

The Geometric Mosaic of the Bath at Khirbet Yajuz: A Comparative Study

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KHIRBET YAJUZ in central Jordan, a bath dating to the Byzantine period, has been found to contain impressive and well-preserved mosaics. The Yajuz mosaicists expertly combined motifs with a long tradition, some going back to the Roman imperial age and earlier, and at the same time created designs that appear here for the first time. This study is concerned with the geometric decorations. Our purpose is to examine the details of the designs and compare other pavements from the Roman and Byzantine periods where influences in design within and between regions can be seen. Wherever possible, comparative examples have been chosen from sites that are relatively nearby so as to establish an overview of mosaic production in the region, but also to distinguish the influences coming from Asia Minor and other areas.

At Khirbet Yajuz (*fig. 1*), 11 km. northwest of Amman and about 809 m. above sea level, is one of the most important structures with geometric mosaic pavements in Jordan. The location was visited and described by Selah Merrill in 1876, Major C. R. Conder in 1881, C. McCown, and N. Glueck.¹ One of the first who detailed the archaeological remains in the area was Henry Thompson, who excavated a tomb at the site.² In 1994 excavations were begun by the Jordanian Department of

¹ S. Merrill, *East of the Jordan* (London 1881) 277–278; C. Conder, *The Survey of Eastern Palestine I* (London 1889) 279; C. McCown, “Spring Field Trip,” *BASOR* 39 (1930) 12–13; N. Glueck, “Explorations in Eastern Palestine III,” *AASOR* 28–29 (1939) 177–178.

² H. Thompson, “A Tomb at Khirbet Yajuz,” *ADAJ* 17 (1972) 36–45.

Antiquities,³ and continued to the summer of 2011 under the Department of Antiquities and the University of Jordan.

This site was occupied during the Roman, Byzantine, and Islamic times. It was built up in the late Roman period on the ancient road between Philadelphia and Gerasa, flourished in Byzantine times, and continued into the Umayyad and Abbasid periods. Churches, public buildings, wine presses, tombs, and other finds have been uncovered. These include mosaic floors and various types of pottery, glass, and coins.⁴



Figure 1: The Khirbat Yajuz site

The Bath was discovered in 1998 in the southeastern part of the site. The Faculty of Archaeology and Tourism conservation team was directed by Dr. Mahmoud Arinat.⁵ The building (*fig. 2*) had two main rooms, with carved basins and canals. The Bath is dated to the Byzantine period by comparative study of the

³ M. Suleiman, "A Short Note on the Excavation of Yajuz 1994–1995," *ADAJ* 40 (1996) 457–462.

⁴ H. Thompson, "A Tomb at Khirbet Yajuz," *ADAJ* 17 (1972) 36–45; L. A. Khalil and F. M. al-Nammari, "Two Large Wine Presses at Khirbet Yajuz, Jordan," *BASOR* 318 (2000) 42–57.

⁵ For a preliminary description and an account of the conservation methods see M. Arinat, "In Situ Mosaic Conservation: A Case Study from Khirbet Yajuz, Jordan," *Mediterranean Archaeology and Archaeometry* 14.2 (2014) 67–76.



Figure 2: Bath, Khirbet Yajuz



Figure 3: The mosaic room

pattern and technique of the mosaic. Mosaics were found in other buildings on the site, such as one in the Chapel dating to A.D. 508.⁶

The mosaic floor of the Bath (*figs. 3, 4*) measures approximately 4 x 5 m. It was typical of large mosaic pavements to have a bed composed of several layers: first a compacted layer of local red earth, then a layer of small round pebbles packed closely together and covered with a layer of ash and lime mortar. This

⁶ L. A. Khalil, "Excavations at Yajuz," *ADAJ* 42 (1998) 457, 463, fig. 7.

smooth bed covered the whole area, to a thickness of 13 cm. A layer of wet lime plaster, on average 1 cm. thick, was spread over this, and the tesserae were laid into the plaster.

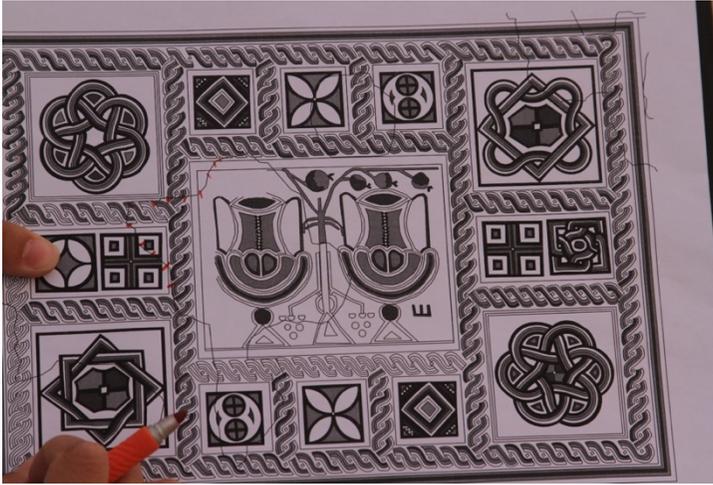


Figure 4: drawing, Yajuz Bath mosaic

The geometric mosaic is one of the most distinctive in the religious and civil buildings of Byzantine Jordan. This article addresses the designs in comparison with other work of Roman and Byzantine date. We have classified the decorative elements into eight main types: interlaced squares motif; square and curvilinear square interlooped; looped circle in square; crosslet; knot; diamond; overlapping circles; circle crosslet.

Interlaced squares motif

The motif consists of two interlaced squares, the colors grey, red, dark red, white, orange, on a white background (*fig. 5*). Similar decoration can be found at other Jordanian sites of the Byzantine period, for example in the Baths of Herakleides at Gadara (*fig. 6*),⁷ and farther afield at Hadadine in Syria, now in

⁷ U. Lux, "Der Mosaikfussboden eines spätantiken Bades in Umm Qes," *ZDPV* 82 (1966) 64–70; M. Piccirillo, *The Mosaics of Jordan* (Amman 1997) 328, pl. 686.

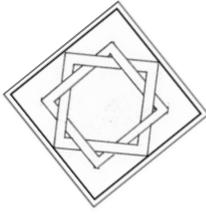


Figure 5: Bath, Yajuz

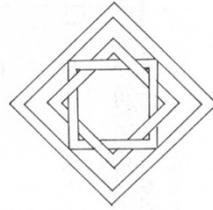


Figure 6: Baths of Herakleides,
Gadara

the Aleppo Musum, which dates to the sixth century.⁸

Significantly, this motif is a good deal older, found already in the Hellenistic period and frequent throughout Roman times. An example in the northern Levant is in the Bath of Apolausis at Antioch, which dates to the Roman period:⁹ with a woman at the centre, the design's colors are white veined with blue, black, shades of red, and yellow, on a white background. Two examples are from North Africa: in the Four Seasons mosaic in House of Dionysus at Volubilis in Morocco, which dates to the Roman period;¹⁰ and in a mosaic from Carthage, now in the British Museum, which dates to the third century.¹¹ In the latter, the polygons of two interlaced squares are decorated with two simple guilloches; the colors are red, dark red, and white, on a dark blue and white background. The pattern is also known in Roman Britain: in the Wellow Villa, with interlaced squares again decorated with two simple guilloches; and in the villa at Wemberham.¹²

⁸ P. Donceel-Voute, "Syro-Phoenician Mosaics of the 6th Century," in *Fifth International Colloquium on Ancient Mosaics II* (Ann Arbor 1995) 91, 93, fig. 4.

⁹ A. Belis, *Roman Mosaics in the J. Paul Getty Museum* (Los Angeles 2017) 44, fig. 19.

¹⁰ R. Etienne, "Dionysos et les quatre saisons sur une mosaïque de Volubilis (Maroc)," *MEFR* 63 (1951) 93–118, pl. I.

¹¹ M. Alexander and M. Ennaifer, *Corpus des mosaïques de Tunisie I.1* (Tunis 1973) 116, pl. XLVII.

¹² www.british-history.ac.uk/vch/som/vol1/pp289-356, figs. 71 and 67.

Square and curvilinear square interlooped motif

The motif consists of a square interlaced by a curvilinear square, forming an irregular octagonal so as to resemble a crosslet shape (*fig. 7*). The colors are grey, red, dark red, white, and orange, on a white background.



Figure 7: Bath, Yajuz



Figure 8: Second Church at Yasileh

We can compare a design in the Second Church at Yasileh in Jordan, dating to 528 (*fig. 8*).¹³ Similar schemes are known elsewhere in Jordan: in the church of the Prophets, Apostles, and Martyrs at Gerasa, in reverse (*fig. 9*), dating to 464,¹⁴ and in the Baths of Herakleides at Gadara (*fig. 10*).¹⁵ An example in Anatolia is in House 2 at Aphrodisias, dating from the mid-fifth century.¹⁶

Looped circle in square motif

The panel at the right as one enters is composed of a looped circle within a square (*fig. 11*). The colors are red, dark red, and white, on a dark blue and white background.

¹³ Z. al-Muheisen and M. Nassar, "The Second Church at Yasileh in Jordan and its Mosaics," *GRBS* 52 (2012) 675, fig. 13.

¹⁴ Piccirillo, *Mosaics* 285.

¹⁵ Lux, *ζDPV* 82 (1966) 64–70; Piccirillo, *Mosaics* 328, pl. 686.

¹⁶ S. D. Campbell, *The Mosaics of Aphrodisias in Caria* (Toronto 1991) 20–21, pl. 73; K. Erim, "Aphrodisias in Caria: The 1972 Campaign Excavations," *TürkArkDerg* 21 (1974) 37–52.

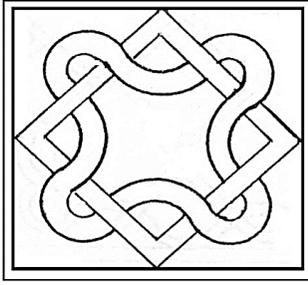


Figure 9: Church of the Prophets, Gerasa

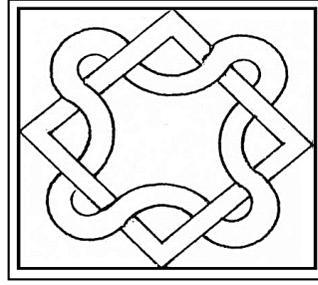


Figure 10: Baths of Herakleides, Gadara



Figure 11: Bath, Yajuz



Figure 12: Second Church, Yasileh

This motif became widespread in Jordan during the Byzantine period. Examples are in the Second Church at Yasileh, of 528 (*fig. 12*);¹⁷ in the Baths of Herakleides in Gadara (*fig. 13*);¹⁸ in the Church of Saints Cosmas and Damian at Gerasa, of 533 (*fig. 14*);¹⁹ in the Church of Saint Mary at Rihab, of 582/3 (*fig. 15*);²⁰ in the Church of the Salayta Family at Madaba (Byzantine);²¹ also at Madaba, in the church of the Virgin Mary, dating to the

¹⁷ Al-Muheisen and Nassar, *GRBS* 52 (2012) 675, *fig. 13*.

¹⁸ Lux, *ZDPV* 82 (1966) 64–70; Piccirillo, *Mosaics* 328, pl. 686.

¹⁹ Piccirillo, *Mosaics* 288, pl. 535.

²⁰ M. Avi-Yonah, “Greek Christian Inscriptions from Rihab,” *QDAP* 13 (1947/8) 68–72; M. Piccirillo, “Le antichità di Rihab dei Bene Hasan,” *Liber Annuus* 30 (1980) 317–350, and *Mosaics* 310–311, pl. 622.

²¹ Piccirillo, *Mosaics* 132, pl. 158.

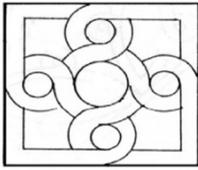


Figure 13: Baths of Heracleides, Gadara

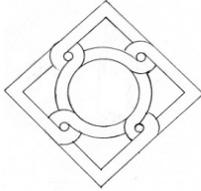


Figure 14: Cosmas and Damian, Gerasa

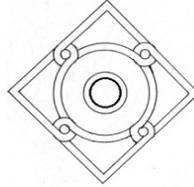


Figure 15: Saint Mary, Rihab

eighth century,²² where the pattern is decorated with a Solomon knot motif.

Farther away, we find a Roman-date example in the Apolausis at Antioch, where the center of the looped circle is a bird; the colors are white veined with blue, black, shades of red, and yellow, on a white background.²³ Finally, there is an example in Moesia, in the south basilica in Marcianopolis, dating to the fifth or sixth century.²⁴



Figure 16: Bath, Yajuz

²² M. Piccirillo, “La chiesa della Vergine a Madaba,” *Liber Annuus* 32 (1982) 373–408, and *Mosaics* 50, pl. 2.

²³ Belis, *Roman Mosaics* 43, fig. 17.

²⁴ J. Valeva, “Geometric Mosaics from Bulgaria,” in *Fifth International Colloquium* 260–261, fig. 12.

Crosslet motif

This motif consists of a crosslet within large square and defined by four smaller squares, each of these framing a still smaller square (*fig. 16*). The colors are black, dark red, and yellow, on a white background. It seems this design is found in the area only during the Byzantine period, with one example from Syria, in the Oum Hartaine Basilica, dated to 500.²⁵

Knot motif

The knots portrayed in two of the corners of the mosaic are made up of three interlaced lozenges, forming curvilinear irregular triangles and a curvilinear hexagonal, once with an apparent crosslet in the center, once without (*fig. 17*). The colors are red, dark red, blue, and dark blue, against a white background.



Figure 17: Bath, Yajuz

Many parallels are found in Byzantine churches in Jordan: in Gerasa in the Church of Saints Cosmas and Danian (*fig. 18*), of 533,²⁶ and the Church of Bishop Isaiah (*fig. 19*), Byzantine in date;²⁷ in the Gerasa area, in the Chapel of Khirbat Munyah-Asfur (*fig. 20*), also Byzantine.²⁸ This last decorates the motif with ribbons and two simple guilloche patterns.

²⁵ Donceel-Voute, in *Fifth International Colloquium* 88–89, fig. 1.

²⁶ Piccirillo, *Mosaics* 286, pl. 535.

²⁷ Piccirillo, *Mosaics* 294, pl. 566.

²⁸ Piccirillo, *Mosaics* 299, pl. 588, 589.

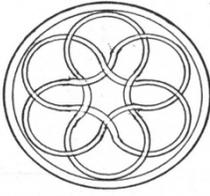


Figure 18: Cosmas and Damian, Gerasa

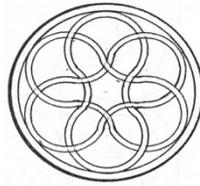


Figure 19: Bishop Isaiah, Gerasa

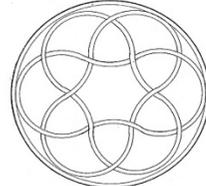


Figure 20: Chapel of Munyaih-Asfur Khirbat

We find two further examples from the Madaba area. One is in the Crypt of Saint Aelianus, dated 595/6 (fig. 21).²⁹ There the curvilinear triangles and hexagonal are filled by six pear seeds and seven pomegranate seeds; the colors are red, dark red, gray, and white on a black background. The other is in the Memorial of Moses-Diakonikon at Mount Nebo, of the Byzantine period (fig. 22).³⁰ There the knot, with four lozenges, is more elaborate than at Yajuz; the centre is occupied by a bunch of grapes. The colors are black, grey, dark red, and yellow, on a white background.



Figure 21: Crypt of Saint Aelianus, Madaba



Figure 22: Memorial of Moses-Diakonikon

²⁹ Piccirillo, *Mosaics* 124–125, pl. 136.

³⁰ S. Saller, *The Memorial of Moses on Mount Nebo* (Jerusalem (1941); V. Corbo, “Nuovi scavi archeologici nella cappella del Battistero della Basilica del Nebo,” *Liber Annuus* 17 (1967) 241–258, and 20 (1970) 273–298; M. Piccirillo, “Campagna archeologica nella Basilica di Mose Profeta,” *Liber Annuus* 26 (1971) 281–318, and *Mosaics* 147, pl. 184, 186.

Significantly, this motif is a good deal older, attested in the Hellenistic period and common in Roman times. An example from North Africa is from a house in Timgad, now in the Museum of Timgad.³¹

Examples in Jordan more developed than those at Yajuz and elsewhere are in the Church of Bishop Leontios at Ya'amun, two panels of the late fifth/early sixth century (*fig. 23*):³² in them the knot is tied with loops, which are not found at Yajuz, and the hexagonal has a stylized cluster of grapes; the colors are black, grey, dark red, and yellow, on a white background.



Figure 23: Church of Bishop Leontios at Ya'amun

Diamond motif

The diamond motif consists of two nested diamonds framed by a square (*fig. 24*). The colors are black, grey, red, dark red, and yellow, against a black background. In general, the diamond pattern here is rare in the region during the Byzantine period. Examples are in the First Church at Khirbet al-Bediye, which dates to 640,³³ and the Church of Bishop Leontios at Ya'amun (end of the fifth/beginning of the sixth century).³⁴

³¹ S. Germain, *Les mosaïques de Timgad* (Paris 1969) 25, pl. 9.

³² M. Nassar and N. Turshan, *GRBS* 52 (2012) 220–221, fig. 5.

³³ M. Nassar and Z. al-Muheisen, “Geometric Mosaic Ornament at Khirbet al-Bediye, Jordan,” *GRBS* 53 (2013) 609, fig. 20.

³⁴ M. Nassar and N. Turshan, “Geometrical Mosaic Pavements of the Church of Bishop Leontios at Ya'amun,” *PEQ* 143 (2011) 41–62.



Figure 24: Bath, Yajuz

Overlapping circles motif

The pattern consists of a square framing four spindles that form a concave square, almost a crosslet (*fig. 25*). The colors are black, white red, and dark red, against a white background. The intersecting circles motif became widespread in Jordan during the Byzantine period: thus at Mount Nebo in the south funerary chapel, dating to the Byzantine period,³⁵ the colors are red, dark red, and black, against a white background. Examples are in the nearby Khirbet al-Bediyeh church, dating to 640,³⁶ and the church of Bishop Leontios at Ya'amun.³⁷

Furthermore, a variant use of intersecting circles is employed in another panel of the Yajuz mosaic (*fig. 26*).



Figure 25: Bath, Yajuz



Figure 26: Bath, Yajuz

³⁵ Piccirillo, *Mosaics* 144–145, pl. 181.

³⁶ Nassar and al-Muheisen, *GRBS* 53 (2013) 605, 607, figs. 14, 18.

³⁷ Nassar and Turshan, *PEQ* 143 (2011) 41–62, fig. 21.

Circle crosslet motif

The pattern consists of a square tangent to a circle, within which are two smaller circles with crosses inside (*fig. 27*). The colors are black and yellow, on a white background. This design seems to have been quite rare, without parallels in the area.



Fig. 27: Bath, Yajuz

We end by illustrating the one non-geometric panel of the Khirbet Yajuz mosaic, which portrays two amphoras flanking a pomegranate tree (*fig. 28*).



Figure 28: Bath, Yajuz

Conclusions

This study shows that Jordan is an important point of reference for the study of Byzantine mosaic pavements, especially those dating to the sixth and seventh centuries. The decorative elements discussed here show a high level of skill. Comparative study of the designs adds to our understanding of the relationship between Yajuz and other Byzantine sites, and also allows us to compare the artistic level seen at other sites. Similar designs have been found elsewhere in Jordan, as well as farther afield. Of particular interest are the similarities to elements found at Rihab and at several other places in the eastern Mediterranean, from both Roman and Byzantine times

Some designs make their first appearance in the mosaics at Yajuz—the crosslet pattern (*fig. 16*), the knot with crosslet (*fig. 17*), and the circle crosslet (*fig. 27*). Some unusually sophisticated ornaments, such as the interlaced squares (*fig. 4*), the square and curvilinear square interlooped (*fig. 6*), and the knot design (*fig. 16*), are widely attested.

From this comparative study it is possible to say that there are many shared elements, indicating cooperative knowledge on the part of these artistic projects, widely spread during the Byzantine period. The authors hope that these findings will contribute to the study of this significant phenomenon.

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