# Geometric Mosaic Ornament at Khirbet al-Bediyeh, Jordan 

## Mohammad Nassar and Zeidoun al-Muheisen

KHIRBET AL-BEDIYEH in northern Jordan has revealed a church, dated to A.D. 640, in which we have uncovered one of the most impressive and best preserved mosaic pavements with geometric patterns in the Near East. The Khirbet al-Bediyeh mosaicists were masters of their craft. They combined motifs that had enjoyed a long popularity since the early Imperial period with new designs appearing here for the first time, so far as is known.

The 'First Church' of Khirbet al-Bediyeh is accordingly one of the most important sites with a geometric mosaic pavement in Jordan, and is thus worth a case study. Our purpose is to examine the details of the geometric designs and compare other pavements from the Roman and Byzantine periods, where influences in design within and between regions are known. Wherever possible, comparative examples have been chosen from sites that are relatively nearby so that a comprehensive overview of mosaic production in the region may be obtained. Moreover, every effort has been made to discern the major sources of influence on mosaic production at Khirbet alBediyeh and, in particular, to distinguish the influences coming from Asia Minor and other locations of the Classical, Hellenistic, and Roman periods.

Al-Bediyeh and Ras ad-Deir are neighboring tells, 15 km . southwest of Ajloun and 3 km . southeast Kufranjeh, which is also an archaeological site (fig. 1). Gerasa is 20 km . to the east, and Pella, in the Jordan Valley, is about the same distance. Nearby are the Kufranja and Rajib valleys with their many water sources (about 1000 wells), used for farming in summer.

Greek, Roman, and Byzantine Studies 53 (2013) 591-609
© 2013 Mohammad Nassar and Zeidoun al-Muheisen


Figure 1. The Khirbet al-Bediyeh site
Khirbet al-Bediyeh is a tell dominating its surroundings, with valleys on all sides (fig. 2). The site is ca. 900 m . above sea level. The most important archaeological remains are on and around it the main tell. Because of modern agricultural use, many archaeological remains have been lost or destroyed. Still, the remains are considerable, though badly preserved.


Figure 2. Khirbet al-Bediyeh tell from the west
The region of al-Bediyeh was visited and described by some travelers during the nineteenth and twentieth centuries. One of the first who noted archaeological remains was Steuernagel, who mentioned the presence of an ancient church. Subsequent excavations uncovered the four walls of a small church, and many pottery fragments in the area that indicated dense settlement from the Umayyad to the Ottoman period. During his trip to the Ajloun region in October 1896, Schumacher visited al-Bediyeh and emphasized the importance of the archaeological remains. ${ }^{1}$ The al-Badiyyah area was also described by Mittmann, who worked in the region between August 1963 and January 1966. ${ }^{2}$ He confirmed the results mentioned by Steuernagel, that the area contained the remains of a church and much pottery, dating these remains to the first through the sixth century.

The Faculty of Archaeology and Anthropology excavation team started their work in this region in 1998, directed by Prof.
${ }^{1}$ D. C. Steuernagel, "Der 'Adschlūn," ZDPV 48 (1925) 201-392, at 322324.
${ }^{2}$ S. Mittmann, Beiträge zur Siedlungs- und Territorialgeschichte des nördlichen Ostjordanlandes (Wiesbaden 1970) 84, 230.

Zeidoun al-Muheisen of the Archaeology Department in the Institute of Archaeology and Anthropology which later became the Faculty of Archaeology and Anthropology, Yarmouk University. The excavation work was in al-Bediyeh from 1998 until 2003 and in Ras ad-Deir in 2005. The main results were the discovery of remains of Hellenistic, Roman, Byzantine, and Islamic date: churches, a chapel, caves, various constructions, a mosque, and cemeteries. The mosaic pavements in the First Church are badly preserved. The most important part of this floor is the area in front of the chancel step (fig. 3), which contains a panel framing a five-line Greek inscription dating the construction to the year 703 (A.D. 640):


Figure 3. El-Bediyeh Church, Greek inscription

|  |
| :---: |
|  |  |
|  |  |
|  |  |
|  |  |



Figure 4. Restored plan of mosaic pavement of the First Church at Khirbet Al-Bediyeh
The panel is surrounded by a continuous frame of medallions with a repeated rosette and various images such as birds,
squares filled with several colors, grapes -images from the local environment.

The plan of the church (fig. 4) is that of a typical basilica. It measures 17.40 m . on the north side and 16.20 on the south (exterior length); the interior lengths are 15.00 on the north and 14.10 on the south. The west wall is 9.60 (interior) and 10.60 (exterior). The church possesses an apse, chancel, nave, and side aisles. All parts of the church were covered with mosaic pavements, ${ }^{3}$ although it is mainly the areas with geometrical patterns that survive.

## The apse and chancel: Squares and diamonds pattern

The apse of the church is 2.35 m . deep and 3.75 wide; the chancel measures $4.70 \times 2.80 \mathrm{~m}$.. Their mosaic floor is enclosed by plain strip border motif (fig. 5).

Figure 5: Plain strip motif
The enclosed geometric pattern consists of squares and diamonds (fig. 6). This multicolored mosaic carpet uses white, red, orange, and black colors. This pattern also was used in the southern room. This motif is also found elsewhere, such as in the intercolumniations in the First Church at Yasileh, and the south aisle in the Yáamun church. ${ }^{4}$

[^0]

Figure 6: Apse and chancel, squares and diamonds
The nave
The nave mosaic of the church is 5.65 m . wide and 10.20 long; three column bases border each side. The mosaic is enclosed within a double border, the outer a double guilloche motif, the inner a meander motif.

## Double guilloche motif

The outer border extending around all four sides consists of a tongued double guilloche motif (fig. 7). ${ }^{5}$ Similar motifs can be found at other sites in Jordan dating to the Byzantine period, for example in the north aisle of the Church of Procopius at Gerasa (A.D. 526). ${ }^{6}$

There are two similar examples in the Madaba area: the lower mosaic of the old Diakonikon Baptistry at Mount NeboSiyagha (A.D. 530), ${ }^{7}$ and at Umm al-Rasas in the south aisle of the Church of the Lions ( 574 or 589). ${ }^{8}$ We find an example in

[^1]

Figure 7. Outer border of the nave, double guilloche
the lower floor of the church at Pella (Tabaqat Fahal), dating from the Byzantine period. ${ }^{9}$ The double guilloche motif also appears in the south aisle of the Lower Church of Quwaysmeh at Amman (717/8)..$^{10}$ The pattern is also known from Israel, in the Roman villa at Lod (Lydda) near Tel Aviv (ca. 300), ${ }^{11}$ in the Yaphia mosaic (fourth to sixth century), ${ }^{12}$ and in the north aisle of the St. Elias church at Kissufim (sixth century). ${ }^{13}$

Three examples are found in the northern Levant at Antioch: in the Byzantine phase of the temple of Aphrodite; ${ }^{14}$ the mosaic of Ananeosis (fifth century); ${ }^{15}$ and in the Yakto Complex, upper level room B, the mosaic of Megalopsychia (ca.

[^2]450). ${ }^{16}$ An instance in Dacia is at Apulum, of Roman imperial date. ${ }^{17}$

Significantly, this motif is quite old, already in use in the Hellenistic period and a common design throughout the Roman period. An example from Egypt is the Shatby Stag Hunt from Alexandria (third century B.C.). ${ }^{18}$ Another is in the Agora of the Italians on Delos (130-88 B.c.). ${ }^{19}$ Finally, in Britain we find the motif in the Lion Mosaic at Verulamium (second century) ${ }^{20}$ and in a villa with numerous mosaics at Hemsworth (fourth century). ${ }^{21}$

## Meander motif

The inner border of the nave consists of a meander pattern (fig. 8). Similar motifs can be found at other sites in Jordan, for example, in the northern chamber of the Second Church at Yasileh (528) and in the chancel of the Ya amun church. ${ }^{22} \mathrm{~A}$ similar design is in the Church of Lions at Umm al-Rasas. ${ }^{23}$ At

[^3]Gerasa are examples in the Church of John the Baptist (531) ${ }^{24}$ and the Church of Bishop Isaiah (Byzantine). ${ }^{25}$ Another is in the central part of the church at Pella (Byzantine). ${ }^{26}$


Figure 8. Inner border of the nave, meander motif
The nave
The nave is decorated with two panels; the first has a looped motif, the second a composite pattern.

## Looped circles and squares motif

The mosaic of the panel at the eastern end of the nave is composed of looped circles and squares (fig. 9): nine circles and squares, each circle joining an outer and inner square, surround the Greek inscription.


Figure 9. Eastern panel of the nave, looped pattern
Similar decoration can be found at other Jordanian sites of the Byzantine period, for example in the north aisle of the church of Saint George at Khirbet as-Samra (637); ${ }^{27}$ in the
${ }^{24}$ G. H. Kraeling, Gerasa (New Haven 1938) 325, pl. LXVI; Piccirillo, Mosaics of Fordan 288, pl. 506.
${ }^{25}$ V. A. Clark, "The Church of Bishop Isaiah at Jerash," in F. Zayadine (ed.), Ferash Archaeological Project 1981-1983 I (Amman 1986) 303-341; Piccirillo, Mosaics of Fordan 294, pl. 565.
${ }^{26}$ Smith, Pella II 140, pl. 14; Piccirillo, Mosaics of Jordan 330, pl. 703.
${ }^{27}$ J.-B. Humbert, "Khirbet es-Samra du diocèse de Bosra," in G. G. Bottini et al. (eds.), Christian Archaeology in the Holy Land. New Discoveries. Essays
nave and southern aisle of the church of Bishop Leontios at Yáamun (late V to early VI); ${ }^{28}$ and at Yasileh in the First Church (mid V to early VI). ${ }^{29}$ Farther afield, motifs of looped circles are in rooms 3 and 4 of the Priest's House at Aphrodisias in Caria (late V); ${ }^{30}$ and in the House of the Phoenix at Antioch (sixth century). ${ }^{31}$


Figure 10: Nave, composite pattern

## Composite pattern

The second and larger panel of the nave has ten octagons joining squares and circles in looped motifs ( fig. 10). It seems that in the ten octagons there were figurative motifs which have been removed by iconoclasts. Quite a similar example is at

[^4]Rehab (fig. 11), in the nave of the Church of Saint Mary $(582 / 3),{ }^{32}$ but there the patterns are more intertwined than at Khirbet al-Bediyeh.


Figure 11: Rehab, Church of Saint Mary
The southern intercolumniations
In the southern intercolumniations are three panels: deferens motifs; a multi-swastika meander motif; intersecting circle and squares and circles interlooped. An outer border of serrated saw-tooth pattern frames the eastern first panels of each side of the nave (fig. 12). ${ }^{33}$

[^5]

Figure 12. Eastern intercolumniations, saw-tooth pattern
Many parallels are found in Byzantine churches in Jordan: for example, the outer border of the inscription in the Ya amun church; ${ }^{34}$ in Church II at Yasileh; ${ }^{35}$ in the chancel of the Church of the Lions at Umm al-Rasas; ${ }^{36}$ in the southeast corner of the nave of the Church of the Virgin Mary at Madaba (eighth century); ${ }^{37}$ in the chancel of the North Church at Hesban (Esbus) (Byzantine); ${ }^{38}$ at Massuh near Hesban in the nave of the Lower Church (Byzantine); ${ }^{39}$ at Gerasa the border of the inscription in the church of Saints Cosmas and Damian (533), ${ }^{40}$ and a similar border at Rihab in the church of Mary (533); ${ }^{41}$ and in the central nave of the church of Pella. ${ }^{42}$

## Multi swastika-meander

The geometric pattern of the eastern panel (fig. 13) has an outer border around recessed-returned swastikas that divide squares containing birds.
${ }^{34}$ Nassar and Turshan, PEQ 143 (2011) 44, fig. 2.
${ }^{35}$ Al-Muheisen and Nassar, GRBS 52 (2012) 676.
${ }^{36}$ Piccrillo, Liber Annuus 39 (1989) 266-268; Mosaics of Jordan 236, pl. 338.
${ }_{37}$ M. Piccirillo, "La chiesa della Vergine a Madaba," Liber Annuus 32 (1982) 373-408; Mosaics of Jordan 64, pl. 21.
${ }^{38}$ J. I. Lawlor, "The Excavation of the North Church at Hesban, Jordan," Andrews University Seminary Studies 18 (1980) 65-76; Piccirillo, Mosaics of Fordan 250, pls. 426, 434.
${ }^{39}$ M. Piccirillo, "La chiesa di Massuh e il territorio della diocesi di Esbous," Liber Annuus 33 (1983) 335-346; Mosaics of Jordan 254, pl. 447.
${ }^{40}$ Kraeling, Gerasa 331, pl. LXXIII; Piccirillo, Mosaics of Fordan 288, pl. 538.
${ }^{41}$ Avi-Yonah, QDAP 13 (1947/8) 68-72; Piccirillo, Liber Annuus 30 (1980) 317-350; Mosaics of Jordan 311, pl. 625.
${ }^{42}$ Smith, Pella II 127, pl. 18B; Piccirillo, Mosaics of Fordan 254, pl. 447.


Figure 13. Southern intercolumniations, swastika-meander motif
The swastika-meander design is found at several sites in Jordan of Byzantine date: the First Church at Yasileh has a swastika-meander border with recessed double reverse-returned swastikas dividing squares. ${ }^{43}$ Some squares are filled with a checkerboard pattern or with four-petal rosettes. The swastika-meander is dark red on a white background while the checkerboard squares are multi-coloured, dark red, pink, yellow, and light blue on a white background. The rosettes are white on a dark red background. Another example from the region is in the Prophets Church at Gerasa (464/5). ${ }^{44}$

This motif can be traced back to the Roman period. The floor of the Promontory Palace at Caesarea in Israel (II-early III) has a similar border, ${ }^{45}$ though there the swastika-meander is white on a black background; it also has squares with the checkerboard pattern, the frame being outlined in white against a black background, with the checkerboard itself in white, black, and yellow. A second example in Israel, but much later, is in a synagogue in Gaza Maiumas (508/9); ${ }^{46}$ the colours there are similar to those in the Promontory Palace at Caesarea.

[^6]
## Intersecting circles motif

The middle panel features a motif of intersecting circles (fig. 14). Crosses are formed in the spaces between each grouping of four petals and two circles. Inside of each petal is a small petal. This pattern was also used in the floor of the south aisle (fig. 18). The quatrefoil pattern was widespread in Jordan in the Byzantine period: thus in the nave of the church of Saint Menas at Rehab (635), ${ }^{47}$ and in the north aisle of the church of Bishop Leontios at Yáamun. ${ }^{48}$ Significantly, this motif is a good deal older, already in use in the Hellenistic period and a common design throughout the Roman period: e.g., in the Hospitalia of Hadrian's Villa at Tivoli (118) ${ }^{49}$ and in Terrace House 2 at Ephesus (late III/early IV). ${ }^{50}$


Figure 14. Southern intercolumniations, intersecting circles

## Squares and circles interlooped

The geometric pattern of the western panel ( $f \mathrm{ig} .15$ ) is a row of squares and circles interlooped tangentially, in asymmetrically shaded bands. Inside of each square is a cross, and inside of each circle is a diamond.

[^7]

Figure 15. Southern intercolumniations, squares and circles interlooped
The northern intercolumniations
Three panels are in the northern intercolumniations, decorated with deferens motifs; only the eastern one survives, the second and the third having been destroyed. This is decorated with a floor motif (fig. 16) surrounded by a saw-tooth border.


Figure 16. Northern intercolumniations, floors motif

## The northern aisle

The panel of the northern aisle ( 13.20 m . long, 2.35 wide) is decorated with tangent scales in outline, each with a flower inside (fig. 17).


Figure 17. Northern aisle, tangent scales

Two parallels are in the Madaba area: in the baptistry (Diakonikon) of the Memorial of Moses at Mount Nebo-Siyagha $(530),{ }^{51}$ and in the southern intercolumniation of the church of Bishop Sergius at Umm al-Rasas. ${ }^{52}$ Others are at Khirbet asSamra in the church of St. Peter (Byzantine); ${ }^{53}$ in the apse of the church of St. Basil at Rihab (594);54 and in the central church at Pella. ${ }^{55}$
Southern aisle: intersecting circles
The southern aisle ( 13.20 m . long, 2.35 wide) is decorated with intersecting circles (fig. 18) similar to those in the middle panel of the southern intercolumniation.


Figure 18. Southern aisle, intersecting circles
The northern room: composite motif
The northern room ( 2.66 m . long, 2.20 wide) is decorated with squares of various sizes, filled with an interlaced motif (fig. 19); the fifteen squares seem to have been filled with figurative motifs that have been removed by iconoclasts.
${ }^{51}$ V. Corbo, "Nuovi scavi archeologici nella cappella del Battistero della Basilica del Nebo (Siyagha)," Liber Annuus 17 (1967) 241-258; Piccirillo, Mosaics of Fordan 147, pl. 184.
${ }^{52}$ M. Piccirillo, "Le iscrizioni di Um er-Rasas - Kastron Mefaa," Liber Annuus 37 (1987) 177-239; Mosaics of Fordan 234, pls. 365, 369.
${ }_{53}$ Humbert, in Christian Archaeology 467-474; Piccirillo, Mosaics of Fordan 307, pls. 606-608.
${ }^{54}$ Avi-Yonah, QDAP 13 (1947/8) 68-72; Piccirillo, Liber Annuus 30 (1980) 317-350; Mosaics of Jordan 311, pl. 626.
${ }^{55}$ Smith, Pella 127, pl. 17D; Piccirillo, Mosaics of Fordan 331, pl. 703.


Figure 19. North room, composite motif
A similar example is at Madaba, in the northwest panel of the Chapel of the Twal Family (Byzantine), ${ }^{56}$ with a composite pattern of squares of various sizes, filled with interlaced motifs and birds. Two others are at Antioch: in Bath A, Room 29 (300-350), and in the eastern aisle of the Kaoussie Church (Martyrion of St. Babylas) (387). ${ }^{57}$

## Southern room: Squares and diamonds pattern

The southern room of the church ( 2.66 m . long, 2.20 wide) is decorated with squares and diamond (fig. 20), a pattern similar to that in the apse/chancel.

## Conclusions

Jordan offers valuable testimony for the study of the geometric mosaic designs in late antiquity. The skill of the artists here is seen in the refinement of the final products, a high level of technique as measured by repetition, similarity, and uniformity. Surveying analogues adds to our understanding of the

[^8]

Figure 20. Southern room, squares and diamonds motif
relationship between Khirbet al-Bediyeh and other Byzantine sites and their artistic achievements. The discoveries strongly demonstrate that this area was one of the most important mosaic production centers in the Byzantine Levant. Two designs make their first appearance, and the composite pattern with octagons and looped motifs is found a few decades later in the Church of St. Mary at Rihab in southwest Jordan. The authors hope that these findings will spur further research on these designs.

April, 2013
Faculty of Arts and Desigin
The University of Jordan mohammadnassar@hotmail.com
Faculty of Archaeology \& Anthropology Yarmouk University muheisenz@yu.edu.jo


[^0]:    ${ }^{3}$ For the technique used see M. Nassar and N. Turshan, "Plant Mosaics in the Church at Ya`amun," $G R B S 51$ (2011) 209; cf. D. Neal, "Floor Mosaics," in D. Strong and D. Brown (eds.), Roman Crafts (London 1976) 241-252; M. W. Merrony, Socio-economic Aspects of the Byzantine Mosaic Pavements of Phoenicia and Northern Palestine (D.Phil. thesis Oxford 2000); "Socioeconomic Aspects of the Byzantine Mosaic Pavements of Phoenicia and Northern Palestine," Mosaic 30 (2003) 25-28; "The Late Roman Mosaic Pavements of Phoenicia and Northern Palestine," Bulletin of the Anglo-Israel Archaeological Society 21 (2003) 55-64.
    ${ }^{4}$ M. Nassar and Z. al-Muheisen, "Geometrical Mosaic Pavements of Yasileh in Jordan," PEQ 142 (2010) 182-198, fig. 17b; M. Nassar and Z. Turshan, "Geometrical Mosaic Pavements of the Church of Bishop Leon-

[^1]:    tios at Yáamun," PEQ 143 (2011) 41-62, figs. 24, 25.
    ${ }^{5}$ M. Nassar, "Catalogue of Geometric Mosaic Pavements of Jordan during the Byzantine Period" (unpublished, n.d.) fig. 1: 18.1.
    ${ }^{6}$ M. Piccirillo, The Mosaics of Jordan (Amman 1997) 292, pl. 560.
    ${ }^{7}$ Piccirillo, Mosaics of Fordan 146, pls. 166, 182, 184.
    ${ }^{8}$ M. Piccirillo, "Umm er Rasas-Kastron Mefaa. Quarta campagna," Liber

[^2]:    Annuus 39 (1989) 266-268; Mosaics of fordan 236, pl. 376.
    ${ }^{9}$ R. H. Smith, Pella of the Decapolis II (Wooster 1989) 172, pl. 18D; Piccirillo, Mosaics of Fordan 330, pl. 706.
    ${ }^{10}$ S. Saller and B. Bagatti, The Town of Nebo (Khirbet al-Mekhayyat) (Jerusalem 1949) 254; M. Piccirillo, "Le chiese di Quweismeh-Amman," Liber Annuus 34 (1984) 329-340; Mosaics of Fordan 266, pls. 480, 484, 485.
    ${ }^{11}$ M. Avissar, "Lod - A Mosaic Floor," Excavations and Surveys in Israel 17 (1998) 169-172; A. Ovadiah and S. Mucznik, "Classical Heritage and AntiClassical Trends in the Mosaic Pavement of Lydda," in Assaph: Studies in Art History 3 (1998) 1-16; E. Haddad and M. Avissar, "A Suggested Reconstruction of one of the Merchant Ships on the Mosaic Floor in Lod (Lydda) Israel," IfNA 32 (2003) 73-77; Z. Friedman, "The Ships depicted in the Lod Mosaic Reconsidered," IfNA 33 (2004) 164-168.
    ${ }^{12}$ R. Hachlili, Ancient Mosaic Pavements (Leiden/Boston 2009) 36, fig. III.2.
    ${ }^{13}$ Hachlili, Ancient Mosaic Pavements 159-160, fig. VII.4.
    ${ }^{14}$ S. Campbell, The Mosaics of Aphrodisias in Caria (Toronto 1991) 8, pl. 24.
    ${ }^{15}$ E. Kitzinger, "Stylistic Developments in Pavement Mosaics," in La Mosaïque gréco-romaine (Paris 1965) 344, fig. 6.

[^3]:    ${ }^{16}$ Kitzinger, in La Mosä̈que 345, fig.7; Hachlili, Ancient Mosaic Pavements 167, fig. VII.7.
    ${ }^{17}$ R. Ciobanu, "Mosaics of Roman Dacia," in P. Johnson et al., Fifth International Colloquium on Ancient Mosaics (7RA Suppl. 9 [1994-1995]) II 270, fig. 6a; "Mozaicul Vânturilor de la Apulum comentarii iconografice," Apulum 39 (2002) 246, 250, fig. 1; I. Berciu, "Mozaicurile romane din Apulum," Apulum 4 (1961) 151-189, pl. X.
    ${ }^{18}$ K. Dunbabin, Mosaics of the Greek and Roman World (Cambridge 1999) 23-25, figs. 22, 24.
    ${ }^{19}$ Dunbabin, Mosaics 32, fig. 31.
    ${ }^{20}$ A. Rainey, Mosaics in Roman Britain (Newton 1973) 133, pl. 16a; S. Tebby, "Geometric Mosaics of Roman Britain," in Fifth International Colloquium I 285, fig. 9.
    ${ }^{21}$ D. Johnston, "Some Possible North African Influences on RomanoBritish Mosaics," in Fifth International Colloquium I 296, fig. 1.
    ${ }^{22}$ Z. al-Muheisen and M. Nassar, "The Second Church at Yasileh in Jordan and its Mosaics," GRBS 52 (2012) 675, 681, figs. 13, 20; Nassar and Turshan, PEQ 143 (2011) 46, fig. 5.
    ${ }^{23}$ Piccirillo, Liber Annuus 39 (1989) 266-268; Mosaics of Jordan 236, pl. 374.

[^4]:    in Honour of V. C. Cordo (Jerusalem 1990) 467-474; Piccirillo, Mosaics of Jordan 330, pl. 703.
    ${ }^{28}$ Nassar and Turshan, PEQ 143 (2011) 55, 60, figs. 17 and 23.
    ${ }^{29}$ Nassar and al-Muheisen, PEQ 142 (2010) 184, fig. 16.
    ${ }^{30}$ Campbell, The Mosaics of Aphrodisias 23, pl. 84.
    ${ }^{31}$ S. Campbell, The Mosaics of Anemurium (Toronto 1998) 25, pl. 120.

[^5]:    ${ }^{32}$ 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; Mosaics of Jordan 311, pls. 622, 623; Nassar, "Catalogue" fig. 7: 2.6.
    ${ }^{33}$ Nassar, "Catalogue" fig. 1: 1.8.

[^6]:    ${ }^{43}$ Z. al-Muheisen, Liber Annuus 39 (1989) 171-172; 40 (1990) 459-462; 41 (1991) 341; A7A 96 (1992) 535, fig. 30.
    ${ }^{44}$ Kraeling, Gerasa 337, pl. LXXVIII; Piccirillo, Mosaics of Jordan 286-287, pl. 535.
    ${ }^{45}$ Y. Turnheim and A. Ovadiah, RivIstArch Suppl. 27 (2002), ill. 101.
    ${ }^{46}$ Turnheim and Ovadiah, RivIstArch Suppl. 27 (2002), ill. 108.

[^7]:    ${ }^{47}$ U. Lux, "Der Mosaikfussboden der Menas-Kirche in Rihab," $Z D P V 83$ (1967) 34-41; Piccirillo, Mosaics of Fordan 313, pl. 634-635.
    ${ }^{48}$ Nassar and Turshan, PEQ 143 (2011) 59, fig. 21.
    ${ }^{49}$ R. Ling, Ancient Mosaics (London 1998) 47, pl. 31.
    ${ }^{50}$ Dunbabin, Mosaics 226, pl. 223.

[^8]:    ${ }^{56}$ Saller and Bagatti, Town of Nebo 236-238; Mosaics of Fordan 128, fig. 141.
    ${ }^{57}$ S. Campbell, The Mosaics of Antioch (Toronto 1988) 13, pl. 46, and 45, pl. 133.

