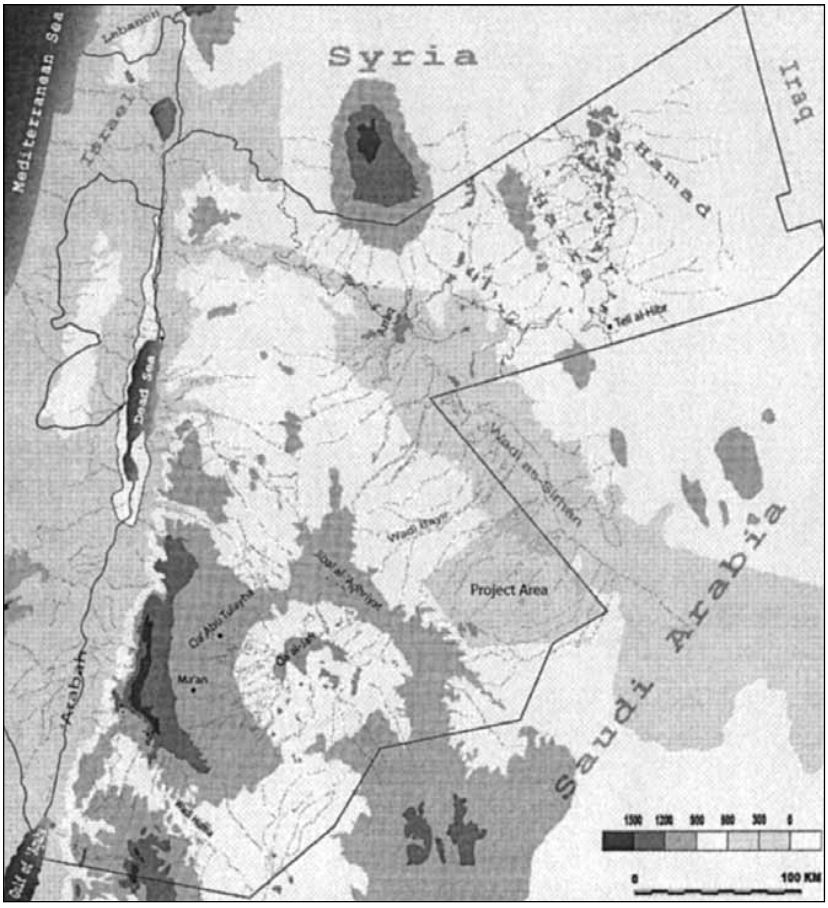
THE EASTERN BĀYIR ARCHAEOLOGICAL PROJECT: PRELIMINARY REPORT ON THE 2004, 2005 AND 2009 SURVEY SEASONS

Mohammad B. Tarawneh and Fawzi Q. Abudanah

Introduction

Until recently our knowledge of the vast area covering more than 16,000 km^2 in central and eastern Jordan between al-Jafr and Wādī as-Sarḥān was very limited. The Bāyir region is separated from al-Jafr by the surrounding al-ʻĀdhriyāt hills, and from the basalt Ḥarra region in the north by the Sirḥān depression. This harsh and hostile region has a diverse landscape, which includes mudflats, the rough and rocky region of Fkūk and flat areas strewn with flint. Most of the region is dissected by wadis which run north-east into Wādī as-Sarḥān. Throughout the Bāyir region there are surface scatters of calcareous-siliceous detritus, which are comprised predominantly of sharp flint (Bender 1974: 6). The eastern Bāyir region, where this project was conducted, is covered with flint except for small areas such as the scattered mudflats of the Qīʻān as-Sīq region. Traditionally, this region is known as *Arḍ aṣ-Ṣuwwān*, or Flint-strewn Land (**Fig. 1**).



1. Map of Jordan showing the location of the survey area.

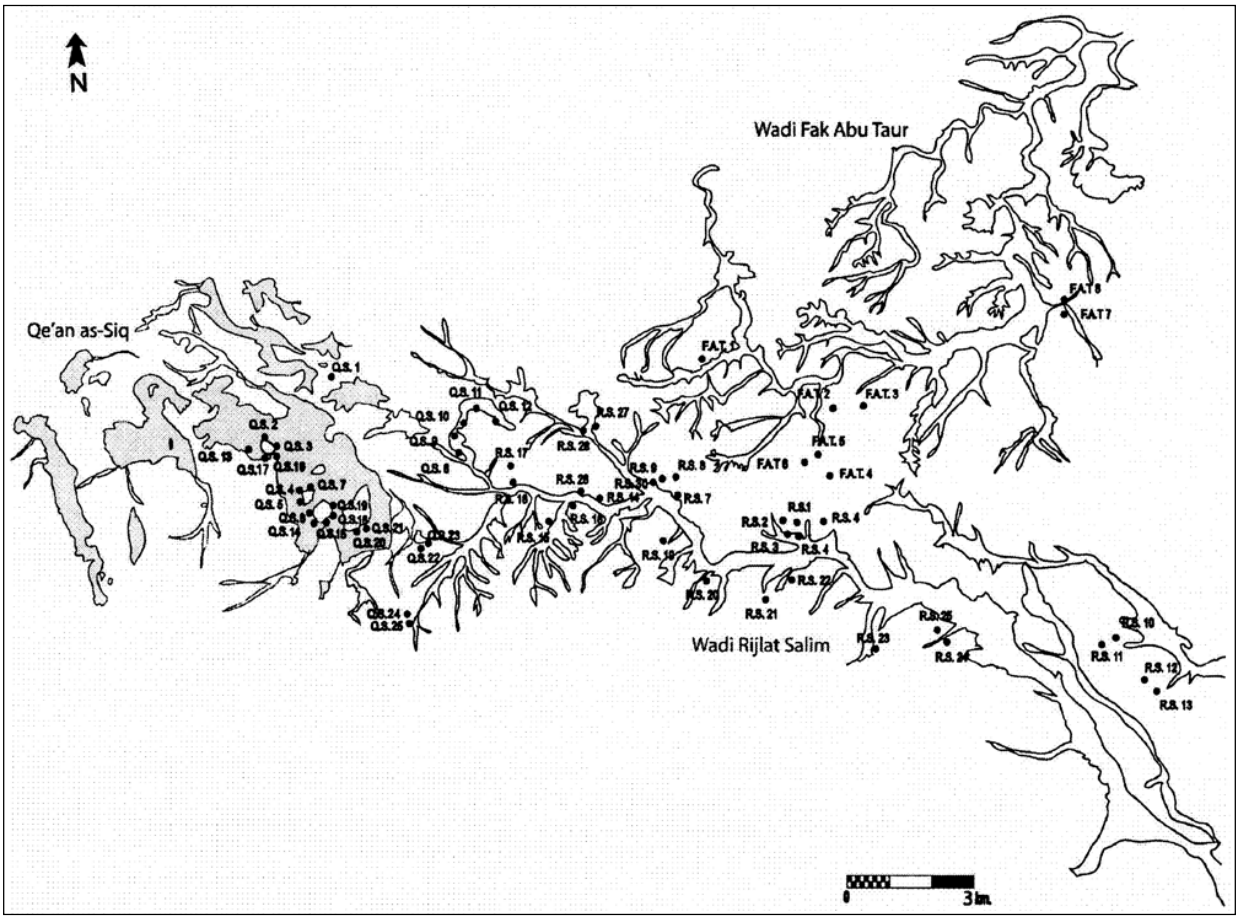
This region was chosen for the survey for a number of reasons. In the first instance, virtually no work has been conducted in the area, which has led to a gap in our knowledge of the archaeology between north-eastern and south-eastern Jordan, as well as north-western Arabia. Secondly, in a region as vast and diverse as this it is often difficult to identify archaeological potential; the suitability of the region between al-Jafr and as-Sarḥān for archaeological work thus favoured the undertaking of this project. Thirdly, recent archaeological activities in the surrounding region have brought to light substantial discoveries relating to many periods, in particular the Chalcolithic (Quintero *et al*. 2002). The final reason is that there is excellent preservation of desert sites that lie away from intensive human activities.

Fieldwork was undertaken over three seasons from late September to mid-October in 2004, 2005 and 2009. The first season was mainly concerned with an initial exploration of the region to locate and quantify concentrations of sites for further systematic survey in later seasons and for future research. The north-eastern part of the region was explored first but resulted in the discovery of very few sites. Large concentrations of sites were, however, located in the Qī‘ān as-Sīq, Rijlat Sālim and Fkūk regions (**Fig. 2**). The focus of the second season of the survey therefore, was the excavation of test squares in different sites and regions in order to obtain stratified material and carbon samples. Systematic field walking was carried out at Rijlat Sālim and Fkūk, whereas a vehicular survey was carried out at Qī‘ān as-Sīq because the area consists predominantly of dry mudflats and thus visibility in the region was good.

Sites were designated on the basis of having structural remains. These were mostly domestic and animal enclosures, *rujm* (cairn) sites and water pools.

Site Location

Sites in the eastern Bāyir were mostly located



2. Map showing the distribution of recorded sites.

on slopes or edges of terraces. One example, RS 25 was situated on the eastern side of a hill close to its summit, but even in this case it was sheltered from the prevailing westerly wind. All other eastern Bāyir sites were located on terraces above wadis in places which offered good shelter from westerly and northerly winds. The terraces provided easy access to stones for the construction of corrals and other features, making the task of building easier. There is no consistency in the distance of sites from wadis and it appears that site location depended more upon the availability of building material and terrace locations which offered good shelter. In the case of RS 28, the site is located only a few metres from the main wadi course, but in most other instances the wadi is a few hundred metres from the site.

In contrast, *rujm* sites were mostly situated on hilltops, for example several sites at Qī'ān as-Sīq, where two pools were recorded. No permanent water resources have been identified in this region today and it is likely that the rain pools or *ghudrān* were the main watering places. There appears to be no particular pattern of spatial distribution or function which would explain why sites at Qī'ān as-Sīq were situated in locations facing the westerly winds (e.g. QS 6). These sites would only have been comfortable in warm seasons when the westerly wind was not strong.

The location of sites in the eastern Bāyir region is similar to contemporary sites in other desert regions of the southern Levant. Chalcolithic sites in the Sinai Peninsula were built in sheltered areas overlooking wadis which provided them with pasture (Rothenberg 1971: 13), e.g. sites around Rahaya (Sinai 1, 4, 60, 23), Ghoweil (Sinai 14 and 16), Tabieq (Sinai 32, 37, 38, 39) and Maaleq (Sinai 51, 54, 55, 56 and 57) (Eddy and Wendorf 1999), and sites 1180 and 1133 in south-central Sinai (Beit-Arieh 2003, 376). Most of these sites consisted of single or several large semi-circular structures with additional smaller internal or external annexes. These structures are similar in size to those from eastern Bāyir, which range from a few meters up to 40 meters in some cases. The larger of these structures were suggested to be animal enclosures and the smaller ones domestic spaces, while the annexes have been interpreted as storage facilities because of their small size. Similar internal partitions have been recorded at sites in Sinai (Bar-Yosef *et al*. 1986; Beit-Arieh 2003: 376; Eddy and Wendorf 1999: 121).

Equally, a number of sites in the Negev have been identified which are similarly located in sheltered areas overlooking the wadi beds and comprise similar structural remains, consisting of large and small semi-circular structures with small annexes. These have been interpreted as seasonal activity sites used by pastoral nomads (Alon and Levy 1980; Gilead 1992; Gophna 1979; Levy 1983; Rothenberg 1971). Examples of these are Nahal Sekher 102 and 104 (Gilead 1992, 33) and the Nahal Besor sites (Gophna 1979; Levy 1983). Other sites similar to those identified in the survey have been recorded in the Ḥismā region of southern Jordan. These were also located in sheltered areas and were characterised by circular structures and enclosures, for example al-Jill (Henry 1995). Quintero *et al*. (2002) recorded sites comprising semi-circular structures with some upright slabs and some divisions in the region of al-'Ādhriyāt. These were located in sheltered areas overlooking the wadis. The authors linked them to the flint mining industry in the same area. Similarly, Qā' Abū Ṭulayḥa is also located near the wadi course (Fujii 1998: 124).

Surveyed Areas

Wādī Fak Abū Ṭur begins its course north of Wādī Rijlat Sālim and a few kilometres to the northeast of Qī'ān as-Sīq. The wadi continues toward the north-east with tributaries such as Wādī Umm Laḥm branching off from both sides. The wadi crosses the border with Saudi Arabia towards the as-Sarḥān depression. Eight sites (AṬ 1- AṬ 8), were recorded in the Fak Abū Ṭur (FAṬ) locality. All were located at the base of a low terrace or plateau and face a wadi tributary or the main wadi.

Wādī al-Abyaḍ runs south-west to north-east, beginning its course in the area between Fak Abū Ṭur and Rijlat Sālim in the south-west, and continuing its course towards as-Sarḥān depression. The wadi starts one kilometre north of Rijlat Sālim as a smallish flow of water, gradually increasing in width further north after meeting with tributaries flowing in on both sides. Wādī al-Abayyaḍ is one of the main tributaries for Wādī al-Abyad. Wādī al-Abayyaḍ is shorter in its course than al-Abyaḍ

and joins al-Abyaḍ approximately 13 kilometres from the border with Saudi Arabia. The area surrounding Wādī al-Abyaḍ, particularly in the north, is flat and easy to move across, in contrast to the harsh area of Fkūk. Occasional small hills found in this region are visible from a distance because of the flat landscape. The al-Abyaḍ sites lie between the wadi in the west and the international borders in the east and south. Three sites have been recorded near Wādī al-Abyaḍ. One of them is of an indeterminate period and consists of a line of small *rujum* separated from each other and making a 'pendant' shape. These have been described as burial cairns in Arabia (Abu Duruk *et al*. 1983: 111) possibly for the inhumation of high status individuals (**Fig. 4**). Indeed, a burial was found in a large *rujm* in the 2009 season. In contrast, the diagnostic sites were similar to other sites which were recorded during this survey in the area between Fak Abū Ṭur and Rijlat Sālim.

The area of Qi'ān as-Sīq lies approximately 40 kilometres west of the Desert Police fort at Mushāsh Ḥudruj, west and south-west of Rijlat Sālim and north of Wādī Ḥudruj near its source in the west. Small Qī'ān are scattered in many different places. The area also contains many low hills or *qwairat*, which break up the flatness of the Qī'ān. The area of Qī'ān as-Sīq is higher in altitude than the other surveyed sites, ranging between 866 to 889m above sea level.

Twenty five sites (QS 1-QS 25) were recorded in the Qī'ān as-Sīq locality in the eastern area near Rijlat Sālim in the centre of the Qī'ān. All of the sites discovered in this region are located on the edge of hills or terraces, as are other sites in the region. Interestingly, some of these sites face west and north and are exposed to the wind, while in other regions they were built mostly in sheltered areas. These sites are similar to the sites discovered at Rijlat Sālim and the other surveyed regions. They consist of circular and semi-circular structures which were used apparently as animal enclosures by pastoral nomads. No pottery was discovered at these sites during the survey.

The area of Rijlat Sālim is important because of the Wādī Rijlat Sālim, which has attracted bedouin since the late Ottoman period and was a camping destination for the Abu Tayih tribe of the Ḥwaitat. The great sheikh 'Awdah Abu Tayih camped at Rijlat Sālim most years. This leader and his large tribe were attracted to the area because of its pasture and green wadis. In recent years bedouin have been seen camping at Wādī Rijlat in late summer to take advantage of the dew which supports the wadi shrubs and early rainfall. Wādī Rijlat Sālim is one of the few wadis which run in a west to south-east direction in the region. Wādī Rijlat Sālim is supported by small tributaries especially from the south. The Rijlat Sālim region does not have a rough landscape, although it is not as flat as the Qī'ān as-Sīq area.

A total of thirty sites were recorded, all lying on the wadi banks in the south and north. These sites were located close to edges of terraces or hills, taking advantage of shelter from the wind. All sites overlook the Wādī Rijlat Sālim apart from RS 15, which lies on the western bank of the largest tributary of Rijlat Sālim. Site RS 16 is a water pool from the historical period which lies in the western part of Rijlat Sālim.

Descriptions of Selected Sites

Fak Abū Ṭur 2

This site is located about two kilometres from the northern edge of Wādī Rijlat Sālim in one of the main tributaries of Wādī Fak Abū Ṭur to the south-west. The site is sheltered from northerly winds and partly from the westerly winds by a high hill to the west.

Two structures were recorded at this site: Structure 1, to the west, is semi-oval in shape and measured 12 m east-west x 21 m north-south. Structure 1 is preserved because of its large stones and also because of its location away from the wadi channel. Structure 2 is situated approximately 35.5 m east of Structure 1 and is rectangular in shape. This structure is smaller in size than Structure 1 and measures about 15 m north-south x 12 m east-west. A small annex was attached to the internal side of the eastern wall. Parallel to Structure 1 and to the north on the other side of the slope, another small circular structure (Structure 3) was noted.

Two test trenches were excavated and a sample of charcoal was collected at a depth of 0.7 m. This sample and the dark compact soil are good indications that this area was an occupation layer. On the other hand, it is clear from the thickness of the layer and the general absence of finds that the site was used for a

relatively short period of time. Daily activities probably took place outside the main structures. The charcoal sample from the second trench which was found in the occupational deposits gave the date of 7,018 ± 41 BP.

Very few finds were collected from within the two structures. However, retouched large thermal flakes were found 2 m to the east of Structure 2. A total of 41 artefacts were recorded. These included 33 retouched thermal flakes, one multi-platform core, two single-platform cores, three retouched flakes and two chunks. No pottery was found on the site. No stratified flint was recovered from the test trenches except for one large scraper and a blade. Flint tools at this site were mostly on thermal flakes which were heavily patinated and some tools possibly were used in earlier periods. The site is thus unique in that the finds consist predominantly of retouched thermal flakes and chunks. In addition, there were no tabular scrapers which characterise the other sites in this wadi and the sites in the surrounding wadis.

Qī'ān as-Sīq 6

This site is located less than 1 km south-east of QS 5 near the western edge of a low hill and facing a flat area to the west. Structures at this site were situated about 15 m west of the edge in a flat area.

This site consists of three structures separated from each other by channels and distinguished by *rujum* near the structures on the cliff edge. Structure 1 is situated 130 m south of the other two, and 8 m from the cliff edge. It is semi-triangular in shape and its internal dimensions were 16 m x 13.5 m. Two small annexes were attached to the main wall of this structure: the first was attached to the northern exterior face of the wall and measured 1.5 m x 0.6 m, the second was an internal annex measuring 3 m x 1.5 m. To the north-east of this structure, about 13 m distant, a small *rujm* was found on the hill edge measuring approximately 2.5 m in diameter. Structure 2 is situated to the north and is separated from structure 3 by another small channel. Structure 2 is situated 13 m west of the edge of the hill and 10 m from the second *rujm*. It is semi-circular in shape with an internal diameter of 8 m. Neither any small rooms nor a hearth were found in either structure and so it is difficult to determine whether they were domestic facilities, or used as animal enclosures.

Structure 3 lies 13.5 m north of the Structure 2 and 15 m from the hill edge. It is circular in shape and its internal diameter is 21 m. Three annexes were attached to this structure: the first was attached to the internal face of the main wall from the south-east and measures 5.5 m x 3 m; the second annex measures 5 m x 3 m and was also attached to the internal side of the wall in the north-east corner; the third annex is smaller in size and measures approximately 1.70 m x 1 m and was attached to the exterior face of the wall to the north.

A small trench was excavated in the western part of Structure 3, near the south-western corner. A hearth was exposed in the southern part of the trench (**Fig. 3**). Two charcoal samples were obtained from the hearth and from the layer itself, which date the structure to 6,617 ± 34 BP. The shallow depth of the occupation deposit indicate a short season of use and suggest that only limited activities could have taken place at the site.

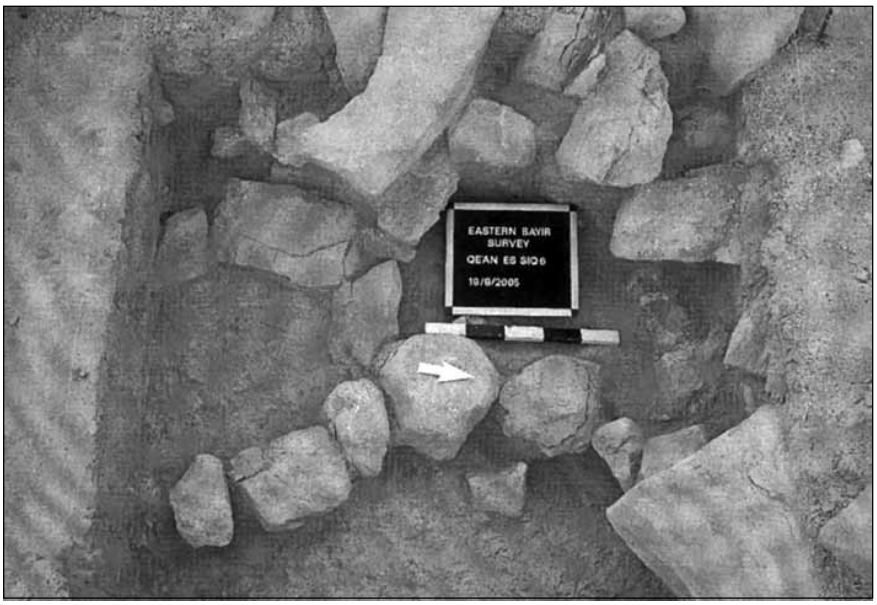
Only a few flint artefacts were collected at this site, possibly because of the channels which have washed away the surface artefacts. The recorded artefacts comprise five tabular scrapers, two cores, two retouched thermal flakes and one retouched flake.

Qī'ān as-Sīq 11

This site is located on the northern edge of the hill facing a small mudflat to the north. It is situated about 12 m from the terrace edge. The site is somewhat sheltered from the westerly winds and is also partly eroded by a small channel running north from the hill edge.

This site consists of a single, large semi-triangular structure parallel to the edge of the hill with an internal measurement of approximately 40 m x 25 m. The lower part of the wall in the north was severely eroded, leaving two large holes in it. Three interior rooms were attached to the face of the main wall to the north, south and east. These have an internal diameter of between 1 m and 4 m. An external annex was attached to this structure on the eastern side. It had an internal dimension of 1.20 m x 4 m.

Four *rujum* were recorded on the upper part of the hill near to its edge in the south-west corner of the site. These were built of stone piles taken from the edge of the hill. One of these is located 8 m to the east of the others. The other three *ru-*



3. Qī'ān as-Sīq 6, small hearth next to main wall.

jum are connected by small lines of stones with tail-like walls at each end. The connected *rujum* range between 2 m and 4.80 m in diameter. Graffiti was discernable on a few of the stones; some of these were probably made by bedouin while others were early Arabic. Finds at this site consisted of flint artefacts. 12 flints were recorded, including four tabular scrapers, five retouched flakes, one blade, one core, one retouched thermal flake and five retouched flakes.

Qī'ān as-Sīq 25

This site is located in the southern part of Qī'ān as-Sīq on the edge of a plateau overlooking the Qī'ān area which lies to the north. The site is a composite *rujm*, being comprised of three graves of unknown date. It is constructed of stones and rocks covered with long slabs over 1 m in length (**Fig. 4**). The walls surrounding the graves rise above the level of the covering slabs and may indicate modern disturbance. Future excavation at this site may help to date them.

Rijlat Sālim 1

This site is located on the northern bank of Wādī Rijlat Sālim between RS 2 and RS 4. The site measures approximately 210 m in length between the farthest two structures making it one of the largest

4. Rujum site of Qī'ān as-Sīq 25.

sites recorded during the project, both in terms of area and the number of structures it contains.

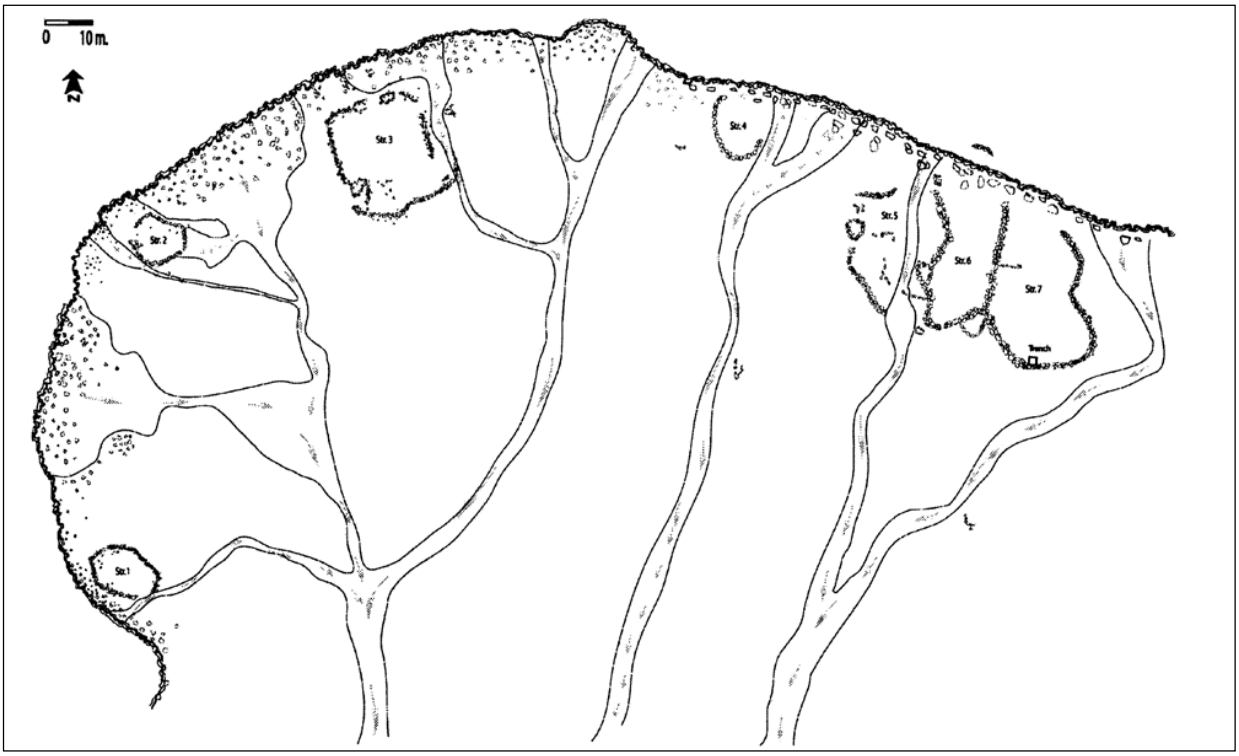
There are five constructed features at this site: three are small individual structures, one is a larger individual structure and one a large compound structure consisting of three connected structures and some attached annexes. These structures are separated from each other by seven channels which run from the upper part of the terrace towards the main wadi after joining each other in different locations (**Fig. 5**). Structure 1 to the south-west is a small structure which lies on the farthest side of the site and faces the rest. It is situated beside the terrace edge on an area of higher ground. It is oval in shape and its internal dimensions are 14 m x 8 m.

Structure 2 is also small and is located about 58 m to the north of Structure 1. Structure 2 is situated between two channels which have undermined its wall. It is approximately 5 m from the terrace edge and has a maximum internal diameter of approximately 10 m.

Structure 3 is larger in size and is situated approximately 33 m north-east of Structure 2. A channel has eroded part of the northern and eastern sides of the wall. The structure is semi-rectangular in shape, with internal measurements of *ca*. 27 m east-west x 20 m north-south. Two small internal annexes, measuring less than 2 m in diameter, were located in the northern quadrant of the structure. Another small annex was also attached to the outside edge of the southern wall near its lower corner and has an internal measurement of 3.5 m x 2 m.

Structure 4 is a smallish feature situated *ca*.49 m east of Structure 3 and 21 m west of the Eastern Compound (see below). This structure was severely disturbed and has lost a large portion of the north-eastern part of its wall. It is oval in shape with an internal diameter of 12 m.

The largest built feature of RS 1 is the Eastern Compound, which is situated beside the terrace edge and comprises Structures 5, 6 and 7. The construction of this structure is unique as its builders used the terrace edge on the northern side of the structure instead of building another wall. The compound consists of three large, elongated structures and has some straight walls, particularly the shared walls in the middle. These structures measure 58 m east-west x 33 m north-south. Structure 5, the most western feature of this compound, has an internal measurement of 30 m x 21 m. Two small internal annexes were noted within Structure



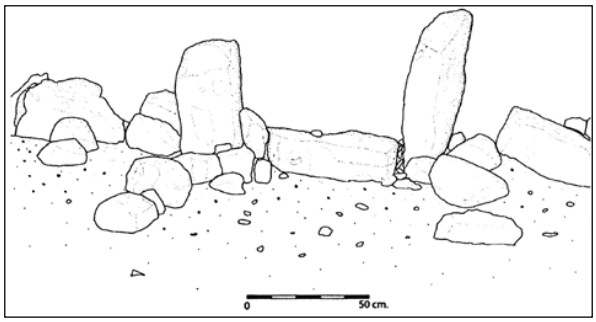
5. Rijlat Sālim 1, plan showing distribution of architecture and topography.

5. The first was attached to the western wall, where the stones showed later disturbance. This feature has a maximum internal measurement of 3 m. The second annex had an internal measurement of 2 m. A doorway was also recorded in the western wall of Structure 5 (**Fig. 6**). Structure 6 is situated in the middle of the compound and is elongated and semi-rectangular in shape. It measured 33 m between the terrace edge and the southern wall and about 13 m east-west at its widest point. A small doorway was recorded in the southern wall beside an annex. Structure 7 is situated on the eastern side of the compound and measured approximately 35 m between the terrace edge and the southern wall and is about 20 m east-west at its widest point.

A test trench was excavated in the southern part of Structure 7. Two charcoal samples were obtained from this square at a depth of about 0.5-0.6 m and yielded dates of 6,315 ± 44 BP and 6,256 ± 48 BP. 105 artefacts were recorded from the survey and excavation. These finds include ten tabular scrapers, 16 cores, 35 retouched flakes, nine blades, 27 retouched thermal flakes, one borer, one bifacial tool, one t-shaped tool, one chunk and one chopper.

Rijlat Sālim 20

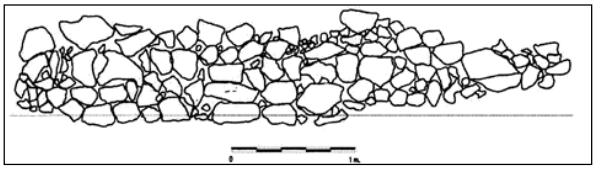
This site is located on the southern bank of Wādī Rijlat Sālim. A water channel has significantly disturbed the northern part of the site. Two structures were identified. The first is situated to the north, close to the channel and is severely disturbed. It is circular in plan. The second structure is located about 11 m to the south of Structure 1 and further away from the channel. Although better preserved than the first, its upper, south-western part has been destroyed by erosion. Structure 2 has an internal diameter of 6.5 m. It is circular in shape with an extant five-course wall to the north that is preserved to a maximum height of *ca*. 0.85 m (**Fig. 7**). A small doorway was built on the eastern side of the wall. An internal division can be seen in the middle of this structure where two walls were built in the southern and northern side (**Fig. 8**). A small trench was excavated beside the wall, both to establish its depth and in an attempt to recover stratified material. Two charcoal samples were obtained from this layer which yielded dates of 6,626 ± 46 BP. and 6,428 ± 40 BP. Thus, it was contemporary with the other dated sites in the region. 22 artefacts were collected from the site, including five cores, one blade, two chunks, three retouched flakes and 11 retouched thermal flakes.



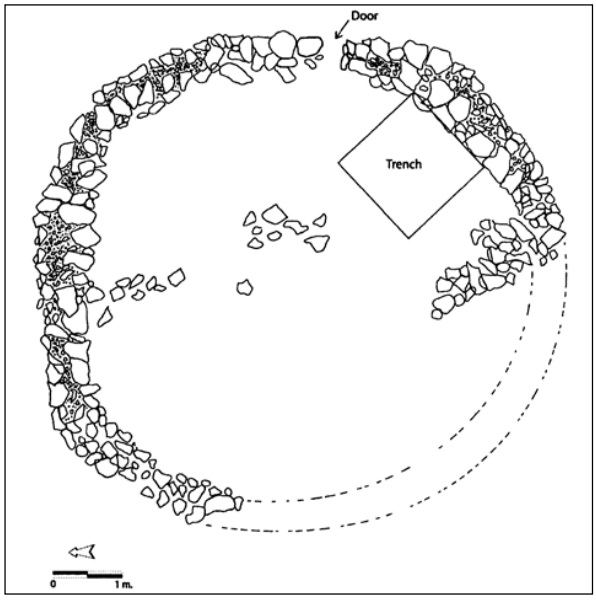
6. Rijlat Sālim 1, doorway to Structure 5.

Artefacts

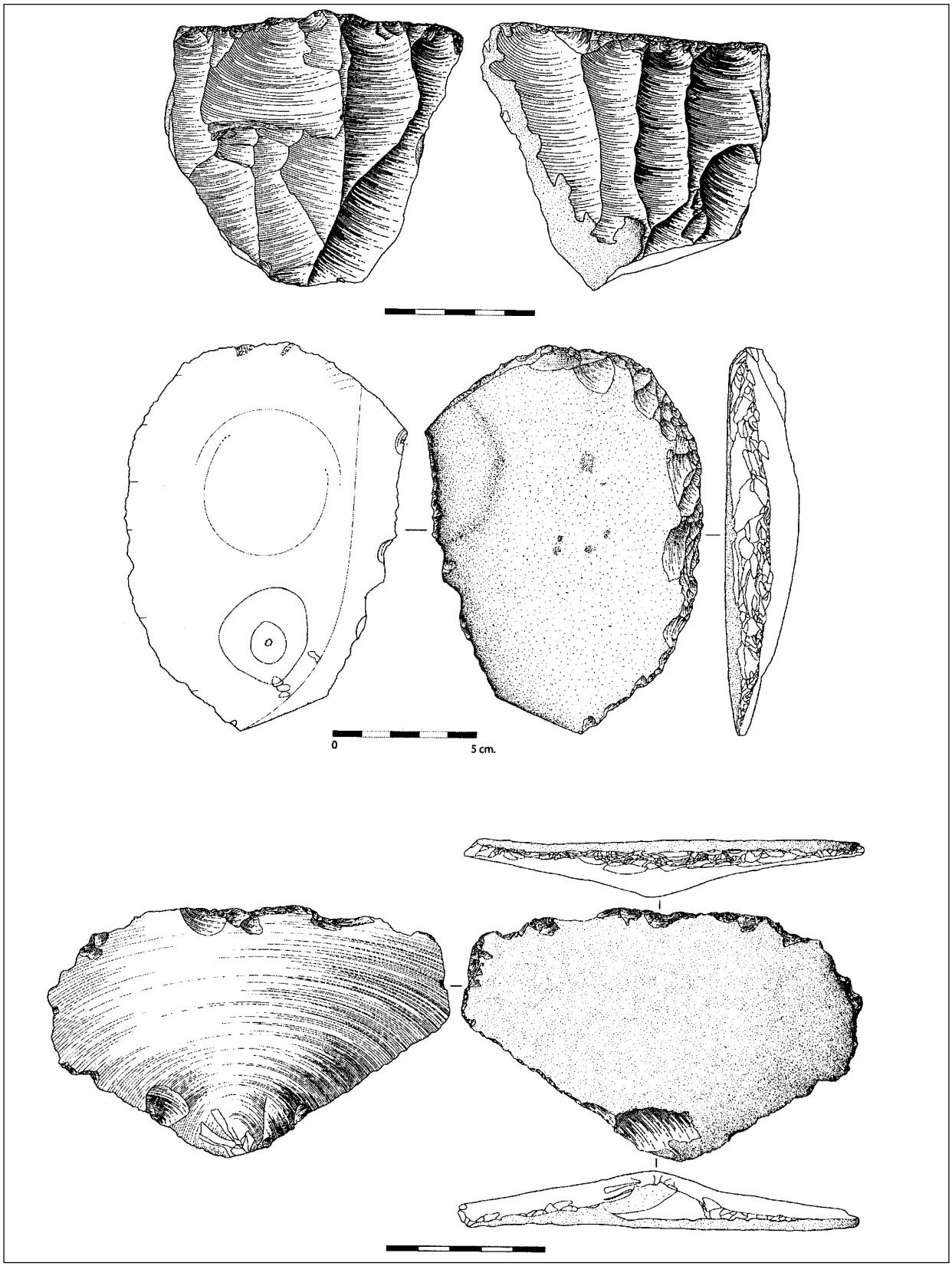
Artefacts were collected inside the structures and in their immediate vicinity. At some sites, such as FAṬ 2, tools were mainly concentrated in areas outside the structures. The larger flint assemblages were collected from the larger sites, such as Rijlat Sālim 1 and 15 (**Fig. 9**). Very small quantities of chipped stone were found at the smaller sites, particularly the individual small structures (**Fig. 10**). This suggests that



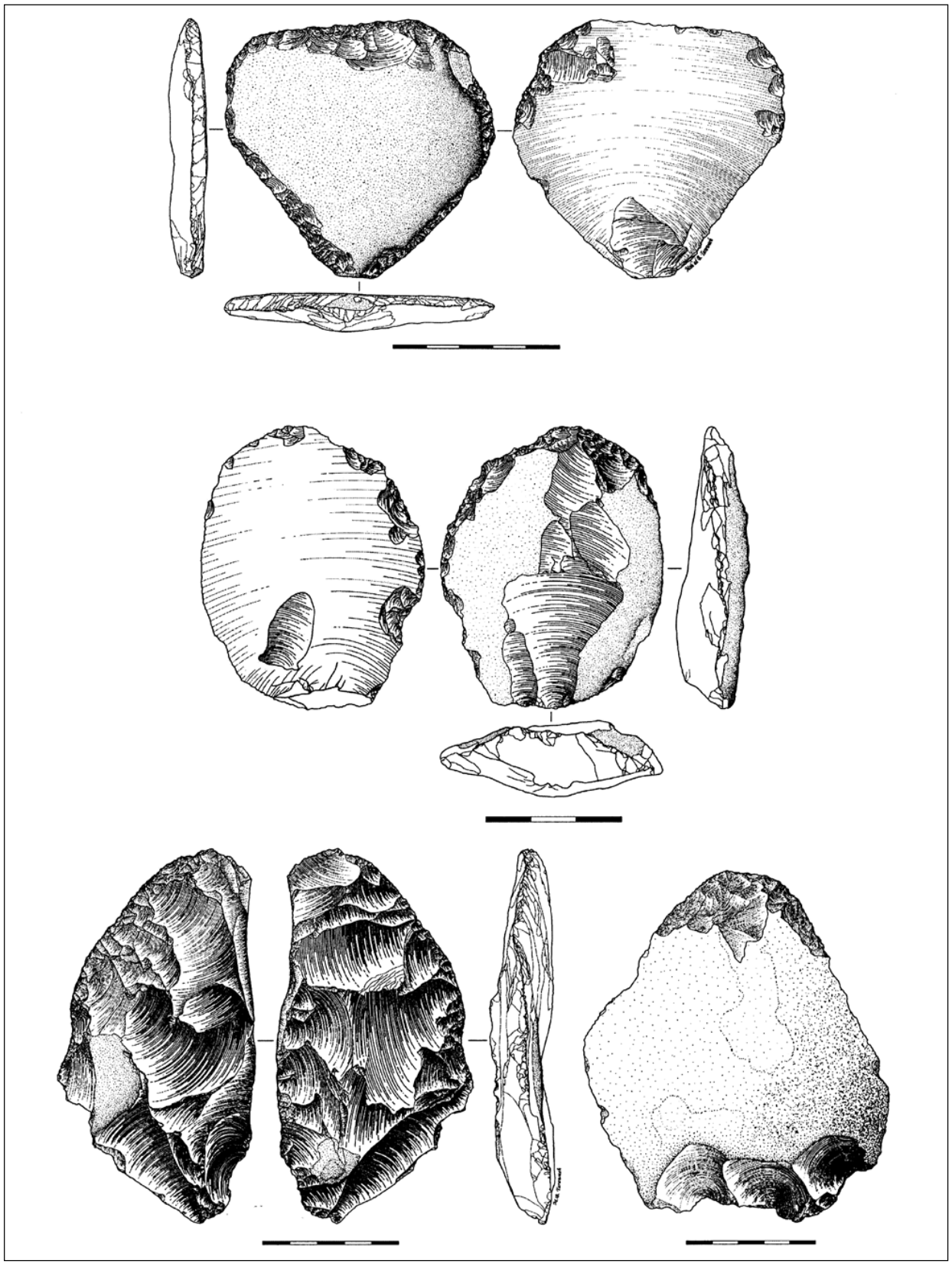
7. Rijlat Sālim 20, south wall of Structure 2.



8. Rijlat Sālim 20, plan of Structure 2.



9. Qi'ān as-Sīq, chipped stone artefacts.



10. Rijlat Sālim and Fak Abū Ṭur, chipped stone artefacts.

these sites had a short period of occupation and that a limited ranged activities took place there.

Conclusions

The sites discovered in the eastern Bāyir region can be attributed to pastoral nomads for several reasons. First, they sites occur in large numbers in a region which is used by modern nomads. Second, the distribution of these sites in separate areas, yet similar locations, indicates the importance of regular movement to areas with better resources. Third, the simplicity and limited size of the larger structural remains suggests that they were used primarily as animal enclosures. Smaller structures found together with these large ones suggest their use for domestic activities and storage. The size of these irregular structures in many cases indicates that they were used for small numbers of people. Fourth, and most importantly, these sites consist of shallow occupational deposits, in some cases less than 0.4 m. Fifth, chipped stone tools at these sites tend indicate their use by pastoral nomads because they consist mainly of scrapers, which were probably used for butchering and shearing. Finally, this part of the Levant does not support permanent settlement because of its harsh, dry environment.

Acknowledgments

This project was made possible through the generous financial support of the University of Sydney, Carlyle Greenwell Bequest, Near Eastern Archaeology Foundation and al-Hussein bin Talal University. We wish to thank the Director General of the Department of Antiquities Prof. Dr Ziad al-Saad for his support of the project. We greatly acknowledge the great effort of Khalid Q. Tarawneh, ‘Aayed Abu Tayeh, Snyan Abu Tayeh Ahmed and Mohammad Tarawneh. We are deeply indebted to our hosts in the desert, the Officers of the Royal Desert Police fort at Mushāsh Ḥudruj.

Table 1: List of sites located during the 2004, 2005 and 2009 seasons.

Site Name	Date Recorded	UTM Grid	Height a.s.l.	Interpretation	Finds
al-Baniya	12.9.2004	37 R 0320146 UTM 3382450	816	C.S. Chalcolithic	Concave rotator, tabular scrapers and flake industry *
Qī‘ān as-Sīq 1	12.9.2004	37 R 0332603 UTM 3368066	876	C.S. Chalcolithic	Tabular scrapers and flake industry
Qī‘ān as-Sīq 2	12.9.2004	37 R 0330109 UTM 3366943	879	C.S. Chalcolithic	Tabular scrapers, small blades, core and flake industry *
Qī‘ān as-Sīq 3	13.9.2004	37 R 0330281 UTM 3366905	878	C.S. Chalcolithic	Tabular scrapers, blades and flake industry *
Qī‘ān as-Sīq 4	13.9.2004	37 R 0331580 UTM 3365050	888	C.S.Chalcolithic	Flake industry *
Qī‘ān as-Sīq 5	13.9.2004	37 R 0331630 UTM 3364953	878	C.S .Chalcolithic	Flake industry *
Qī‘ān as-Sīq 6	13.9.2004	37 R 0331847 UTM 3364725	868	C.S. Chalcolithic	Basalt grinder fragment, tabular scrapers and flake industry *
Qī‘ān as-Sīq 7	13.9.2004	37 R 0331733 UTM 3365121	889	C.S. Chalcolithic	Flake industry
Qī‘ān as-Sīq 8	14.9.2004	37 R 0335807 UTM 3366640	872	C.S. Chalcolithic	Single platform blade core and flake industry
Qī‘ān as-Sīq 9	14.9.2004	37 R 0336045 UTM 3366805	889	C.S. Chalcolithic	Flake industry

Qīʻān as-Sīq 10	14.9.2004	37 R 0336077 UTM 3366843	877	C.S. Chalcolithic	Grinding stone fragment
Qīʻān as-Sīq 11	14.9.2004	37 R 0336342 UTM 3367198	873	C.S. Chalcolithic	Flake industry
Qīʻān as-Sīq 12	14.9.2004	37 R 0336676 UTM 3367009	884	C.S. Chalcolithic	Grinding stone fragment, tabular scrapers, small blade core and flake industry
Qīʻān as-Sīq 13	25.9.2004	37 R 0329705 UTM 3366708	866	Pool, Indet.	
Qīʻān as-Sīq 14	20.9.2005	37 R 0331882 UTM 3364226	875	C.S. Chalcolithic	Tabular scrapers and flake industry
Qīʻān as-Sīq 15	16.10.2009	37 R 0331894 UTM 3364347	884	Rock shelter. Chalcolithic	Tabular scrapers, t- and y- shaped tools and flake industry
Qīʻān as-Sīq 16	17.10.2009	37 R 331899 UTM 3364256	888	Rujm	
Qīʻān as-Sīq 17	17.10.2009	37 R 0330686 UTM 3366302	900	Rujm	
Qīʻān as-Sīq 18	17.10.2009	37 R 0330888 UTM 3366430	892	Small Rujum	
Qīʻān as-Sīq 19	18.10.2009	37 R 0332105 UTM 3364564	886	C.S. Chalcolithic	Notched pieces and flake industry *
Qīʻān as-Sīq 20	18.10.2009	37 R 0333037 UTM 3364022	875	C.S. Chalcolithic	Blade core and flake industry *
Qīʻān as-Sīq 21	19.10.2009	37 R 0333110 UTM 3364045	876	C.S. Chalcolithic	
Qīʻān as-Sīq 22	20.10.2009	37 R 0334545 UTM 3363676	881	Small Rujm	
Qīʻān as-Sīq 23	21.10.2009	37 R 0334630 UTM 3363730	879	C.S. Chalcolithic	Notched pieces and flake industry *
Qīʻān as-Sīq 24	22.10.2009	37 R 0334512 UTM 3362216	880	C.S. Chalcolithic	Tabular scrapers, t- and y-shaped tools, notched pieces and flake industry *
Qīʻān as-Sīq 25	22.10.2009	37 R 0334604 UTM 3362207	884	Rujum - Burials	
Fak Abū Ṭur 1	14.9.2004	37 R 0342709 UTM 3367927	852	C.S. Chalcolithic	Tabular scrapers notched pieces and flake industry
Fak Abū Ṭur 2	15.9.2004	37 R 0345898 UTM 3365021	839	C.S. L. Neolithic	Large thermal flake industry
Fak Abū Ṭur 3	15.9.2004	37 R 0346091 UTM 3365106	848	C.S. Chalcolithic	Tabular scrapers and flake industry
Fak Abū Ṭur 4	15.9.2004	37 R 0346009 UTM 3364141	851	C.S. Chalcolithic	Flake industry
Fak Abū Ṭur 5	15.9.2004	37 R 0345591 UTM 3364332	842	C.S. Chalcolithic	Flake industry
Fak Abū Ṭur 6	15.9.2004	37 R 0345411 UTM 3364298	849	C.S. Chalcolithic	Flake industry
Fak Abū Ṭur 7	16.9.2004	37 R 0353178 UTM 3368570	776	C.S. Chalcolithic	Flake industry

Fak Abū Ṭur 8	16.9.2004	37 R 0353271 UTM 3368949	762	C.S. Chalcolithic	Tabular scrapers and flake industry
Rijlat Sālim 1	12.9.2004	37 R 0345052 UTM 3363403	840	C.S. Chalcolithic	Tabular scrapers, small blade core and flake industry
Rijlat Sālim 2	16.9.2004	37 R 0344771 UTM 3363452	831	C.S. Chalcolithic	One bifacial knife, tabular scrapers, small blade core and flake industry
Rijlat Sālim 3	16.9.2004	37 R 0344622 UTM 3363246	826	C.S. Chalcolithic	Tabular scrapers and flake industry *
Rijlat Sālim 4	17.9.2004	37 R 0345476 UTM 3363223	837	C.S. Chalcolithic	Single platform core and flake industry *
Rijlat Sālim 5	17.9.2004	37 R 0344769 UTM 3363215	844	C.S. Chalcolithic	Flake industry *
Rijlat Sālim 6	17.9.2004	37 R 0344643 UTM 3363131	838	C.S. Chalcolithic	Tabular scrapers and flake industry *
Rijlat Sālim 7	17.9.2004	37 R 0341803 UTM 3364213	852	C.S. Chalcolithic	Flake industry
Rijlat Sālim 8	17.9.2004	37 R 0341707 UTM 3364461	870	Rujm, Indet.	Grinding stone fragment *
Rijlat Sālim 9	17.9.2004	37 R 0341505 UTM 3364460	846	C.S. Chalcolithic	Flake industry
Rijlat Sālim 10	18.9.2004	37 R 0352127 UTM 3360152	791	C.S. Chalcolithic	Tabular scrapers and flake industry
Rijlat Sālim 11	18.9.2004	37 R 0351997 UTM 3360107	830	C.S. Chalcolithic	Grinding stone fragments, tabular scrapers, blades and single platform core
Rijlat Sālim 12	18.9.2004	37 R 0353565 UTM 3358182	795	C.S. Chalcolithic	Flake industry *
Rijlat Sālim 13	18.9.2004	37 R 0353895 UTM 3358222	797	C.S. Chalcolithic	Tabular scrapers, single platform core and flake industry *
Rijlat Sālim 14	18.9.2004	37 R 0339555 UTM 3364334	864	C.S. Chalcolithic	Tabular scrapers and flake industry *
Rijlat Sālim 15	18.9.2004	37 R 0338416 UTM 3363954	864	Chalcolithic? Hellenistic	Tabular scrapers, blades, t- and y-shaped tools and flake industry
Rijlat Sālim 16	18.9.2004	37 R 0337305 UTM 3364957	873	Neolithic?	Bowel rim, blades and flake industry *
Rijlat Sālim 17	18.9.2004	37 R 0337432 UTM 3365102	867	Neolithic-Chalcolithic	Flake industry *
Rijlat Sālim 18	19.9.2004	37 R 0338960 UTM 3364280	859	Neolithic?	Tabular scrapers, t- and y-shaped tools, and flake industry *

Rijlat Sālim 19	19.9.2004	37 R 0340753 UTM 3362783	855	C.S. Chalcolithic	Rotator fragments and flake industry *
Rijlat Sālim 20	19.9.2004	37 R 0342459 UTM 3361941	846	C.S. Chalcolithic	Grinding stone fragments, scrapers and flake industry
Rijlat Sālim 21	20.9.2004	37 R 0343372 UTM 3360861	854	C.S. Chalcolithic	Rotators, tabular scrapers and flake industry *
Rijlat Sālim 22	20.9.2004	37 R 0344129 UTM 3361341	847	C.S. Chalcolithic	Blades and flake industry *
Rijlat Sālim 23	22.9.2004	37 R 0346170 UTM 3359403	742	C.S. Chalcolithic	Flake industry
Rijlat Sālim 24	22.9.2004	37 R 0348042 UTM 3359957	822	C.S. Chalcolithic	Flake industry *
Rijlat Sālim 25	22.9.2004	37 R 0347903 UTM 3360124	805	C.S. Chalcolithic	Flake industry *
Rijlat Sālim 26	25.9.2004	37 R 0339558 UTM 3366027	864	Pool, Indet.	
Rijlat Sālim 27	25.9.2004	37 R 0339722 UTM 3366059	856	Rujm, Indet.	
Rijlat Sālim 28	14.9.2005	37 R 0339230 UTM 3364445	856	C.S. Islamic?	T- and y-shaped tools and flake industry
Rijlat Sālim 29	18.9.2005	37 R 0345681 UTM 3363654	871	Rujm, Indet.	
Rijlat Sālim 30	22.10.2009	37 R 0341162 UTM 3364252	848	Cemetery	T- and y-shaped tools and flake industry
Abayyaḍ 1	11.9.2004	37 R 0373872 UTM 3371148	686	Rujm, Indet.	One scraper, bedouin *wasm*
Abyaḍ 1	24.9.2004	37 R 0378805 UTM 3365537	677	Cairn, Indet.	Pottery shards and flake industry
Abyaḍ 2	24.9.2004	37 R 0379061 UTM 3365995	664	C.S. Chalcolithic	Tabular scrapers and flake industry *
Abyaḍ 3	24.9.2004	37 R 0379395 UTM 3365588	666	Rujm, Indet.	Blade core and flake industry
* Flake industry includes retouched thermal flake.					

Mohammad B. Tarawneh
Fawzi Q. Abudanah
Department of Archaeology
Al-Hussein Bin Talal University
mohnaram_tara@yahoo.com

Bibliography

Abu Duruk, H., al-Rahim, M. and Murad, A.
1983 Excavation of a Neolithic Site at Thumama. *Atlal* 8.

Alon, D., and Levy, T.
1980 Preliminary note on the Distribution of Chalcolithic Sites on the Wadi Be'er She'va and Lower Wadi Besor Drainage System. *Israel Exploration Journal* 30: 140-147.

Bar-Yosef, O., Belfer-Cohen, A., Goren, A., Hershkovitz, I., Mienis, H., Sass, B. and Ilan, O.
1986 Nawamis and Habitation Sites Near Gebel Gunna, Southern Sinai. *Israel Exploration Journal* 27 /3-4: 65-88.

Beit Arieh, I.
2003 *Archaeology of Sinai: The Ophir Expedition*. Tel Aviv: Institute of Archaeology.

Bender, F.
1974 *Geology of Jordan*. Berlin: Gebrüder Borntraeger.

Eddy, F., and Wendorf, F.
1999 *An Archaeological Investigation of the Central Sinai, Egypt*. Cairo: American Research Centre in Egypt.

Fujii, S.
1998 Abu Tulayha West: An Interim Report of the 1997 Season. *Annual of the Department of Antiquities of Jordan* 42: 123-140.

Gilead, I.
1992 Farmers and Herders in Southern Israel During the Chalcolithic Period. Pp. 29-41 in O. Bar-Yosef, and A. Khazanov (eds.), *Pastoralism in the Levant, Archaeological Materials in Anthropological Perspective*. Wisconsin: James Knight.

Gophna, R.
1979 The Settlement of the North-Western Negev during the Chalcolithic Period (The fourth millennium B.C.). Pp. 203-208 in A. Shmueli, and Y. Gardos (eds.), *The Land of the Negev 1*. Tel Aviv: Ministry of Defence Publishing House.

Henry, D.
1995 *Prehistoric Cultural Ecology and Evolution, Insights from Southern Jordan*. New York: Plenum Press.

Levy, T.
1983 The Emergence of Specialized Pastoralism in the Southern Levant. *World Archaeology* 15 /1: 15-36.

Quintero, L., Wilke, P. and Rollefson, G.
2002 From Flint Mine to Fan Scraper: The Late Prehistoric Jafr Industrial Complex. *Bulletin of the American Schools of Oriental Research* 327: 17-48.

Rothenberg, B.
1971 An Archaeological Survey of South Sinai. *Palestine Exploration Quarterly* 103: 4-29.