavement, depicting animal and plant motifs arranged in three rows. This composition is enclosed by a red frame, and the scene is oriented from west to east:

[225] Othman, N 2009: 345.

[226] Kanjou, Y. Alhaj Ali, F 2011: 1 - 5.

- Only the head of an animal, possibly a bull, is visible in the center. In the southern and northern sections, there are depictions of plant buds, while the remainder of the scene is entirely ruined. (Fig. 146)



Fig. 146. Bullhead in the centre of the first scene. (Photo by Kanjou, Y. Alhaj-Ali, F. 2011).

- In the center, two birds (peahens) facing each other are depicted in a walking position. These birds have long legs, large bodies, and short tails. Between them, grapevines with leaves and two grape clusters are portrayed. On the sides (to the right and left of the birds), two grapevines with clusters of grapes are also present, albeit partially destroyed from above.[227] (Fig. 147) The peacock symbolizes eternity and rebirth, serving as a symbol of hope.[228] The artists often represented peacocks as a symbol of eternity, and even since the Christian era, as a symbol of the resurrection and immortality. Before Christianity, it was believed that the meat of the peacock was not subject to rotting.[229]

[227] Kanjou, Y. Alhaj Ali, F 2011: 1 - 5.

[228] Gharib, A 2009: 183-191.

[229] Ibid., 2009: 183-191.



Fig. 147. Two female peacocks facing each other in the centre, both in a walking position. (Photo by Kanjou, Y. Alhaj-Ali, F. 2011).

In Graeco-Roman art, grapevines are often depicted with or without bunches, symbolizing the association with Dionysus-Bacchus.[230] Christians adopted this symbolism.

The scenes depict the vine with its trunks laden with bunches and grape leaves holding symbolic significance, as mentioned in the texts of the Old Testament (Psalm 80, verses 8-14). Here, the vine symbolizes the people of God, signifying the kingdom of God and Jesus himself, emphasizing his close relationship with believers. The vine plant is also referenced in the New Testament verses of the Bible to symbolize the Lord Christ for early Christians, as it embodies Christ (John's Gospel, chapter 15, verses 1-6).[231]

There is also a bird on the left side, a dove, facing towards the north (towards the frame of the mosaic pavement).[232] In Christian art from ancient ecclesiastical periods, the dove is frequently depicted as a symbol of the Holy Spirit. Moreover, the dove symbolizes peace, tracing its significance back to the biblical story of Noah and

[230] Ibid., 2009: 183-191.

[231] Abdallah, K 2014: 307.

[232] Kanjou, Y. Alhaj Ali, F 2011: 1 - 5.

the Flood, where the dove, carrying an olive branch in its beak, served as a messenger of peace. Christians adopted the dove as a symbol to signify the Holy Spirit personally. It also represents the Christian soul, not merely the human soul, but one indwelt by the Holy Spirit. Particularly, it symbolizes the soul freed from the struggles of the flesh and entered into rest and glory. [233] (Fig. 148)



Fig. 148. A bird on the left side, possibly a dove, is depicted looking towards the right from the mosaic pavement frame. (Photo by Kanjou, Y. Alhaj Ali, F. 2011).

- The third row displays two opposing animals separated by four plant buds. The central motif is an open flower. On the right, there is a depiction of a lion standing on its hind legs with an open mouth, accompanied by four plant buds at the bottom. On the left, a bull is portrayed in a standing position, raising its head.[234] (Fig. 149) The bull serves as a sacrificial symbol, especially during the Christian era, representing fertility and strength. This symbolism was particularly prominent in the East during the Roman age.[235] The lion, on the other hand, carries rich symbolism, embodying strength, courage, the sun, eternity, and time. Additionally, in various contexts, the

[233] Syring, P 1992: 189.

[234] Kanjou, Y. Alhaj Ali, F 2011: 1 - 5.

[235] Syring, P. 1992: 86.

lion signifies vitality and protective power. In the Christian tradition, it may also carry connotations associated with Christ.[236]

In many Eastern countries, dating back to ancient times, the lion has been recognized for its protective role. The perceived magical power of these lions was believed to ward off evil forces, whether human or divine, preventing their entry into temples or palaces.[237]

These scenes depict predators and peaceful animals coexisting in a harmonious setting. In this instance, a predator (lion) and an herbivore (bull) are portrayed, separated by four plant buds.[238] When examining the scene from the Zamka mosaic, it can be observed that these animals collectively create an idyllic representation of an earthly paradise. The choice to depict predators and herbivores in a harmonious environment. The scene evokes passages from the Bible describing the earthly paradise in the second part of the Old Testament, specifically in the Book of Isaiah. This is mentioned in Isaiah (11:6-9), where it speaks of a period of peace and harmony where predators and herbivores live together peacefully. This imagery depicts the period of the earthly paradise described by the prophet Isaiah.[239]

There are additional examples from Syria that allude to the kingdom of peace in the earthly paradise. One such mosaic is exhibited in the Hama Museum, dating back to 490-489 AD, as indicated by a dedicatory Greek inscription,[240] the mosaic of Firkia and the mosaic of al-Hawwat,[241] as well as the mosaic of Girmil.[242] Additionally, there is the 'Mosaic of the Paradise' in Madaba in Jordan.[243] Hence, we discern that the interpretation of these scenes is a figurative representation of the earthly paradise, where predators and herbivores coexist in peace—a peace promised to the faithful by

[236] Ibid., 86.

[237] Gharib, A 2009: 183-191.

[238] Balty, J 1995 132.

[239] Kanjou, Y. Alhaj Ali, F 2011: 1 - 5.

[240] Abdallah, K 2014: 203.

[241] Balty, J 1977 : 132.

[242] Nassar, M. al-Bashaireh, K. Harahsheh, R., and Hwari, W 2020: 410–424.

[243] Piccirillo, M 1993: 383.

Christ. This mosaic also incorporates elements of paradise, including fruit trees and flowers, plant buds are in every corner of the scene from the eastern side.[244]



Fig. 149. A bull on the left and a lion on the right, separated by four plant buds. (Photo by Kanjou, Y. Alhaj Ali, F. 2011).

The second scene

This scene was previously vandalized. It displays plants and animal figures on several rows, framed by a decorative multi-colored framework, arranged from west to east:
In the first row of the second scene, two animals face each other with a palm tree between them, displaying various colors. However, the scene is not complete, and the animals are significantly damaged. On the right side, there is possibly a bull depicted in a standing position (only a part of the head is present), and on the left, a bull in a walking position, of which only the back remains.[245] (Fig. 150)

The symbolism of the palm dates back to one of the earliest cultivated plants and, in pre-Christian ages such as the Greeks and Romans, it evolved into a symbol of victory. Early Christians later adopted it as a symbol of the believers' triumph over the enemies of the spirit. The palm came to represent the victory of the soul over the body in the spiritual

[244] Abdallah, K 2016: 1–9.

[245] Kanjou, Y. Alhaj Ali, F 2011: 1 - 5.

battle waged against it. This symbolism was particularly relevant to the martyrs who had conquered the spiritual adversaries of humankind.

The general significance of the palm in early Christian monuments was modified based on its association with other symbols, such as the Christogram, the Fish, and the Good Shepherd. On some later monuments, the palm is portrayed as an ornament that separates two scenes.[246] Certainly, the palm tree holds significance in the Bible, mentioned three times:

1. *"And ye shall take you on the first day the boughs of goodly trees, branches of palm trees, and the boughs of thick trees, and willows of the brook; and ye shall rejoice before the Lord your God seven days"* (Leviticus 23:40).

2. *"And that they should publish and proclaim in all their cities, and in Jerusalem, saying, go forth unto the mount, and fetch olive branches, and pine branches, and myrtle branches, and palm branches, and branches of thick trees, to make booths, as it is written"* (Nehemiah 8:15).

3. *"They took branches of palm trees, and went forth to meet him, and cried, Hosanna: Blessed is the King of Israel that cometh in the name of the Lord"* (John 12:13). [247]

These passages highlight the use of palm branches in various contexts, including celebrations, festivals, and the welcoming of Jesus during his entry into Jerusalem. As mentioned previously, the bull serves as a sacrificial symbol, especially during the Christian era.

[246] Hassett, M. 1911: https://rb.gy/5ueh8n . (23.03.2024)

[247] Nassar, M. al-Bashaireh, K. Harahsheh, R., and Hwari, W 2020: 410–424.



Fig. 150. Two damaged bull figures around a palm tree. (Photo by Kanjou, Y. Alhaj Ali, F. 2011).

In the second scene, two birds stand opposite each other, with a four-bud plant between them; however, all parts of the scene have been damaged.

In the second row of the second scene, an unidentifiable bird is depicted. The mosaic extends towards the east under the foundations of the rooms of the house where the mosaic pavement was discovered. [248]

Mosaic Frame

The mosaic features two frames: an outer frame and an inner frame:

Outer frame: The outer frame exhibits intersecting geometric shapes, including hexagons, squares, and triangles alternating in white and yellow on the left side. On the right side, the *tesserae* colors alternate between brown (hexagons and triangles), white (squares), and light green. An additional frame executed with white stone *tesserae* adds an extra layer to the design.

Inner frame: Each scene is framed by a distinct inner frame. The frame of the first scene is comprised of intersecting circles, forming a flower-like shape with four petals. In the center of each circle, there is a geometric shape. This frame is surrounded by a white band. (Fig. 151)

[248] Kanjou, Y. Alhaj Ali, F 2011: 1 - 5.

Second scene frame: The frame for the second scene consists of an intersecting angular chain-like interlace motif, creating squares. In the center of each square, there is a geometric shape with various colors such as black, red, white, and yellow. This frame is surrounded by a decorative ribbon featuring various colors like light black, yellow, and white.[249] (Fig. 152)



Fig. 151. The outer frame and the inner frame of the first scene. (Photo by Kanjou, Y. Alhaj Ali, F. 2011).



Fig. 152. The outer frame and the inner frame of the second scene. (Photo by Kanjou, Y. Alhaj Ali, F. 2011).

[249] Ibid. 2011: 1 - 5.

Description of the Second Mosaic Pavement

The second mosaic pavement in the adjacent house, measuring 3 meters in length and 2 meters in width, showcases a motif of tangent scales resembling fish scales. Each scale is adorned with a flower inside, featuring multiple colors. On the right side, the scales are framed by two geometric bands, while the west and north sides are bordered by a single frame. The total length of the mosaic is not precisely known due to its extension below the modern house.[250] (Fig. 153)



Fig. 153 The second mosaic pavement features a design of tangent scales. (Photo by Kanjou, Y. Alhaj Ali, F. 2011).

Technique and Style

The full excavation and determination of the total dimensions of the second mosaic pavement, as well as the original purpose of the room it covered, and the entrance into the room, have proven challenging due to extensive damage and the extension of the mosaics under modern buildings. The approximate width of the mosaic pavement is 5 meters, with an eastward orientation. The mosaic is exclusively crafted from stone *tesserae*, with no presence of glass or ceramic *tesserae*/brick among the raw materials. Various colors, including white, red, green, yellow, brown, and black, were identified in the *tesserae*.

[250] Ibid. A preliminary report, 1- 5.

The general size of the *tesserae* surfaces measures around 9-10 mm, with similar dimensions observed in both the frames and central scenes. Based on available information and comparisons with other mosaics discovered in Tell Bajer and al-Nabgha[251], it is believed that the mosaics date back to the end of the 5th century to the beginning of the 6th century AD, corresponding to the Byzantine era.

In our examination of the ground layers and stratigraphy conducted through a sondage, we have identified five layers, as follows:

- Layer of *Tesserae*. This layer comprises the actual mosaic *tesserae*.
- *Supranucleus*/bedding layer: The supranucleus or bedding layer consists of soft lime mortar in which the mosaic *tesserae* are embedded
- *Nucleus*: a layer of mortar mixed with small grains of sand.
- *Rudus*: a layer of mortar mixed with grains of soft sand and relatively large pebbles.
- *Statumen*: The *statumen* layer is primarily composed of large stones. In most cases, the *statumen* lacks binding material or lime. (Fig. 154)

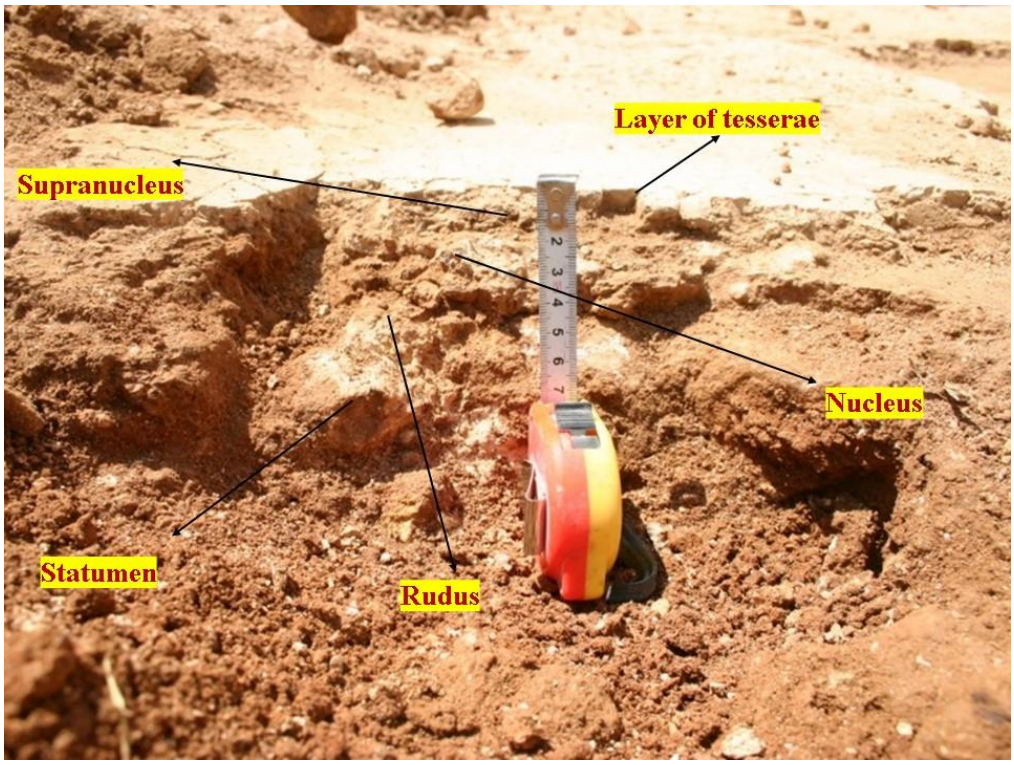


Fig. 154. The stratigraphy of layers on Zamka mosaic, first mosaic pavement. (Photo by Alhaj Ali, F. 2011).

[251] Kanjou, Y. Alhaj Ali, F 2012: 239-252.

Mosaic Pavement Problems

The mosaic pavement faces several issues:

1. **Severe Damage:** The mosaic pavement has suffered extensive damage.
2. **Large *Lacunae* in the Second Scene:** There are significant gaps or voids in the second scene of the first mosaic pavement.
3. **Small *Lacunae* in the First Scene:** Small gaps or voids are dispersed in the parts of the first scene of the first mosaic pavement.
4. **Burning Marks:** Some parts of the first scene of the first mosaic pavement exhibit burning marks, altered surface character.
5. **Loss of *Tesserae* in the Second Scene:** There is a loss of mosaic *tesserae* in the second scene of the first mosaic pavement.[252]

Mosaic Pavement Lifting Works

The process of detaching the mosaic pavement involved the following steps:

1. **Mechanical Cleaning:** Cleaning the mosaic pavement with a brush and water to remove sediments and calcifications.
2. **Photo Documentation:** Complete photo documentation of the mosaic pavement before initiating the lifting process.
3. **Sketching and Extraction Lines:** Sketching the mosaic pavement and determining the extraction lines to guide the removal.
4. **Edge Release:** Releasing the edges of the mosaic pavement to facilitate the removal process.
5. **Documentation at Each Stage:** Documenting all stages of the removal process for comprehensive records.
6. **Facing Preparation:** Laying the canvas both longitudinally and crosswise using glue.
7. **Drawing Cutting Lines:** Drawing cutting lines on the canvas to guide the sectioning of the mosaic pavement.
8. **Sectioned Lifting:** Lifting the mosaic pavement in sections after they have been cut.
9. Packaging and Transfer: Placing the lifted mosaic sections in a wooden box for safekeeping and transporting them to the National Museum of Aleppo. The sections were then delivered to the curator of the Classical Museum.[253]

[252] Jbaee, M: *A preliminary report* (Damascus, 2011).

Conclusion

In conclusion, the mosaic pavement unearthed in the village of Zamka can be dated to the historical period spanning from the late fifth century to the early sixth century AD, corresponding to the Byzantine era. This attribution is based on available information and comparisons with other mosaics found in locations such as Tell Bājr and al-Nabgha, considering patterns, colors, artistic themes, production techniques, and materials used in mosaic creation, among other factors.

Despite considerable damage and the presence of modern structures, which have hindered a thorough excavation and a full revelation of the mosaic's true extent, it is evident that the mosaic extends beneath certain rooms, particularly in the western section. As a result, the precise dimensions of the mosaic remain uncertain. Nonetheless, existing remnants and floor evidence confirm that the mosaic's length exceeds 19 meters, with the width clearly established at 5 meters for the initial portico.

VIII. MOSAIC PAVEMENT IN THE VILLAGE OF TELL BĀJR

The mosaic pavement was discovered by coincidence, while the owners of the house in which the mosaic pavement was located were doing some dug work, at a depth of 30-50 cm. The excavations finally resulted in the discovery of a basilica-type church, its dimensions are approximately 25 x 15 m, and it consists of an apse towards the east, two side porticos, and the main hall (nave), the remains of six column bases are separating the two side porticos and the main hall (nave), and *Bema* was discovered in the center of the western end of the main courtyard. The church floor is paved with mosaics, where the main scene in the nave was stolen in the past. [254]

Location And Discovery

Tell Bājr is located south of Aleppo city, on the left side of the international highway connecting Aleppo and Damascus, to South of the city of al-ʿĪs (Khālikis, Qinnsrīn town), 5 km, near the end of the course of the Quwyq River in Sabkhat al-Matakh, one of the important archaeological hills registered among the records of the Ministry of Culture in the southern region of Aleppo. (Fig. 155) Archaeological excavations finally resulted from

[253]. Ibid. *A preliminary report* (Damascus, 2011).

[254] Kanjou, Y. Alhaj Ali, F 2012: 3.

discovering a basilica-type church, measuring approximately 15 x 25 m. It consists of an apse towards the east, two side porticos, and the main nave. Apse is located at the eastern end of the nave, the porticos and the nave are separated by the remains of the bases of six columns, and the Bema was discovered in the middle of the western end of the nave.[255] (Fig. 156)



Fig. 155. A Map of Syria locating Tell Bājr Village. (Google Earth completed by Alhaj Ali, F. 2020)

[255] Kanjou, Y. Alhaj Ali, F 2012: 239.

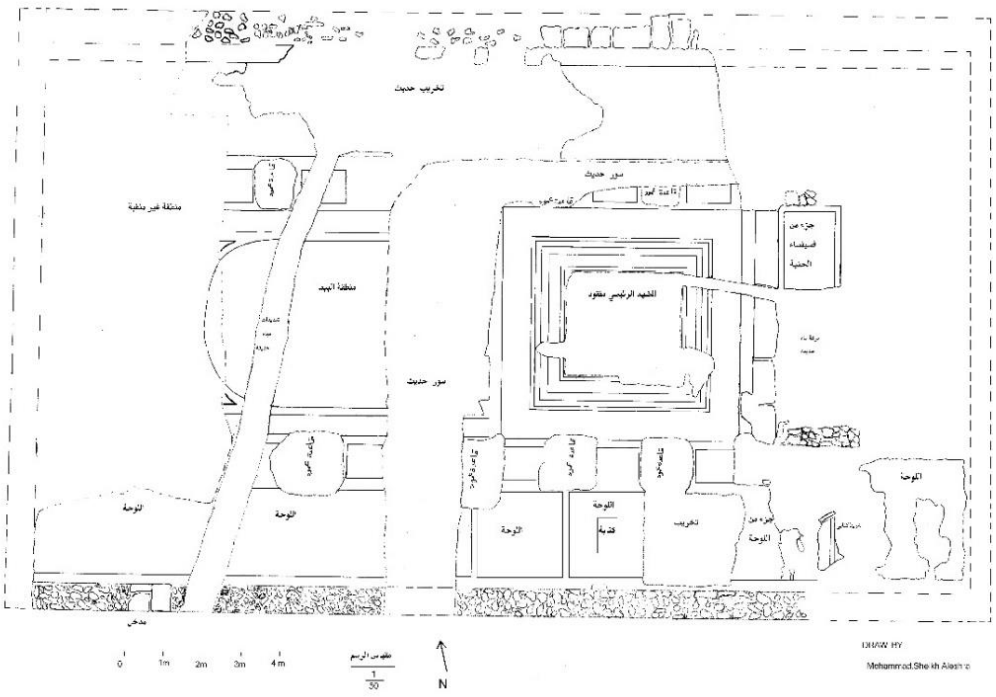


Fig. 156. General diagram of the church. (Photo by Kanjou, Y. Alhaj Ali, F. 2012:240).

Southern Portico: A Comprehensive Study

The floor of the portico is completely covered with mosaic pavement, divided into various scenes, separated from each other within alternating squares, and a band of white *tesserae* surrounds them 30 cm wide. (Fig. 157)

- **First Scene (From the West - The Entrance)**

  Dimensions: length of 9 m, width of 2.40 m, dominated by a geometric character with symmetrical, opposite, and alternating scenes over the entire scene, with different colors varied in red, yellow, white, and black. They form a group of geometric shapes squares with small intrinsic rhombus), straight, parallel, and intersecting lines which form various geometric shapes such as triangles, rectangles, and small red rhombuses. The scenes were separated by small repeating squares with intersecting and opposite lines. The figure fills all over the scene, it is mentioned that the first part was damaged due to the environmental conditions, while the second part is still in good condition. Its dimensions are 240 x 340 cm. (Fig. 158Fig. 158)



Fig. 157. The Southern Portico. (Photo by Kanjou, Y. Alhaj Ali, F. 2012).



Fig. 158. Part of the mosaic on the south portico near the left door (first scene). (Photo by Kanjou, Y. Alhaj Ali, F. 2012).

- **Second Scene (Dome)**

  In this scene, a simplified architectural design can be visible, which is a special depiction among the Byzantine geometrical motifs. It is like the sight of the inner space of a dome when we are looking up. The dome design has four windows with semi-circular closures open to the four main directions. In the middle, a tondo is seen with a set of two cross motifs. The scene is arranged into a circle, and it also shows at the same time a large cross symbol which is given by the walls of the dome between the windows. In every corner of the square outside the circle different geometric patterns branch out with floral shapes. The background of one differs, it is set with black *tesserae*. Its dimensions are 220 x 220 cm..[256] (Fig. 159)

[256] Kanjou, Y. Alhaj Ali, F 2012: 240.



Fig. 159. The mosaic of the south portico (Dome scene). (Photo by Kanjou, Y., Alhaj Ali, F. 2012).

- **Third Scene (Inscription)**

  Dimensions: 200 x 220 cm, slightly ruined on the east side; contains Greek script forming the central motif. The text is located within an elongated rectangle (Tabula Ansata), on a triangle's north and south sides. The five-line text is a consecrated inscription. In connection with the inscribed text, there is an equilateral cross in the center. In its center, colorful concentric circles are formed. At each corner of the inscribed scene, there is an octagon with a red swastika pointing to the left on a yellow background (the wheel of life). In the long octagons are elongated hexagonal shapes that are smaller. Small squares were formed on the short edges of the octagons, completing the scene, and filling all the spaces. This scene is based on the principles of symmetry and rotation, as the first section is completely identical to the second.[257] (Fig. 160)

[257] Ibid., 240.



Fig. 160. The mosaic of the south portico (Inscription). (Photo by Kanjou, Y. Alhaj Ali, F. 2012).

The dedicatory inscription discovered in the church portico is framed with Tabula Ansata. These kinds of inscriptions are (a vow or prayer), common in Byzantine/Early Christian contexts. As this inscription consists of five lines, transcribed as follows:

1. ΠΑΝΑΡΕΤΟΣ ΕΥΞΑΜΕΝΟΣ
   ΥΠΕΡ ΠΑΝΤΟΣ ΤΟΥ ΟΙΚΟΥ
   ΑΥΤΟΥ ΚΑΙ ΥΠΕΡ ΜΝΙΑΣ
   ΜΑΞΙΜΙΝΟΥ ΕΨΗΦΩ
5. Σ Ε Ν Τ Η Ν Σ Τ Ο Α Ν.

Minuscule Greek

1. Παναρετος εὐξάμενος
   ὑπερ πάντος τοῦ οἴκου
   αὐτοῦ καὶ ὑπερ μνὶας
   Μαξιμινου ἐψήφω
5. σεν τὴν στόαν..

Interpretation into English

Panaritos (personal name), who made the vow,

For his entire household (or 'family'),

He himself (who Panaritos), and also for the memory of

Maximinus laid the mosaic

Of the portico (stoa).

Complete Interpretation:

Panaritos, who made the vow for his entire household and also for the memory of Maximinus, laid the mosaic of the portico (stoa).

The second inscription

It is located in the fourth scene of the southern portico mosaic, which is almost completely damaged. A band with a Greek inscription remains on the eastern side, consisting of one line, with dimensions of 110 x 15 cm; the text is reproduced as follows:

..... ΘΕΤΙΤΟΙΥΔΟΥΔΟΥ∑ΟΥΚΑΟΡΟ∑……

Minuscule Greek after making the necessary corrections:

[Κε μνήσ] Θηπ τὸ⟨ν⟩ δούλο⟨ν⟩ σου Καορος [.....]

Interpretation into English

[O Lord, rem] ember your servant Kaoros [.....]

Main Church Nave

It forms the main part of the church and usually includes the main door on the west side, the Bema area in the middle, and on the eastern side the Holy of Holies (the apse area). Accordingly, the mosaic pavement discovered here can be divided into three sections:

The First Section: It is located at the main entrance to the church on the west side. This place was not excavated due to the presence of a modern house.

The Second Section: The Bema (its dimensions: 430 x 570 cm) was built during the construction of the church approximately so that it remained at a level higher than the church floor by about 30 cm. Its remains are not completely visible due to the great loss/lacuna on the top and the sides. The bema area is surrounded by a frame of colored mosaic. On the south side is a 48 cm wide and 280 cm long strip, in which there are several semi-circles connected to the side of the strip on one side. They are connected to each other in a straight line. A cross symbol appears between every two lines containing a horizontal diamond shape without vertex. As for the north, a strip of 50 cm width and 450 cm length surrounds the bema area. In the main geometric motif, there are squares with small heads

between successively placed triangles. This arrangement alternates with straight line-connected triangles on the sides of the strip.[258]

The Third Section: Contained the main scene in the church, but unfortunately, this part does not exist, except its geometric frame with a width of 175 cm, which indicates the importance of the lost scene. (Fig. 161)



Fig. 161. The mosaic of the main nave (frame of the main scene). (Photo by Kanjou, Y. Alhaj Ali, F. 2012).

The Current Framework Can be Divided into Three Sections:

The First Section: its width is 1 m, and it consists of a highly complex interlace motif. The intertwined reddish strip extends over the entire frame. The strips form large intersecting circles hiding through large lozenges.

The Second Section: its width is 18 cm. It consists of small red triangles, repeated in succession, in the form of a zigzag.

[258] Kanjou, Y. Alhaj Ali, F 2012: 242.

The Third Section: 30 cm wide contains alternating colored (with blue and red base) lily flower motifs closely sorted in opposite positions on a black background.

Northern Portico

Like the southern portico in terms of its dimensions, its width is 240 cm, with a white frame of 40 cm width, a mosaic pavement containing one scene over the entire portico was discovered. It shows repeated octagons with a diameter of 45 cm with a smaller square in each, which has some appendages in the outer corners. The floor of the northern portico was damaged, except for a section at the eastern end of a length of 3 m, and parts of the pavement appeared on the western side indicating that the same scene is repeated. (Fig. 162) This church is considered, through its plan, a model for the basilica that meets the requirements of Christian worship, as the eastern part was dedicated to the rites of worship, and it seems that the chest of the church was prepared in the depth of the wall with rectangular rooms on both ends, and the apse was slightly higher than the paved floor of the church. (Fig. 163)

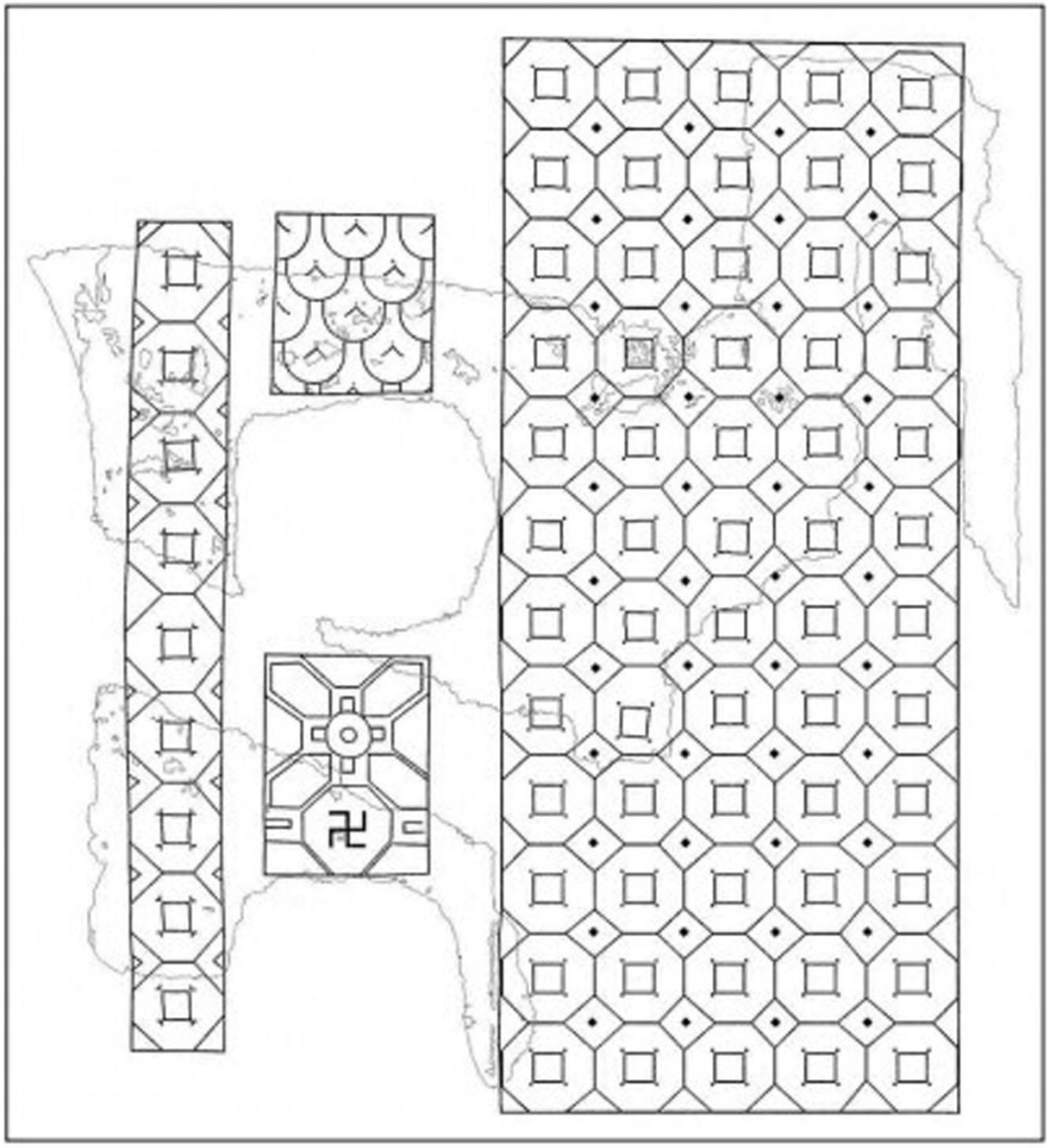


Fig. 162. A mosaic plan for the western section of the northern portico, with scenes between the columns. (Kanjou, Y. Alhaj Ali, F. 2012: 248).

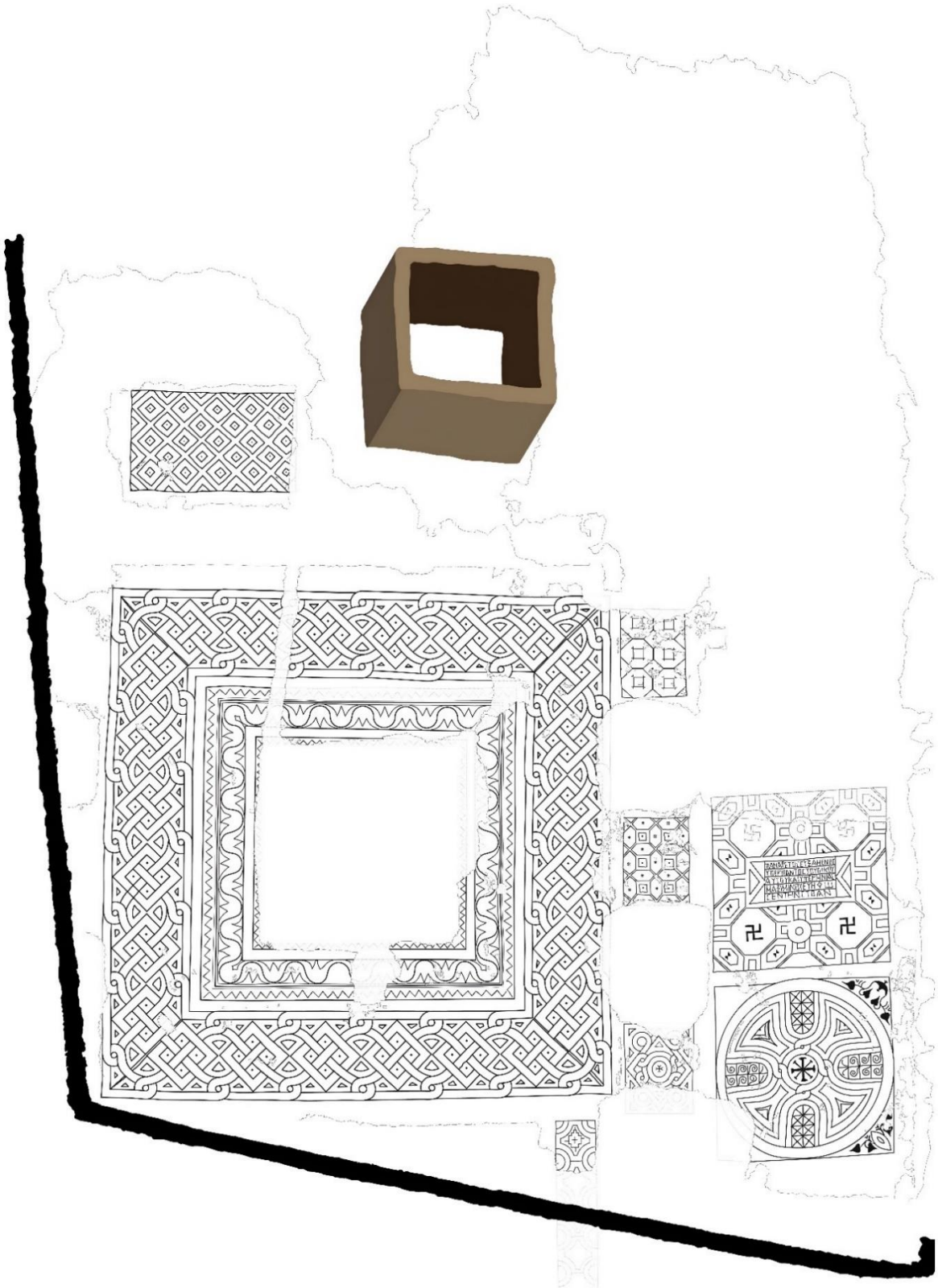


Fig. 163. Part of the church plan (south portico and main nave). (Kanjou, Y. Alhaj Ali, F. 2012: 250).

Apse

At the end of the main courtyard, there is a row of rectangular limestone blocks, 65 cm wide, 620 cm long, built diagonally, and it leads to a height of the Apse, about 40 cm from the floor level of other sections, which forms the beginning of the holy part of the church. It is the boundary between the main courtyard and the main apse of the destroyed church to the east. It seems that the floor of the apse was completely paved with mosaics, but it was found destroyed, except for the northwest corner, with dimensions of 160 x 230 cm, which has various geometric shapes among repeated lozenges, their dimensions are 35 x 35 cm. It is all set within a straight line of black *tesserae*.[259] (Fig. 164)



Fig. 164. Geometric shapes northwest corner of the apse. (Photo by Kanjou, Y. Alhaj Ali, F. 2012).

Conclusions

The motifs used on the mosaic pavement of the Church of Tell Bājr are mainly geometric but hide more complex visual layers as well by focusing on the cross symbols and reflecting the architectural context. Therefore, it can be said that the mosaic of Tell Bājr is considered one of the masterpieces of Byzantine floor mosaic collection.

[259] Ibid., 250.

IX. MOSAIC PAVEMENT AT THE VILLAGE OF ʿELÎ BÎSKÊ

Geographical Overview

The site is located in the northern part of Aleppo province, in the Afrin region, southwest of the village of ʿElî Bîskê. It is bordered to the east by the village of Bilīlkū, known for its high mountain ranges overlooking a series of deep valleys on the Syrian Turkish border. It was called Khirbet Gūli, attributed to a large water pond where rainwater gathers in the winter season. (Fig. 165) Locals also refer to it as "The Church" due to the presence of ancient ruins on a medium-height plateau. These ruins constitute an abandoned architectural spot since ancient times, built with varying sizes of limestone stones. During the cleaning operations near the modern village of ʿElî Bîskê, the site was discovered.

The Antiquities and Museums Directorate in Aleppo Governorate conducted several archaeological Sondages on 03/09/2015. During these excavations, a ruined archaeological structure was discovered in some parts due to natural damage and human vandalism over several historical periods. The building was constructed using limestone blocks of various sizes, connected with lime mortar.[260] Additionally, a stone column base with a diameter of 65 cm and a length of approximately one meter was discovered. Fragments of pottery tiles, which were used on the roofs, were also found. Moreover, a floor covered with a 5 cm thick white lime-based layer was revealed. Furthermore, illegal modern excavation works were observed. Furthermore, parts of a damaged mosaic pavement were discovered, spreading towards the east and south.

[260] Nasser, A 2015: 1.

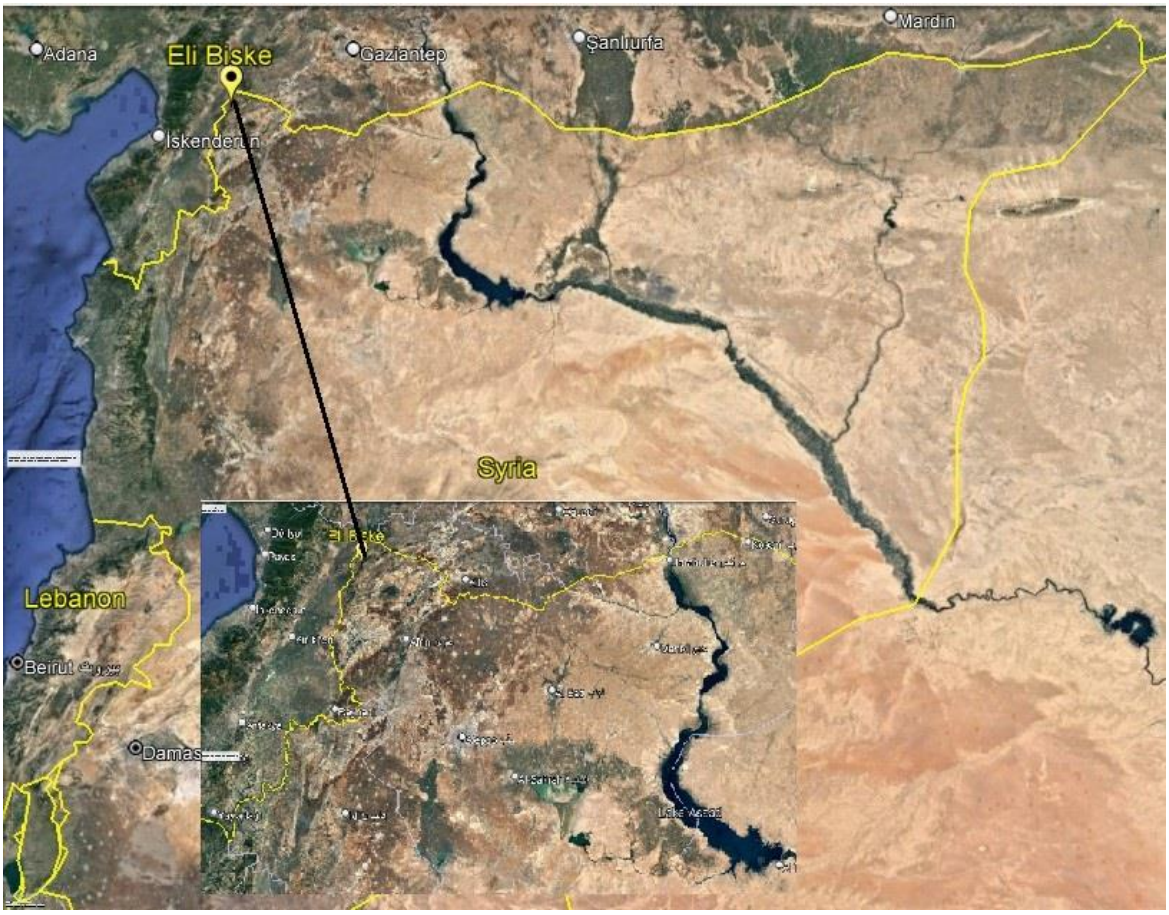


Fig. 165. A Map of Syria locating ʿElî Bîskê Site. (Google Earth completed by Alhaj Ali, F. 2020).

Comprehensive Study of Mosaic Pavement

Parts of a mosaic pavement were discovered, featuring geometric and floral decorations in harmonious colors. It is surrounded by a decorative frame in the form of interwoven braids, some of which are wide, and others narrow. Additionally, a circular section of the mosaic pavement with a standing bird scene was discovered. Furthermore, a small portion of a circle containing floral designs, possibly representing a pomegranate, was found in the middle of the mosaic pavement. (Fig. 166)





Fig. 166. General view of the mosaic pavement in ʿElî Bîskê Site, showing areas of damage. (Photo by Nasser, A. 2015).

Discovery of Mosaic Pavement in Room No.1:

The floor of this room was discovered to be a mosaic pavement adorned with geometric and floral motifs, including octagons, squares, triangles, and interconnected and intertwined semicircles. It consists of ten intersecting elongated octagons with five rhomboid octagons, each containing a scene within a geometric square. Each corner of the square has a small prominent protrusion with artistic decorative elements. The design also incorporates triangles and floral motifs to give it an artistic style inspired by the surrounding natural environment.

The mosaic pavement was executed with small limestone *tesserae* measuring 0.5 cm in various colors, including red, blue, green, yellow, black, white, gray, and brown. However, some minor damage was observed at the center of the mosaic pavement due to its proximity to the ground surface and collapses caused by natural and human factors and illegal excavation. [261]

This mosaic pavement constitutes the floor of Room No.1, located on the western side, with dimensions of approximately 3.5 meters by a rectangular shape. It was constructed using trimmed limestone blocks of various sizes and shapes, ranging from squares to rectangles. The walls' thickness was about 1 meter and were reinforced from both the interior and exterior with small limestone blocks while maintaining the traditional lime mortar. The walls were generally in good condition, except for the northwest section, which was completely destroyed. (Fig. 167)

[261] Ibid., 3 - 6.



Fig. 167. Remains of mosaic pavement discovered in Room No.1. with geometric and floral motifs, "octagons, squares, triangles, and interconnected and intertwined semicircle". (Photo by Nasser, A. 2015).

Discovery of Mosaic Pavement with Two Artistic Scenes:

A mosaic pavement was discovered, featuring two different geometric artistic scenes. Unfortunately, some damage was observed in the main scene from the northern side. These geometric scenes were executed using stone *tesserae* in precise geometric arrangements and various colors. An artistic geometric frame, consisting of intertwined spiral lines in the form of prominent braids, separates the two scenes, giving them a third dimension. In these scenes, one can observe the main unit of geometric shapes represented as an artistic parallelogram-shaped model, repeated systematically in all the mosaic pavements. It can be viewed from all angles, employing a three-dimensional design and symmetrical rainbow colors. (Fig. 168)



Fig. 168. Remains of mosaic pavement damaged in the main scene from the northern side. (Photo by Nasser, A. 2015).

The first scene includes a large geometric circle with a diameter of approximately two meters. In the center, there is a smaller geometric circle ending with five leaf petals in the shape of a bud. Then this circle ends with protrusions in the form of braids that wrap around the circle, in addition to semicircles interweaved and interconnected, forming symmetric and harmonious triangles with each other. (Fig. 169)

The second scene extends from the same artwork, separated by a decorative frame consisting of six large interconnected and harmonious squares of the same size, forming an octagonal shape in the center of these squares. Within this geometric octagon shape, there are small squares with black protrusions at each corner.[262] (Fig. 170)

[262] Ibid., 10.



Fig. 169. The first scene consists remains of a large geometric circle with a diameter of approximately 2 meters. (Photo by Nasser, A. 2015).



Fig. 170. The second scene is a frame consisting of six large interconnected and harmonious squares of the same size. (Photo by Nasser, A. 2015).

This mosaic pavement covers the floor of the second room, adjacent to the first room (Room No. 1), located on the northern eastern side. The second room is built of limestone blocks, with dimensions of approximately 3.75 meters by 2.75 meters, and a height of 180 cm. The walls' thickness ranges from 80 to 100 cm and is reinforced from both the interior and exterior with traditional lime mortar (a layer of white mortar). On the floor of the third room**,** a mosaic pavement was discovered, executed using different-colored stone *tesserae*, featuring geometric and floral motifs. It almost entirely covers the floor of the third room, which is located on the northeastern side, adjacent to the second room in sequence. The dimensions of this mosaic pavement are approximately 2.70 meters by 2.50 meters. The construction of this room involved limestone blocks of varying sizes, and the walls' thickness measured 80 cm. Moreover, another mosaic pavement was discovered, it is an extension of the previously discovered mosaic pavement of the rest of the rooms. It also displays geometric and floral motifs and follows the same execution method. This mosaic pavement covers the floor of the fourth room, which has similar dimensions to the third room and is situated in the same northeastern area.

Fifth Sondage

Located on the western side of the site, it is an extension of the third sondage on the northern side. A mosaic pavement was discovered, featuring two scenes. The first scene consists of geometric motifs (triangles, semicircles, squares, intertwined and interconnected braids within a large square frame) and floral motifs executed with multicolored limestone *tesserae*. It is separated by another decorative frame of intertwined and interconnected

braids, forming an animal-themed geometric scene. This scene includes eight large and colorful circles, with a standing bird in the center, raising its head, possibly representing a standing duck. It is enclosed within a large geometric square. (Fig. 171) Besides the geometric scene, there is another artistic scene in the form of an incomplete rectangle measuring 80 cm in length and 60 cm in width. It has been partially damaged, especially in its northern part. On both sides of this rectangle, there are geometric triangles (Tabula Ansata), and within it, there is Greek inscription executed with white and black stone *tesserae*, possibly indicating the date of the architectural construction, the builder's name, and architectural function. (Fig. 172)

The second scene, which is the most significant one, is located on the southwestern side of the same sondage. It represents an animal-themed scene within a splendid rectangular frame of dimensions, measuring 180 cm by 70 cm. The scene depicts two facing gazelles executed with exquisite artistic precision, both standing and grazing. Surrounding them are valleys and mountains shaped like triangles, covering the entire scene. This mosaic pavement reflects philosophical and religious concepts inspired by the teachings of Christianity during that time, as well as the craftsman's ability to connect religious life with the surrounding environment.[263]



Fig. 171 . This scene includes eight large and colourful circles, with a standing bird in the center, raising its head "duck" enclosed within a square. (Photo by Nasser, A. 2015).



Fig. 172. The scene is an incomplete rectangle, damaged in the northern part, and contains a Greek inscription, possibly indicating the date of the architectural construction, the builder's name, and architectural function. (Photo by Nasser, A. 2015).

[263] Ibid., 11- 15.

The scene also symbolizes the importance of the mosaic pavement, conveying religious and philosophical messages in a way that highlights the connection between religious beliefs and the natural world in which they live. The gazelles were considered domesticated animals during that period, possibly serving specific ritualistic functions in historical periods. The first gazelle in the grazing scene is depicted as feeding on nature, having long horns indicating that it is a male animal. On the other hand, the second gazelle is smaller in size and hornless, portrayed in a vigilant position with its head raised. The artwork demonstrates the use of a third dimension and depth in the shadow and highlights. (Fig. 173)

The analysis of these animal shapes reveals great vitality characterized by skill, strength, balance, and precision. The craftsman attempted to abstract some decorative elements and distribute the colors.

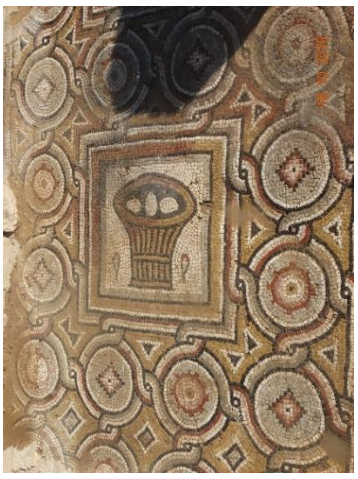
A mosaic pavement was discovered on the eastern side of the site, extending across the entire floor of the room. It features geometric scenes of triangles and intersecting squares with circles and semicircles, forming leafy plant motifs with curving zigzag lines in decorative patterns. These scenes are surrounded by a geometric decorative frame in the form of intertwined braids, forming spiral lines interconnected with each other, giving the artwork an artistic style resembling a parallelogram-shaped model.



Fig. 173. The first gazelle in the grazing scene, the second gazelle is in a vigilant position with its head raised. (Photo by Nasser, A. 2015).

All of the decorative elements are executed using limestone *tesserae*. To the northeastern side of this room, a partially damaged geometric and animal-themed scene was uncovered. The scene depicts two animals in a walking position, possibly horses, with a large food basket between them, equipped with a long handle and some plant leaves. This animal scene is accompanied by interconnected and geometric scenes, distinguished by two different aspects: one is geometric, and the other is a combination of animal and plant motifs. This artwork belongs to the late Roman and early Byzantine artistic styles, indicating the advancement of mosaic craftsmanship during that period. The scene was executed using small stone *tesserae*, with a thickness of ½ cm, in various geometric and artistic colors (red, black, green, brown, white, blue, yellow, and gray).[264] Furthermore, on its western side, there is a large geometric scene forming an exquisite mosaic artwork, featuring triangles, circles, squares, and octagons, with interconnected vertical and horizontal lines, all executed with meticulous geometric and artistic precision. This scene stylistically dates back to the end of the Roman period and the beginning of the Byzantine era. Additionally, in the southeastern part of the fifth sounding, within the main hall, a geometric scene was revealed. It consists of large, interlocking colored circles, executed in multiple colors. In the middle of these circles, there is a large square containing a bird in motion, with its head raised. This scene is followed by another scene of the same size and shape with a bird bowing its head to its feet, and another square with a basket and three eggs repeated several times within the same mosaic pavement. (Fig. 174) All these central fields can be considered as pseudo-emblemata.





[264] Ibid., 16.



Fig. 174. Colorful interlocking circles framing squares (Pseudo-emblemata) with birds and a basket containing three eggs. (Photo by Nasser, A. 2015).

The excavations work in the southern part of this sondage was focused on the main walls have been reached of the distinguished architectural structure, with a thickness of approximately 1 meter. These walls are interconnected and robust, constructed from different-sized carved limestone blocks using good artistic techniques, ranging between square and rectangular shapes. They are reinforced from the inside and outside with traditional lime mortar. A significant portion of these walls are still well-preserved.

Furthermore, in this excavation, some secondary walls were observed, also reinforced from the inside and outside. This may indicate that the architectural building was used in multiple historical stages, as evidenced by the variations in wall construction alongside the main wall.

Work also focused on the eastern side of the same sondage site, where a completely destroyed massive arch was uncovered in its original location. It had a width of 70 cm and a length of 4.75 cm, constructed from limestone blocks using advanced manufacturing techniques. The arch was engineered in a way that widens at the top and narrows at the bottom. On the faces of these limestone blocks, exquisite artistic, geometric, and ornamental decorations were observed, executed in various splendid colors (remains of wall painting).[265]

[265] Ibid., 17 - 20.

During the daily archaeological excavation stages, parts of some limestone blocks with delicate geometric and botanical decorations were also discovered. These blocks served as lintels for the doors and windows of this architectural structure.

Fourth Sondage

Fragments of pottery were found, some of which were poorly crafted, while others were distinct and followed the Roman-Byzantine style. This explains that the site was reused in three historical stages. As the archaeological excavation expanded towards the east and north, the outlines of the wall and the structure became clearer.

Inscription Analysis and Interpretation

1. + Η [ΤΟΣ ΗΜΕΡΑ…….]. ΤΩ ΠΡΕΣ
   ΒΥ [ΤΕΡΟΣ.....ΤΩΝ....] ΙΩΝΩΝ
   Μ [.....] ∫ ΑΡΩΝ
   ∫[.....] ΗΣΕΠΛΗΡ
5. [.... ΕΤΟΥΣ …...ΜΗΝΟΣ] ΠΑΝΕΜΟΥ

The inscription is definitely late or post-antique. We cannot date it more precisely; the exact date was certainly in the lost/damaged part. Whether it belongs to a church pavement depends mainly on the context.

We can observe that the inscription is severely damaged and incomplete, and only a few words remain. Here, no epigraphist can make a reliable estimate of the missing words with certainty or even approximation. Nevertheless, it is possible to speculate, without certainty or confirmation, about the restoration of some words from this inscription as follows:

Symbol	Likely Meaning
+:	May indicate a missing symbol, character, or unknown damage.
[...]	Sections within square brackets are believed to have been originally missing and subsequently added by the editors, or are currently missing, and an attempt is being made to recover them.
ΗΜΕΡΑ	means "day".
ΠΡΕΣ	Often an abbreviation of ΠΡΕΣΒΥΤΕΡΟΣ (high priest) or ΠΡΕΣΒΕΥΤΗΣ (ambassador/envoy).

ΒΥ[ΤΕΡΟΣ]	often part of the word πρεσβύτερος (elderly priest). ΤΩΝ means "of/belonging to" (plural form).
ΙΩΝΩΝ	Often the possessive form "of".
Μ	The letter M (Mu).
∫	A symbol indicating the end of one word or line and the beginning of another, or an abbreviation.
ΑΡΩΝ	May be part of a person's name or a verb.
ΗΣΕΠΛΗΡ	Often part of a verb that refers to something done.
ΕΤΟΥΣ	Means "year."
ΜΗΝΟΣ	Means "month."
ΠΑΝΕΜΟΥ	The genitive form of the name of the month Πάνεμος (Panemus), a month in Hellenistic calendars (such as the Macedonian calendar) corresponding to July in our current calendar.

Approximate interpretation (with guesswork for common complements)

The inscription appears to be a commemorative inscription that dates an event (perhaps a building, dedication, or paving a mosaic), mentions a date (day, month, year), and a religious or administrative position (elder/high priest).

"*During the days of [....] the priest [....] in the times of [.....] and Hārūn and [.....] HSEPLER "ΗΣΕΠΛΗΡ" [.....] and the year [.....] and the month of Panemos. (The month of Panemus corresponds to July in our current calendar.)*" (Fig. 175)



Fig. 175. A damaged rectangular scene with "Tabula Ansata", containing a Greek inscription that potentially denotes the architectural date, builder's name, and function. (Photo by Nasser, A. 2015).

Date of Mosaic Pavement

Based on the available information and a comprehensive study of the animal, plant, and geometric scenes depicted on the mosaic pavement, as well as comparisons with other mosaics discovered in various sites, we believe that the mosaics date back to the end of the Roman period and the beginning of the Byzantine era.[266]

Technique and Method

We have not been able to determine the total dimensions of the mosaic, the original role of the room covered by the mosaic, nor the entrance into the room, due to the presence of later building walls on top of the mosaic. and the great damage to the mosaic pavement and the extension of the mosaics under the walls of the later-period building. The mosaic pavement was executed with small limestone *tesserae* measuring 0.5 cm in various colors, including red, blue, green, yellow, black, white, gray, and brown, there were no glass or ceramic *tesserae*/bricks among the raw materials. The general size of the *tesserae* was similar both in the frames and the central scenes. Considering the available information, and comparisons with other mosaics discovered in many sites, we believe that the mosaics date back to the end of the Roman period and the beginning of the Byzantine era.[267]

Technical Condition of Mosaic Pavement

1. The mosaic pavement shows significant damage, mainly due to the building being repurposed for other functions in later periods. This resulted in walls being constructed directly on top of the mosaic, in addition, due to illegal excavations.
2. There are *lacunae* in the mosaic pavement.
3. The mosaic *tesserae* have been lost. (Fig. 176)

[266] Kanjou, Y 2008: 49.

[267] Kanjou, Y. Alhaj-Ali, F 2011: 5.



Fig. 176. The remaining mosaic pavement shows big damage" illegal excavations, lacunae, losing tesserae ", due to the building being repurposed for other functions in later periods. (Photo by Nasser, A. 2015).

Restoration and Preservation of Mosaic Pavement

The mosaic pavement was preserved in-situ after reinstalling some of the missing *tesserae* and reinforcing the edges of the mosaic with lime mortar. Subsequently, a wall was constructed around the site to protect the mosaic pavement, and a shelter was placed over the site. However, due to the war in Syria, that area has fallen out of government control, and we have no longer information about the fate of the mosaic pavement and what has happened to it.[268] (Fig. 177)



Fig. 177. Restoration and preservation of the mosaic Pavement at the situ " Re-installing the tesserae and reinforce the edges". (Photo by Nasser, A. 2015).

[268] Jbaee, M. Al-Taweel, M. Bouza, N 2010: 5.

Conclusion

The site, located in the northern part of Aleppo province in the Afrin region, has revealed the presence of several mosaic pavement parts, each featuring geometric and floral decorations in harmonious colors. The craftsmanship of the mosaics reflects skill, strength, balance, and precision, indicating an advancement in mosaic art during the late Roman and early Byzantine periods. Unfortunately, the site has faced significant damage due to the repurposing of the building and illegal excavations. Efforts were made to preserve the mosaic pavements, but the ongoing war in Syria has made it challenging to ensure their conservation and protection.

CHAPTER VIII

VIII. COMPARATIVE AND ANALYTICAL STUDY OF EARLY BYZANTINE MOSAICS IN ALEPPO CHURCHES

The examined features of the nine sites with Byzantine mosaic pavements near Aleppo are summarized in tables at the end of the thesis. The main content of the collected data is as follows below.

VII.1. COMPARATIVE ANALYSIS: GEOMETRIC MOTIFS

Geometric motifs are common and prominent features across the mosaic pavements of Aleppo's Byzantine churches. The following is a comparative analysis of the geometric motif elements observed in each of the studied sites. For each site, major shapes, and layout patterns.

Al-Mazraʿa Al-ʿUlia

The decorative border features geometric motifs. The south portico has diamond shapes, rainbow patterns, orthogonal nested circles, secants, and octagons.

Tell Al-ʿAmārna

Geometric motifs centered around a cross are found in the Apse. Rhombus-shaped motifs and an orthogonal arrangement of octagons and squares are found in the sacristies.

Qinnasrin Monastery (DEIR QINNSRīN)

Geometric motifs include circles, semicircles, elongated rhombuses, and triangles, creating a 3D effect.

Martyr John's Monastery (AL-NABGHA)

A geometric scene featuring polygonal shapes and concentric circles, creating 3D effects, is enclosed within a frame bordered by decorative bands.

Al-Mankūba (MANBIJ External frame of rhombuses with repeated rows of images (birds, fruits, crosses), the southern portico similarly uses rhombus shapes; decorations alternate between geometric and floral motifs.

ʿUqlat Al-Bwydr Church

Baptistery (east room): mosaic (2.80×3.20 m) with a central bird and geometric border.

Left room (diaconicon): destroyed but had repeating sinuous circles and squares within semicircular frames.

ZAMKA

The outer frame: includes Geometric shapes like hexagons, squares, triangles.

The inner frame: First scene - includes flower-like circles; second scene - includes angular chain-like motif.

Tell Bājr Church

Geometric motifs dominate, featuring squares, triangles, rectangles, and small rhombuses; Tabula Ansata with cross and concentric circles; octagons with swastikas at corners, and dome-like architectural design.

Northern portico: has repeated octagons and smaller squares (mostly damaged).

Apse: corner fragment with rhombus motif.

ʿElî Bîskê Village

Geometric motifs dominate, featuring interlocking octagons, squares, triangles, semicircles, and circular shapes with bird motifs.

VII.2. COMPARATIVE ANALYSIS: ANIMALS AND PLANTS MOTIFS

The following comparative analysis of animal and plant motifs in each site's mosaics. Included the types of animals and flora depicted, their arrangement or scenes, and any associated symbolism or interpretation provided.

Al-Mazraʿa Al-ʿUlia : The central field shows an animal carousel, including leopards, bears, hares, dogs, and birds, alongside dense rosebuds.

Martyr John's Monastery (AL-NABGHA): Features a Natural Environment Scene depicting wildlife, including peacocks, deer, bulls, and trees.

Al-Mankūba (MANBIJ): Rhombuses contain floral, geometric, and animal scenes such as birds and a basket of fruits.

ZAMKA

Depicts peahens with grapevines and clusters (symbolizing eternity and rebirth), a central bull head (Bull symbolizes fertility and sacrifice), a lion (strength, vitality), and a dove (peace and Holy Spirit). A Palm tree symbolizes victory over spiritual adversaries.

VII.3. COMPARATIVE ANALYSIS: INSCRIPTIONS

Inscriptions are very important because they provide critical information on dates and dedication.

- **Greek:** Most widespread inscription type.
    - **Tell Al-ʿAmārna:** Greek inscriptions in the apse suggest dedication to the salvation of servants.
    - **Al-Mankūba (MANBIJ):** A central circle in the Southern Room (Diaconicon) features five incomplete lines of a Greek inscription.
    - **Tell Bājr:** Scene contains a Greek inscription within a rectangle (Tabula Ansata).
    - **ʿElî Bîskê:** An important finding is a heavily damaged and incomplete inscription referencing a priest and the month of *Panemos* (July), likely dating to the late or post-antique period.
- **Syriac:** Limited but significant.

- **Martyr John's Monastery (AL-NABGHA):** Two Syriac inscriptions detail the construction and date the mosaic to 407 AD.

VII.4. COMPARATIVE ANALYSIS: TECHNIQUES

This comparative analysis outlines the technical aspects of each mosaic, including *tesserae* size, materials, mortar, and method of construction.

- **Primary Technique:** *Opus Tessellatum.*
- **Tesserae Size:** Small tesserae sizes are characteristic.
    - **Al-Mazraʿa Al-ʿUlia :** Tesserae range from 0.9to 1 cm in size.
    - **Tell Al-ʿAmārna:** Tesserae are 1 cm in size.
    - **Martyr John's Monastery (AL-NABGHA):** Tesserae are 6 mm.
- **Materials/Colors:** Materials include limestone, red brick, and mixed black/red grains. Colors used are gray-green, yellowish-green, pink, white, and yellow.

VII.5. ICONOCLASM EVIDENCE

Only one site in the study shows clear signs of deliberate iconoclasm. Martyr John's Monastery (Al-Nabgha) exhibits about 30 deliberate iconoclasms, likely dating to mid-8th-century religious conflicts. suggests these acts were ideologically motivated, perhaps by Christians reacting against charges of idolatry. In contrast, Al-Mazraʿa Al-ʿUlia's mosaics show no evidence of Byzantine iconoclasm. Other damage at various sites is attributed to later historical causes (e.g., Islamic-period reuse, looting, or natural degradation) rather than organized iconoclastic intent.

VII.6. ICONOGRAPHIC ANALYSIS OF MOSAICS IN ALEPPO CHURCHES

After reviewing the main archaeological sites that contain mosaic pavements dating back to the early Byzantine churches near Aleppo and analyzing their stylistic and material characteristics, it becomes crucial to investigate the symbolic and spiritual dimension embedded in these artistic creations.

Mosaics have indisputable aesthetic and technical value, but their real significance is found in the visual interpretation of symbols that early Christian craftsmen used to convey liturgical and theological ideas. In addition to revealing the spiritual and cultural uniqueness that sets Aleppo churches apart from the larger Byzantine world, the study of iconographic

themes, including floral, animal, and geometric motifs, allows for a fuller understanding of the theological ideas that influenced artistic production.

Accordingly, this chapter offers an interpretive reading of these mosaics, demonstrating how art functioned as a visual theology, merging form and meaning, faith and beauty. Iconography in early Christian mosaics serves as a tool for understanding the symbols and theological meanings that the craftsman intended to convey through the image. It is not to be read as a literal representation but rather as a symbolic visual language that communicates concepts of salvation, resurrection, and faith.

In the churches of northern Syria, particularly in the Aleppo region, mosaic decorations evolved into a more abstract and symbolic form rather than a narrative one. This is evident in the absence of direct biblical scenes, which are contrasted by the presence of symbols such as the vine, the cluster of grapes, the peacock, and the gazelle, all of which carry connotations associated with eternal life.

VII.6.1. Symbolism of Floral and Plant

The vine is the most frequently appearing iconographic element in Syrian church mosaics. It symbolizes Christ *"I am the vine, you are the branches",* and its intertwined branches represent the unity of believers in the Church.[269]

The pomegranate and palm leaves are associated with rebirth and spiritual fertility and are common symbols in both funerary and ecclesiastical art.. The Palm Tree also symbolizes victory over spiritual adversaries.[270]

VII.6.2. Symbolism of Animals

Church mosaics depicting animals carry deep symbolic meanings, reflecting the use of prehistoric nature symbols within the context of early Christian ideas:

- Immortality and Resurrection (Eternity): Due to its annual feather renewal, the peacock, often shown with vines and grape clusters, symbolizes eternity, immortality, and resurrection.[271]

[269] Finney, P. C 1997: 94.

[270] Weitzmann, K 1979: 139.

[271] Gharib, A 2009: 183-191.

- Peace and Spirituality: Usually depicted in the eastern part of the church or near the baptismal font, the dove symbolizes peace and the Holy Spirit, with biblical associations.[272]
- Fertility and Strength: The bull symbolizes sacrifice and fertility, while the lion represents vigor and strength.[273]
- Grazing deer represent religious and philosophical concepts.

VII.6.3. Symbolism of Geometry Motifs

Complex geometric motifs, such as repeating polygons and Intersecting circles, are frequently used in Syrian mosaics. These motifs are more than ornamental; they represent cosmic order and heavenly perfection.[274] Notably, the center of the design often resembles a circle or a cross within a square, referencing the theological and philosophical notion of "The earthly world in the presence of heaven," which was common in early Byzantine art.[275]

VII.6.4. The Interplay Between Symbols and Architectural Context

Iconographic analysis is incomplete without an understanding of the relationship between the scene and its setting. The placement of specific symbols in the sanctuary or entrance area was not arbitrary but reflects a visual theological sequence: from the earthly (entrance) to the heavenly (sanctuary). For example, grape motifs in the center of the nave symbolize the believer's journey in spiritual life, while celestial motifs in the sanctuary represent the ultimate goal of salvation.[276]

The mosaics of Aleppo demonstrate a symbolic richness that combines classical heritage and Christian belief, offering an example of art's ability to transform simple materials (stone, glass) into a coherent visual theological discourse. Thus, iconography plays a key role in understanding the interaction between art and doctrine in the early Byzantine Levant.

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[272] Syring, P 1992: 86- 189.

[273] Gharib, A 2009: 183-191.

[274] Kitzinger, E.1965: 350.

[275] Weitzmann, K 1971: 128.

[276] Mathews, T 2010: 122.

COMPARATIVE TABLE OF EARLY BYZANTINE MOSAICS NEAR ALEPPO

Mosaic Pavement Site	Excavation History	Structure	Materials	Motifs	Preservation
al-Mazraʿa al-ʿUlia	Beginning in 1970 under R.P. Castellana.	Main Nave, Apse, portico, bema, *Pastophorion*, no naves or courtyards.	Limestone	Interlaced motifs, geometric, floral, animal representations, no Byzantine iconoclasm.	Documented, cleaned, lifted, and transported to the National Museum of Aleppo.
Tell al-ʿAmārana Church	Excavated in 1998 by Önhan Tunca.	Main Nave, Apse, side porticos, no Bema, naves, or courtyard.	Limestone	Interlaced motifs, geometric, floral, animal representations, epigraphic inscriptions, no Byzantine iconoclasm.	Documented, cleaned, lifted, and transported to the Damascus Museum, and returned to Aleppo.
Qinnasrin Monastery (Deir Qannsrīn	Excavated 2005-2006 by Youssef Dabty and Muhammad Fakhro.	Ground plan only, no apse, porticos, bema, *Pastophorion*, or courtyard.	Limestone	Interlaced motifs, geometric elements, cobra figure, no epigraphic inscriptions, no Byzantine iconoclasm.	Documented, cleaned, lifted, and stored at the Aleppo National Museum..
Martyr John's Monastery (Al-Nabgha	Discovered in 2006 under Youssef Kanjou.	Main nave, ground plan, no apse, porticos, Bema, *Pastophorion*, or courtyard.	Basalt stone	Interlaced motifs, geometric, floral, animal representations, epigraphic inscriptions, and some Byzantine iconoclasm.	Documented, cleaned, lifted, and stored at the Aleppo National Museum.
Al-Mankūba	Excavated 2008-2010 by Muhammad Fakhro.	Ground plan, porticos, *Pastophorion*, main nave, no courtyard, apse, or Bema.	-	Interlaced motifs, geometric, floral, animal representations, epigraphic inscriptions, no Byzantine iconoclasm.	Documented with photos, cleaned, and reburied in situ.
ʿUqlat al-Bwydr	Discovered in 2010	Apse, porticos, Bema,		Geometric and animal	Documented, cleaned,

	under Youssef Kanjou.	*Pastophorion*, main nave, built of basalt stone, wall painting fragments.	Basalt stone	scenes, no architectural scenes, interlaced motifs, or epigraphic inscriptions, no Byzantine iconoclasm.	lifted, and transported to the National Museum of Aleppo.
Zamka	Discovered in 2011 under Youssef Kanjou.	No main nave, ground plan, apse, porticos, bema, or *Pastophorion.*	-	Floral, geometric, animal scenes, interlaced motifs, no epigraphic inscriptions, no Byzantine iconoclasm.	Documented, cleaned, lifted, and transported to the Aleppo National Museum.
Tell Bājr	Discovered in 2011 under Youssef Kanjou.	Main nave, apse (destroyed), portico, *Pastophorion*, ground plan, no Bema or courtyard.	-	Architectural scenes (dome), floral, geometric, interlaced motifs, epigraphic inscriptions, no Byzantine iconoclasm.	Documented, cleaned, lifted, and transported to the Aleppo National Museum.
ʿElî Bîskê	Discovered in 2015 under Abdullah Nasser.	No apse, portico, Bema, *Pastophorion*, or courtyard.	Limestone	Floral, geometric, animal scenes, interlaced motifs, epigraphic inscriptions, no Byzantine iconoclasm.	Documented, cleaned, preserved in situ, covered with protective shelter, current status unknown.

Table 1. Comparative Table of Mosaic Pavements of Early Byzantine Churches near Aleppo.

COMPARATIVE ANALYSIS TABLE OF GEOMETRIC MOTIFS

The table below compares the geometric motifs elements observed at each of the nine studied sites. For each site, the major shapes, layout patterns, color usage, and any symbolic motifs are summarized.

Mosaic Pavement Site	Shapes/Patterns	Layout/Arrangement	Colors	Symbolism/Meaning	Notable Features
al-Mazraʿa al-ʿUlia	White *tesserae* border; geometric band with diamonds, nested circles, secants, and octagons	Central animal scene with surrounding floral motifs; south portico divided into three sectors (west: geometric diamonds/rainbow patterns; east: nested circles with flowers; third: rectangular secant motifs)	Gray-green, yellowish-green, pink, white, yellow (polychrome limestone)	Rosebuds (floral motif); otherwise, primarily decorative motifs The South portico is divided into three sectors (west: geometric diamonds/rainbow patterns; east: nested circles with flowers; third: rectangular secant motifs)	High craftsmanship with tightly laid tesserae and finely graded mortar
Tell al-ʿAmārana Church	Central cross at apse; circular motifs; rhombi with rosebuds (north sacristy); octagons and squares (south sacristy)	Separate mosaics in apse and sacristies; apse has cross-centered design; northern sacristy with rhombi and rosebuds; southern sacristy with grid of octagons and squares	Predominantly white background; colored motifs (e.g. rosebuds)	Central cross (Christian symbol); rosebuds as decorative floral elements	Built in two phases (late 4th/early 5th c.); uses *opus tessellatum* method; Eastern Roman style with local variations
Qinnasrin Monastery (Deir Qannsrīn	Circles (with Solomon's knot), semicircles, elongated rhombuses,	First section (6.8×4.2 m) has interlocking circles and rhombuses;	White background; tesserae in black, white, red, orange (multicolored)	Solomon's knot (eternity/life); possible cobra snake motif (protection or evil) in	Complex 3D effect via overlapping geometry; moved to Aleppo Museum

	triangles; rhombus grid with inscribed octagons/hexagons	adjacent small panel with braided border and triangles; second section (western hall, ~4×4 m) features rows of large rhombi, each containing octagon–hexagon designs		circles; no figural animals in geometric panels	
Martyr John's Monastery (Al-Nabgha	Polygonal shapes and concentric circles producing 3D effects (geometric panel)	Two main scene panels: a geometric panel and a natural (animal) panel, each within its own frame; bordered by decorative bands	Various colors in fine 6 mm stone tesserae (polychrome)	Wild animals (peacocks, deer, bulls) and trees symbolize life and spirituality; overall theme of creation	Extremely fine tesserae (6 mm) allow detailed scenes; includes dated Syriac inscriptions (407 AD)
Al-Mankūba	Rhombus (diamond) grid frames	External frame of rhombuses with repeated rows of images (birds, fruits, crosses); southern portico similarly uses rhombus panels; decorations alternate between geometric and floral motifs	White background with multicolored details (birds, fruits, crosses)	Cross motif made of green tesserae (Christian symbol); fruits, birds (life, abundance) in panel images	Distinct mosaic schemes for north/south porticos (simple floral vs. figural rhombi)
ʿUqlat al-Bwydr	Large central circle (baptistery) and smaller circles, semicircles, squares in panels	Baptistery (east room): mosaic (2.80×3.20 m) with central bird in circle and geometric border; left room (diaconicon):	White, black, red tesserae (2×2 cm and 1×1 cm)	Peacock-like bird (resurrection/immortality); unknown adjacent symbol (head partly lost); floral frame	Baptistery mosaic (bird scene) preserved in Aleppo Museum; diaconicon mosaic destroyed by looters

		destroyed, but had repeating sinuous circles and squares within semicircular frames			
Zamka	Animal/plant figures in rows; outer frame of hexagons, squares, triangles; inner frame of floral circles and chain motifs	Western pavement (first mosaic): animals and plants in three horizontal rows, framed in red; inner and outer geometric borders (hexagons, squares, triangles; flower-like circles). Second pavement (under house): fish-scale motif with colored flowers, framed by geometric bands.	Outer red border; interior bands with alternating colors; animal scenes multicolored	Dove (Holy Spirit/peace); two peahens (eternity); bull head (sacrifice, fertility); lion (strength); palm tree (victory over adversaries)	Two adjacent pavements with different designs (fauna vs. geometric scales); floor under modern house not excavated
Tell Bājr	Squares, triangles, rectangles, small rhombuses in Scene 1; Tabula Ansata with cross and concentric circles; octagons with swastikas at corners	Southern portico contains three scenes in sequence: (1) geometric band of squares/triangles (9×2.4 m); (2) dome-like architectural design (2.2×2.2 m); (3) Greek inscription with central cross and colorful concentric circles (Tabula	Scene 1: red, yellow, white, black geometric motifs; Scene 3: central cross with colorful rings, red swastikas on yellow; Bema: colored frames and symbols	Equilateral cross (central Christian symbol); red swastikas in corners (ancient symbol); other Christian crosses in Bema frame; geometric shapes primarily decorative	Damaged central scene (portion of floor lost); main decorative bands and inscriptions remain (Tabula Ansata); Bema frame still in situ

		Ansata). Main nave: central bema with semi-circular frames and crosses (south side) and squares/triangles (north side); remaining central scene lost. Northern portico: repeated octagons/squares (mostly damaged). Apse: corner fragment with rhombus motif.			
ʿElî Bîskê	Interlocking octagons, squares, triangles, semicircles; circular panels with bird motifs	First mosaic (Room 0): circular bird scene and small floral circle within braided frame. Room 1: rectangular 3.5×3.5 m with intersecting elongated octagons containing geometric squares; corners with triangles and floral motifs. Fifth sondage: two circular panels (bird in geometric border; grazing gazelles' scene); remaining floors show partial	Polychrome small limestone tesserae in a harmonious palette	Birds in circular medallions; two gazelles (possibly spiritual/rebirth theme); floral motifs (circle possibly a pomegranate)	Fragmentary inscription (names, date) found; mosaic covered for protection (status unknown)

		geometric/floral patterns.			

Table 2. Comparative Analysis Table of Geometric Motif Mosaic Pavements in Early Byzantine Churches of Aleppo.

COMPARATIVE ANALYSIS TABLE OF ANIMALS AND PLANTS MOTIFS

The table below compares animal and plant motifs in the mosaics of each site. Included are the types of fauna and flora depicted, their arrangement or scenes, and any associated symbolism or interpretation provided.

Mosaic Pavement Site	Animals depicted	Plants depicted	Arrangement/Scene	Symbolism/Interpretation
al-Mazraʿa al-ʿUlia	Leopards, bears, hares, dogs, birds (in a carousel scene)	Rosebuds/floral motifs surrounding animals	Central 'animal carousel' against a white background, animals in motion	The circular movement of the animals helps to bring a sense of activity and vitality to the scene and avoids visual monotony.
Tell al-ʿAmārana Church	None (only geometric/plant motifs)	Rosebuds (background ornament)	(N/A)	(None)
Qinnasrin Monastery (Deir Qannsrīn	No figural animals noted in existing sections	No specific plants noted	(N/A)	(None)
Martyr John's Monastery (Al-Nabgha	Peacocks, deer, bull, and lion in a naturalistic scene	Trees, plants around animals; suggested vegetation theme	Separate 'Natural Environment' panel (wildlife scene)	Spiritual or religious symbolism in animals (peacock, deer, bull) implied
Al-Mankūba	Birds (various species) in rhombuses	Various fruits (grapes, a basket of fruit)	Animals and objects depicted within rhombuses (succession of motifs)	Birds (life), fruits (abundance); crosses (Christian symbol)
ʿUqlat al-Bwydr	Peacock-like bird (baptistry)	None explicitly mentioned (bird motif only)	Baptistery: single bird in circle; Diaconicon: central circular medallion (destroyed)	Peacock (symbol of resurrection/immortality)
Zamka	Two peahens (eternity/rebirth); dove (peace); lion; bull	Grape vines (with peahens); palm tree (spiritual victory)	Three horizontal rows (zoo-animal style): 1) bull head, buds; 2) two peahens with grapes, dove; 3) lion and bull	Peahens and grapes (eternity, rebirth); dove (Holy Spirit/peace); lion (strength); bull (fertility/sacrifice); palm (victory)

Tell Bājr	None	None	(N/A) The southern portico does not depict animals; the focus is on symbols (such as a cross) and geometric shapes.	(None – motifs are geometric or Christian symbols)
ʿElî Bîskê	Birds in circular shapes; two gazelles grazing	Floral motifs (possibly pomegranate) in a small circle; general floral motifs	Two circular scenes discovered: one with a bird in a geometric circle, another with two gazelles	Gazelles (purity/spiritual themes/philosophical themes); birds' scene (symbolizes life)

Table 3. Comparative Analysis Table of Animals & Plants Motif Mosaic Pavements in Early Byzantine Churches of Aleppo.

COMPARATIVE ANALYSIS TABLE OF INSCRIPTIONS

This table displays the inscriptions of the mosaics, including language, content or dedication, placement, and condition. Only sites with inscriptions are listed (others have none).

Mosaic Pavement Site	Language	Content/Dedication	Location (Scene)	Comments
al-Mazraʿa al-ʿUlia	(none)	-	-	-
Tell al-ʿAmārana Church	Greek	Dedication “to the salvation of servants”	Apse (centered around the cross)	Complete Greek inscription, good condition
Qinnasrin Monastery (Deir Qannsrīn	– (none)	-	-	-
Martyr John's Monastery (Al-Nabgha	Syriac	Two Syriac inscriptions detail the builder’s name/ date the mosaic (407 AD)	Displayed at the top of the mosaic, on the eastern side	Complete (Two inscriptions); one giving the date 407 AD, and the second inscription providing information that this construction was built by the abbot of the monastery
Al-Mankūba	Greek	Five-line inscription (incomplete; likely donors or dedication)	Southern room (Diaconicon), central circular scene	Five lines fragmentary; incomplete text
ʿUqlat al-Bwydr	– (none)	-	-	-
Zamka	– (none)	-	-	-
Tell Bājr	Greek	Two Greek inscriptions (one of them is within Tabula Ansata)	Southern portico (Scene 3, Tabula Ansata)	Within a tabula ansata with cross and swastikas (damage absent)
ʿElî Bîskê	Greek	Names of a priest and others; mention of the month Panemos (July) (within Tabula Ansata)	Located on the western side of the site	Highly damaged/fragmentary; partially restored reading

Table 4. Comparative Analysis Table of Inscriptions Mosaic Pavements in Early Byzantine Churches of Aleppo.

COMPARATIVE ANALYSIS TABLE OF TECHNIQUES

This table outlines the technical aspects of each mosaic, including *tesserae* size, material, mortar, and construction method.

Mosaic Pavement Site	*Tesserae* size	Materials	Mortar	Technique/Method
al-Mazraʿa al-ʿUlia	0.9–1.0 cm	Limestone, red brick, colored stones	Lime, gravel, sand, ash	Dense *opus tessellatum* (tight-fit mosaic)
Tell al-ʿAmārana Church	1.0 cm	Stone tesserae (like marble/limestone)	Lime, gravel, sand, ash	*Opus tessellatum*
Qinnasrin Monastery (Deir Qannsrīn	1.0 cm	Stone tesserae (black, white, red, orange)	Lime	*Opus tessellatum*
Martyr John's Monastery (Al-Nabgha	6 mm (very fine)	Stone tesserae (6 mm, multicolored)	(not specified)	Very fine *opus tessellatum/vermiculatum* due to small *tesserae*
Al-Mankūba	1.0 cm	Stone *tesserae*	(not specified)	*Opus tessellatum*
ʿUqlat al-Bwydr	Baptistery: 2×2 cm; Diaconicon: 1×1 cm	White, black, red stone *tesserae*	Lime, gypsum, sand	Stone *Opus tessellatum* (white background)
Zamka	1.0 cm	Limestone *tesserae*	Lime, sand	Stone *Opus tessellatum* (white background)
Tell Bājr	1.0 cm	Limestone *tesserae*	Lime, sand	Stone *Opus tessellatum* with polychrome design
ʿElî Bîskê	1.0 cm	Limestone *tesserae*	Lime, sand	Stone *Opus tessellatum* (white background)

Table 5. Comparative Analysis Table of Techniques: Mosaic Pavements in Early Byzantine Churches of Aleppo.

ICONOCLASM EVIDENCE

Only one site in the study shows clear signs of deliberate iconoclasm. Martyr John's Monastery (Al-Nabgha) exhibits about 30 deliberate iconoclasms, likely dating to mid-8th-century religious conflicts. suggests these acts were ideologically motivated, perhaps by Christians reacting against charges of idolatry. In contrast, Al-Mazraʿa Al-ʿUlia's mosaics show no evidence of Byzantine iconoclasm. Other damage at various sites is attributed to later historical causes (e.g., Islamic-period reuse, looting, or natural degradation) rather than intentional iconoclasm.

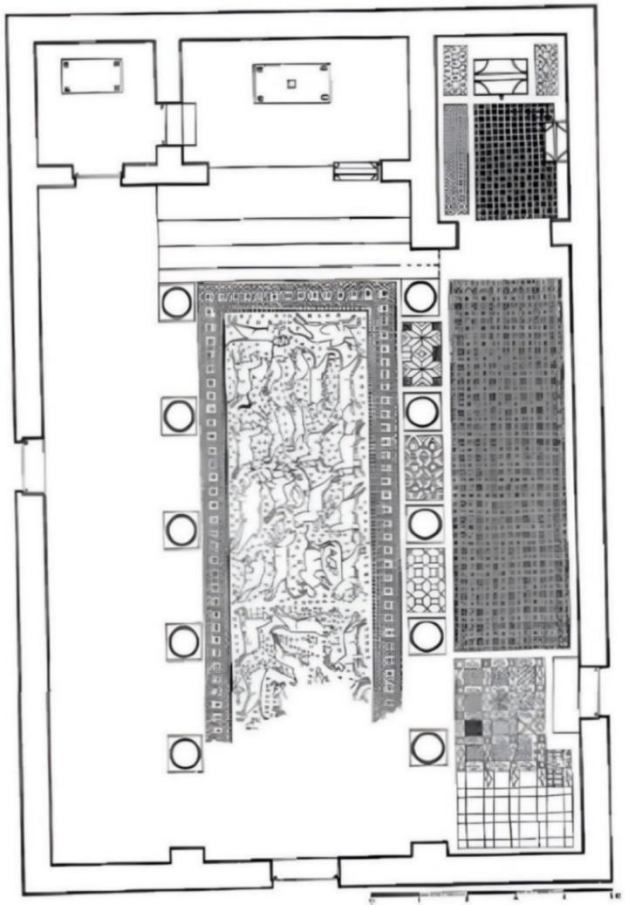
REGIONAL COMPARISON TABLE

This table summarizes the main differences between the mosaic sites of Aleppo and other Byzantine centres such as Antioch, Palestine, and Jordan, focusing on chronology, geography, materials, style, and iconography.

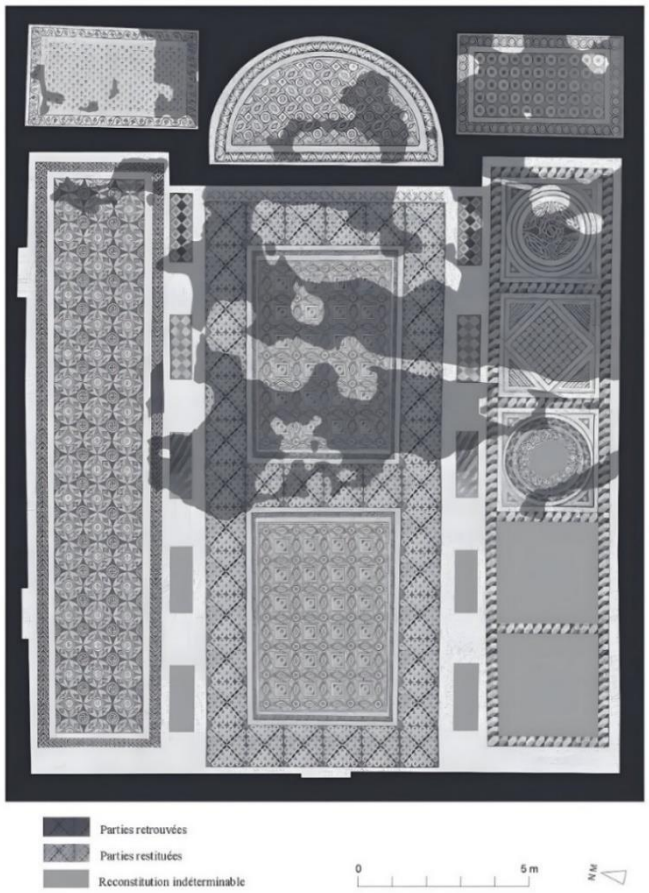
Criterion	Aleppo, Syria	Antioch	Palestine & Jordan
Chronology	5th–6th centuries AD – Early Byzantine prosperity.	4th–5th centuries AD– Hellenistic-Roman continuity.	.6th–7th centuries AD – Peak of narrative Christian mosaics.
Geographical Setting	Inland, limestone-rich, semi-arid environment.	Coastal Mediterranean, access to colored glass.	. Southern Levant, open to trade routes.
Materials & Techniques	Local limestone tesserae, limited palette, precise geometry.	Use of colored glass and marble tesserae.	Mix of stone and glass tesserae, vivid colors.
Artistic Style	(Carpet Style) Geometric abstract style emphasizing symmetry.	Naturalistic, pictorial, classical realism.	Narrative, decorative, biblical storytelling.
Iconography	Vine, peacock, deer, cross.	Hunting scenes, mythic creatures.	Biblical motifs, sacred cities.
Function	Liturgical visual program oriented to the sanctuary.	Decorative, civic, prestige function.	Didactic, devotional narrative.
Overall, Character	Balanced synthesis of northern rigor and southern richness.	Foundational classical model.	Late Byzantine narrative art.

Table 6. Comparative Analysis Table of Mosaic sites of Aleppo and other Early Byzantine centres such as Antioch, Palestine, and Jordan.

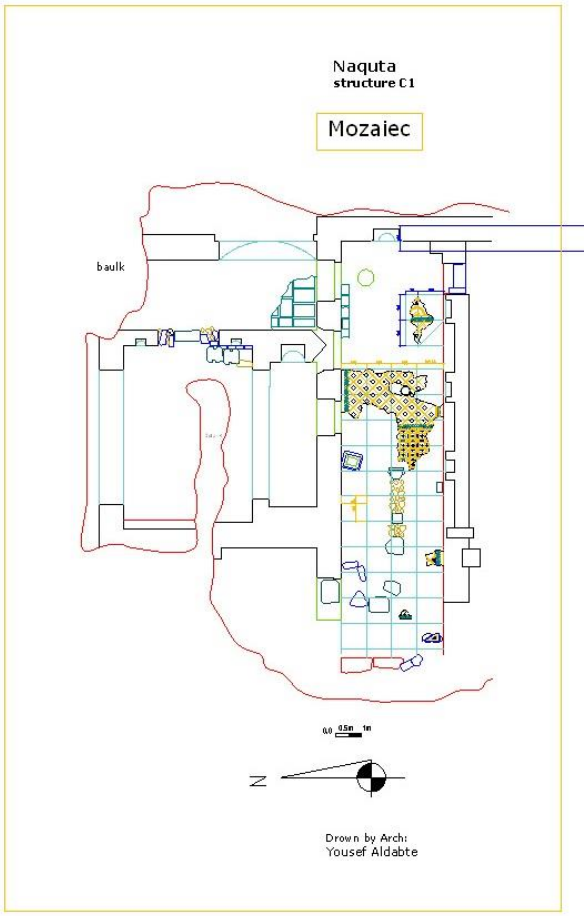
GROUND PLANS AND GENERAL VIEWS OF BYZANTINE CHURCHES IN ALEPPO (SYRIA) (Fig. 178**)**



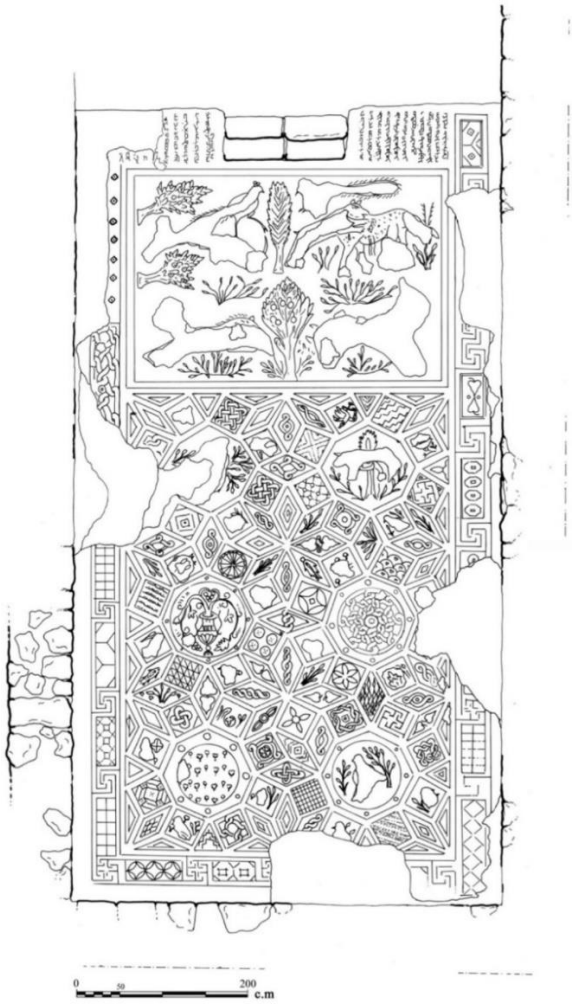
Al-Mazraʿa al-ʾUlia. *(Donceel-Voûte. 1988, A: 185)*



Tell al-ʿAmārana. *(Tunca, Ö., Waliszewski, T. & Koniordos, V. 2011: 46)*



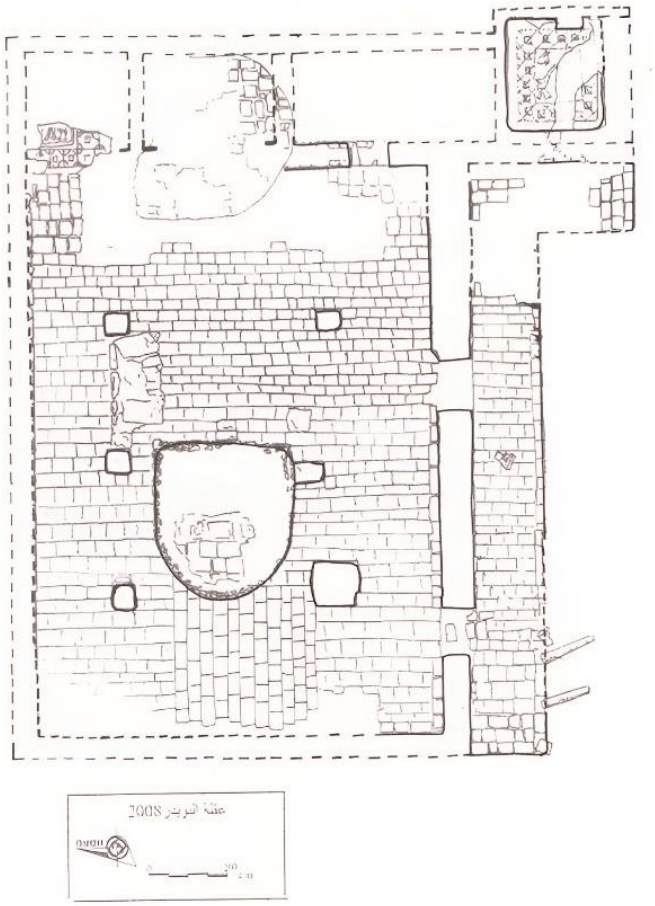
Deir Qannsrin. *(Ḍabty, Y. 2007: 89)*



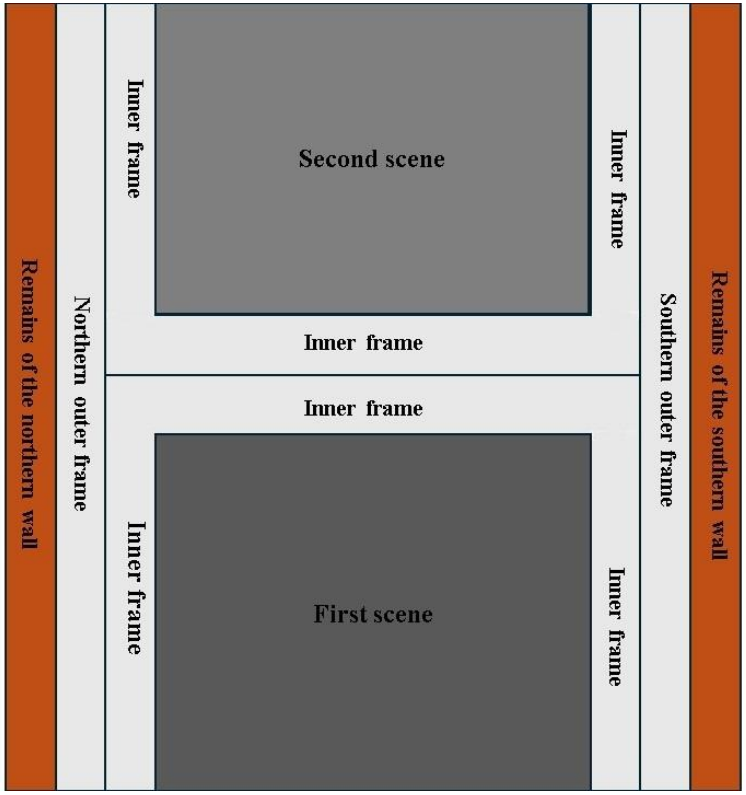
Martyr John's Monastery (Al-Nabgha). *(Balty, J. 2008: 53)*



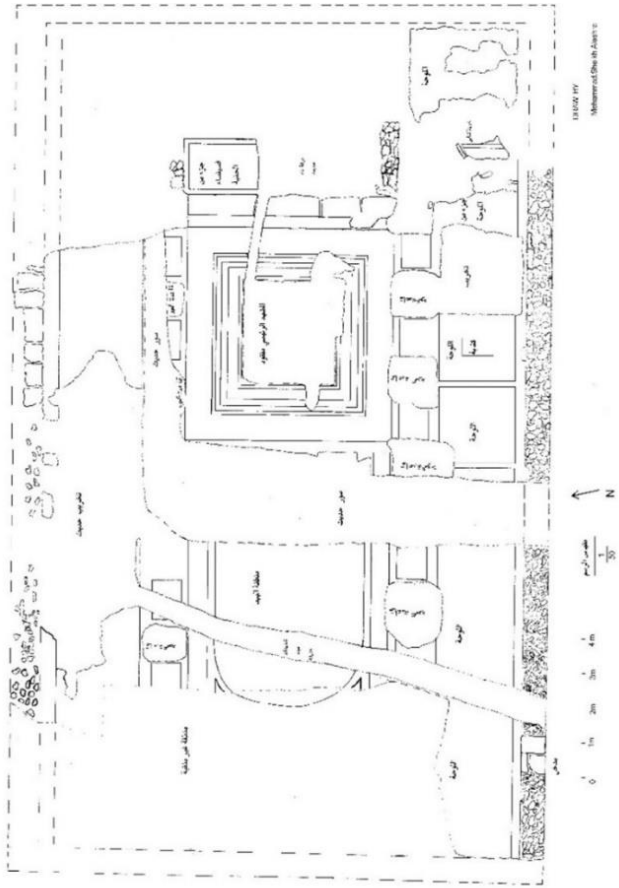
Al-Mankūba. *(Jbaee, M. Al-Taweel, M. Bouza, N. 2010)*



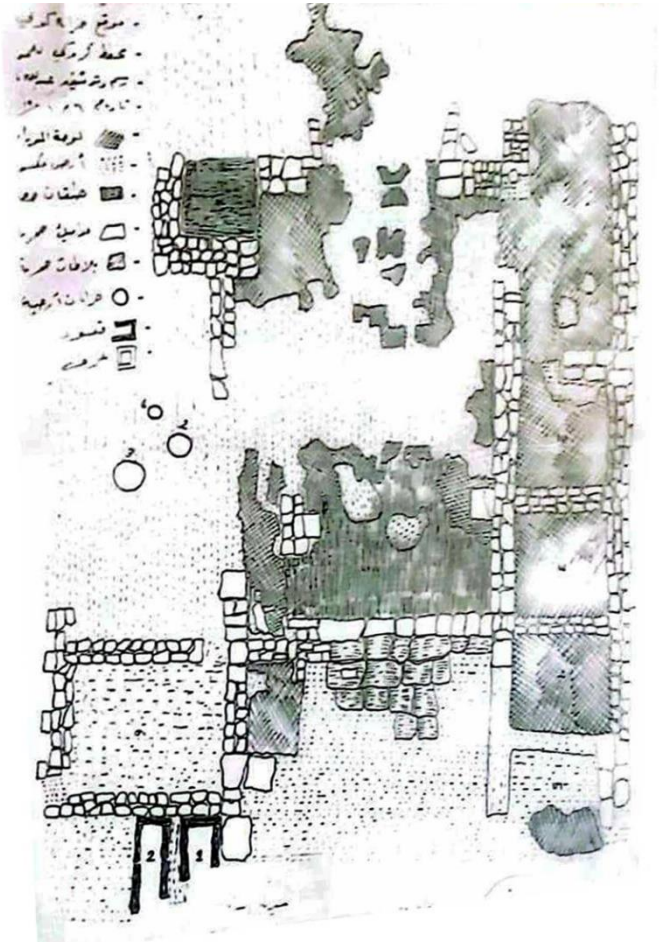
ʿUqlat al-Bwydir. *(Drawing by Fayez Ayyash. Kanjou, Y. 2010: 192)*



Zamka. *(Drawing: Alhaj Ali. F. 2024)*



Tell Bājr. *(by Kanjou, Y. Alhaj Ali, F. 2012:240)*



ʿElî Bîskê. *(Ground plan by Nasser, A. 2015)*



Satellite image of ʿElî Bîskê 24.04.2018 after the Turkish occupation. The metal structure (protective shelter) is still in place.



Satellite image of ʿElî Bîskê site 08.07. 2019 after the Turkish occupation. The protective shelter is not in place. *(Photos: Afrin Antiquities Department)* https://www.facebook.com/search/top/?q=Afrin%20Antiquities%20&locale=hu_HU (21.03.2024)

Fig. 178. Ground plans and general views of Byzantine churches in Aleppo (Syria).

Excavated architectural parts of Byzantine churches with mosaics	*main nave*	*apse*	*porticos*	*bema*	*naves*	*pastophorion*	*courtyard*	*Ground plans*	*Building Raw materials used*	*Remains of wall paintings fragments*
Al-Mazraʿa al-ʾUlia	✓	✓	✓	✓	×	✓	×	✓	Limestone	×
Tell al-ʿAmārana	✓	✓	✓	×	×	✓	×	✓	Limestone	×
Deir Qannsrīn	✓	×	×	×	×	×	×	✓	Limestone	×
Martyr John's Monastery (Al-Nabgha)	✓	✓	×	×	×	×	×	✓	Basalt stone	×
Al-Mankūba	✓	×	✓	×	×	✓	×	✓	×	×
ʿUqlat al-Bwydr	✓	✓	✓	✓	×	✓	×	✓	Basalt stone	✓
Zamka	×	×	×	×	×	×	×	×	×	×
Tell Bājr	✓	✓	✓	×	×	✓	×	✓	×	×
ʿElî Bîskê	×	×	×	×	×	×	×	×	Limestone	✓

Table 7. Excavated architectural parts of Byzantine churches with mosaics. (Alhaj Ali F. 2024)

Main motifs of the excavated mosaic pavements	*Architectural scene*	*Interlace motifs*	*Inscription/ dedication*	*Geometrical scene*	*Floral scene*	*Animal scene*	*Observations on Iconoclasm*
Al-Mazraʿa al-ʾUlia	✕	✓	✕	✓	✓	✓	✕
Tell al-ʿAmārana	✕	✓	✓	✓	✓	✕	✕
Deir Qannsrīn	✕	✓	✕	✓	✕	✓	✕
Martyr John's Monastery (Al-Nabgha)	✕	✓	✓	✓	✓	✓	✓
Al-Mankūba	✕	✓	✓	✓	✓	✓	✕
ʿUqlat al-Bwydr	✕	✕	✓	✓	✕	✓	✕
Zamka	✕	✓	✕	✓	✓	✓	✕
Tell Bājr	✓ dome	✓	✓	✓	✓	✕	✕
ʿElî Bîskê	✕	✓	✓	✓	✓	✓	✕

Table 8. Main motifs of the excavated mosaic pavements. (Alhaj Ali F. 2024)

Treatments performed on the excavated mosaics	*Photo-documen-tation*	*Graphical documen-tation*	*Cleaning*	*Sondage*	*Lifting*	*Reburial*	*Conservation / Restoration*	*Date of excavation*	*Head and team of excavation*	*Head and team of conservation*	*Place of store or display*
al-Mazraʿa al-ʾUlia	✓	✓	✓	✕	✓	✕	✓	1970	R.P. Castellana	Directorate of Antiquities and Museums of Aleppo (restorer Burhān Naʿsānī)	National Museum of Aleppo
Tell al-ʿAmārana	✓	✓	✓	✓	✓	✕	✓	1998	Ö. Tunca	T. Waliszewski-K. Chmielewski-DGAM Team	National Museum of Aleppo & Damascus
Deir Qannsrīn	✓	✓	✓	✕	✓	✕	✕	2005 2006	M. Fakhro, & Y. Dabty	✕	National Museum of Aleppo
Martyr John's Monastery (Al-Nabgha)	✓	✓	✓	✕	✓	✕	✕	2006	Y. Kanjou	✕	National Museum of Aleppo
Al-Mankūba	✓	✕	✓	✕	✕	✓	✕	2008 2010	M. Fakhro - H. Saad (A joint Syrian French mission)	M. Jbaee, M. Al-Taweel, & N. Bouza	Part of the mosaic was reburied in situ.
ʿUqlat al-Bwydr	✓	✓	✓	✓	✓	✕	✕	2010	Y. Kanjou	✕	National Museum of Aleppo
Zamka	✓	✕	✓	✓	✓	✕	✕	2011	Y. Kanjou	✕	National

											Museum of Aleppo
Tell Bājr	✓	✓	✓	✕	✓	✕	✕	2011	Y. Kanjou	✕	National Museum of Aleppo
ʿElî Bîskê	✓	✕	✓	✕	✕	✕	✓	2015	A. Nasser	A. Nasser	In Situ

Table 9. Treatments that performed on the excavated mosaics. (Alhaj Ali F. 2024)



Fig. 179. Poster presentation about the Mosaic of the Tell Bājr Church, south of Aleppo (Syria) in the 12th ICAANE International Congress on the Archaeology of the Ancient Near East, Bologna, 6-10 April 2021. (Alhaj Ali F. 2021).



Fig. 180. Poster presentation about the Mosaic Pavement of the Martyr St John Monastery (Al-Nabgha) in the 14th ICCM Congress Plovdiv, October 24-28, 2022. (Alhaj Ali F. 2022).

CONCLUSION

In conclusion, this study shows that Syria, in general and northern Syria, in particular, serve as important reference points for the study of Byzantine church mosaic pavements, especially those dating between the 4th and 6th centuries AD. The mosaics of Aleppo are not merely material relics but a rich cultural document that expresses an integrated cultural and religious vision in the East. The motif elements examined in this study testify to a high degree of artistic skill. A comparative analysis of the mosaic designs enhances our understanding of the relationships between the Byzantine sites in northern Syria and between these and other Byzantine sites in Syria and the Levant. It also allows us to compare the artistic level of these sites with that of other sites. Similar patterns have also been found at different sites in Syria and Jordan.

The mosaic pavements of Byzantine churches in Aleppo, Syria, present a rich tapestry of historical and cultural significance, as revealed through extensive archaeological excavations and meticulous analysis. This comprehensive doctoral research has provided valuable insights into the diverse motifs, architectural features, and preservation efforts associated with these ancient sites.

Through the examination of various sites such as al-Mazraʿa al-ʾUlia, Tell ʿAmārana, Qinnasrin Monastery, Martyr John's Monastery, Al-Mankūba, ʿUqlat al-Bwydr, Tell Bājr, and ʿElî Bîskê, we have unraveled the intricate patterns of mosaic pavements and their contextual relevance within Byzantine religious and cultural frameworks. Of particular interest are the similarities to motif elements found at Byzantine sites in Aleppo and in several other places in northern Syria from the Byzantine era.

Some designs make their first appearance in the mosaics, such as the surfaces made of the mixed and reapplied tesserae connected to the *Iconoclasm* at the Monastery of the Martyr John (Al-Nabgha), the scene of the dome and the swastika in Tell Bajr, the scene of grazing in ʿElî Bîskê, and the scene of animals running after each other in a circular motion at the mosaic of al-Mazraʿa al-ʾUlia. Some unusually sophisticated ornaments, such as the interlaced squares, the square and curvilinear square interloped, and the knot design, are widely attested.

Mosaic church pavements were designed with great care as they were distinguished by the precision of detail and high craftsmanship in execution and were freed from classical

traditions and influences. The mosaic scenes on church pavements represent a variety of colors, which preserved an atmosphere of splendor to the former spaces.

Each excavation site offers unique glimpses into the artistic expressions, construction materials, and architectural layouts prevalent during the Byzantine era. The absence or presence of architectural scenes, epigraphic inscriptions, floral, geometric, and animal motifs, as well as indications of Byzantine iconoclasm, underscores the diverse influences shaping these mosaic pavements.

Moreover, the meticulous documentation and preservation efforts, including photo-documentation, graphic documentation, cleaning operations, and treatments performed on excavated mosaics, highlight the interdisciplinary approach essential for safeguarding and interpreting this historic legacy.

However, it is crucial to acknowledge the challenges faced by these invaluable artworks, particularly concerning the preservation and fate of mosaic pavements in regions affected by conflict and security instability. The ongoing conflict in Syria has put many Byzantine sites and their mosaics at risk of destruction, looting, and illicit trade. The uncertain future of sites like ʿElî Bîskê, outside the control of the Syrian government, underscores the urgent need for international cooperation in safeguarding and preserving cultural heritage. It is imperative to prioritize the preservation and protection of these cultural treasures to ensure that future generations can continue to appreciate and study the mosaic pavements of the Byzantine churches in northern Syria.

This comparative study not only enhances our understanding of the mosaic pavements in Byzantine churches in Aleppo but also highlights the broader importance of preserving cultural heritage in regions affected by geopolitical turmoil. By continuing to explore, document, and protect these invaluable relics of the past, we honor the rich fabric of human history and safeguard its legacy for future generations. We also hope that the situation in Syria will stabilize, allowing further excavations to provide a clearer picture of the Byzantine mosaics near Aleppo, so that the mosaics stored in the Aleppo Museum can be restored, preserved, and displayed to the public.

ABBREVIATIONS

1. The Forgotten (Dead) Cities is a vast archaeological area with hundreds of Roman and Byzantine-era archaeological villages, churches, and baths. The majority of these sites are dispersed over the Simeon, and Sheikh Barakat mountains in the governorate of Aleppo, and the Barisha, Al-Aala, Al-Zawiya, and Al-Wastani Mountains in the governorate of Idlib.

2. Hasmoneans: relating to the Jewish dynasty established by the Maccabees. Member of the Hasmonean dynasty.

3. Teutons: A member of a people who lived in Jutland in the 4th century BC and fought the Romans in France in the 2nd century BC.

4. Severian dynasty (193–235 A.D.) comprised the relatively short reigns of Septimius Severus.

5. Ariadne, in Greek mythology, daughter of Pasiphae and the Cretan king Minos. She fell in love with the Athenian hero Theseus and, with a thread of glittering jewels, helped him escape the Labyrinth after he slew the Minotaur, a beast half bull, and half man that Minos kept in the Labyrinth.

6. Dionysus is the god of the grape harvest, winemaking, orchards and fruit, vegetation, fertility, festivity, insanity, ritual madness, religious ecstasy, and theatre.[2][3] The Romans called him Bacchus.

7. Oceanus: The ocean is a body of salt water that covers approximately 70.8% of the Earth and contains 97% of Earth's water. An ocean can also refer to any of the large bodies of water into which the world ocean is conventionally divided.

8. Tethys: Thetis is a figure from Greek mythology with varying mythological roles. She mainly appears as a sea nymph, a goddess of water, or one of the 50 Nereids, daughters of the ancient sea god Nereus.

9. *Skeuophylakion*: Located on the north side of the church, *Skeuophylakion* was a place where the sacred objects of religious ceremonies were kept in the early Byzantine times. It is also thought that the building was used by the clergy before they entered the church for the rites.

10. al-Qāshāni: Tile-like ceramic panels are square in shape, with colorful decorations engraved on their surfaces in indigo blue, sky blue, green, and sometimes red. These decorations are surrounded by fine black lines, which makes them stand out against the white background.

11. *Farsakh*: Plural farsakh, a Persian unit of distance equal to about 4 miles; also: a Persian metric unit equal to 10 kilometers or 6.21 miles. Also called fars seng, which means "stone of Persia", which Herodotus and the other Greek authors write as parasanga. https://www.sizes.com/units/farsakh.htm. (01.04.2024)

12. *Pastophorion*: Originally, in the Greek Old Testament, the term *pastophorion* referred to the treasury and the priest's quarters in the Temple of Solomon. Since at least the end of the 4th century, *pastophorion* was a sacristy located in the eastern part of the church building.

13. *Diaconicon*: (Greek: διακονικόν, romanized: diakonikon; Slavonic: diakonik) is, in Eastern Orthodox and Eastern Catholic Churches, the name given to a chamber on the south side of the central apse of the church, where the vestments, books, etc., that are used in the Divine Services of the church are kept (the sacred vessels are kept in the prothesis, which is on the north side of the sanctuary). Diaconicon and prothesis are collectively known as *pastophoria.*

14. DGAM: The Directorate-General for Antiquities and Museums (DGAM); is a Syrian government-owned agency that is responsible for the protection, promotion, and excavation activities in all sites of national heritage in the country. The Directorate was established after Syria's independence in 1946 under the central supervision of the Ministry of Culture.

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