

MA'ĀN, AN EARLY ISLAMIC SETTLEMENT IN SOUTHERN JORDAN: PRELIMINARY REPORT ON A SURVEY IN 2002

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Introduction

Important archaeological remains extending north and northeast of the modern town of Ma'ān (معان) have been investigated as part of the Swiss-Liechtenstein Foundation's (Umayyad Settlements) project. The fieldwork lasted from 20th to 30th July 2002. The team, under the direction of the writer, comprised Christian de Reynier (archaeologist, SPMS/Neuchâtel), Sylvain Dumont (surveyor, Paris) and Hugo Amoroso (student, IASA/Lausanne). Mr Raed al-Rubayhat worked as representative of the Department of Antiquities.

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During the eleven-day survey, a careful examination was conducted of the remains extending on and eastward of the al-Ḥammām hill. Some of the remains, which were initially surveyed in 2001, have been badly damaged, and some have disappeared completely because of bulldozer activity between 1998 and 2001. The fieldwork included a topographical survey of the whole site (with all the remaining structures), detailed architectural analyses and drawings of the best preserved structures, as well as the collection of surface sherds to provide more reliable dating.

This work allows us to assign most of the remains that can actually be seen to the Umayyad period. The compound, which probably corresponds to the Umayyad property mentioned in Ma'ān by Ibn 'Asākir, includes three *quṣūr*; an enclosed and irrigated area of more than 535 hectares; and a huge hydraulic system including different kind of canals and aqueducts, a mill with two horizontal

wheels, a very big *birkah* and several smaller cisterns. Some smaller structures, such as houses or lime ovens, were also investigated.

This short article is only a first presentation of the work done and of our new hypothesis of the site's history. A more extensive report, presenting all the evidence and especially the ceramics, will be published in due course.

Ma'ān in the Historical Sources

Ma'ān is usually identified with the *Admatha* or *Kastron Ammatha* in the late Antique sources. This toponym first appears in the *Notitia Dignitatum*, compiled around 400AD, but reflecting, for some parts of the eastern provinces, an earlier situation stretching back to Diocletian's reign. *Admatha* was then the garrison place of a camel-mounted cavalry unit, the *Ala Antana dromedariorum* (*Notitia Dignitatum*, Or. XXXIV. 33). The Beer Sheva Edict gives the name *Ammatha*.

The same name appears later in the sixth century *Petra Papyri* under the slightly different form of *Kastron Ammatha*, where a citizen of Petra, one "Flavios Dusarios, son of Valens", is recorded as holding the office of prefect (P. Petra Inv. 67; Gagos and Frösén 1998: 475).

The transition from Byzantine to Islamic rule in Ma'ān is documented by Arabic sources referring to the place by its modern/Arabic name. Much relevant information has been brought together by Schick (1995: 392-393) and part of this has been discussed by Donner (1981: 105, 109). It was in Ma'ān that the regional governor acting on behalf of Byzantium, Farwa bin 'Amr al-Judhāmī, converted to Islam prior to the conquest, and was as a result crucified by the Byzantines (al-Bakri I: 549; al-Balādhurī I: 510-511; Ibn Hishām I.2: 958; Ibn Sa'd I.2: 18, 31; VII.2: 148-149; Yāqūt III: 688). In 8/629 Muslim soldiers made a stop in Ma'ān on their way to Mu'ta (Ibn Hishām I.2: 792; Yāqūt IV: 571). Later on, Ibn 'Asākir reports on a castle (*qaṣr*) belonging to one of the Banū Umayyah; in

front of the castle was a green garden near a (Ibn 'Asākir: 520; XXXVIII, 101-103, 106-108). During the 11th century, al-Iṣṭakhri and Ibn Ḥawqal make mention of a fortress still inhabited by the Umayyads and their clients (al-Iṣṭakhri 124; Ibn Ḥawqal: 185).

At the end of the 10th century al-Maqdisi describes Ma'ān as one of six towns in the ash-Sharāh district, with Ṣughar (south of the Dead Sea) as capital (al-Maqdisi 1963). Later, as one of the main stop over points on the Darb al-Ḥajj between Adhr'āt (Dar'a) and Tabūk, Ma'ān frequently found its way into the writings of the geographers. The town maintained its position as an important pilgrim's halt, administrative centre, and market place (fruits, vegetables and slaves) for the south of Bilād ash-Shām throughout the Ayyubid, Mamluk and Ottoman periods. Ottoman sources (cited by Musil 1927: 248) tell us about building activities related to al-Ḥajj fort, perhaps built on the order of Ṣultān Sulaymān, and its water supply.

Previous archaeological work in Ma'ān

The archaeological remains in Ma'ān have not previously attracted much attention, nor have been studied in a comprehensive manner. In the late 19th and early 20th century several travelers visited and subsequently described some parts of the ruins visible in al-Ḥammām (الحمّام) and on the plateau extending eastward (*apud* Brünnow and Domaszewski 1905: 4-5). The Germans Brünnow and Domaszewski were the first to provide a fuller account of the remains, including a sketch plan of the area between al-Ḥammām and al-Mutrāb (المتراب), a partial plan of the al-Ḥammām enclosure and a detailed plan of a building (now destroyed) below the al-Ḥammām hill (Brünnow and Domaszewski 1905: 1-6). Their account is still very valuable, not least because it includes full citations from all previous description of the site.

The Germans were followed by the Austrian Musil and the French Dominicans Jaussen and Savignac. The former provided a detailed description of the twin settlements known to him in Ma'ān (Ma'ān ash-Shāmiyyah and Ma'ān al-Ḥijāziyyah). Although his account of the ruins is not as detailed as that of Brünnow and Domaszewski, he published a more comprehensive general sketch plan of some of the ruins and aqueducts scattered across the area. He also provided a brief synopsis of historical sources related to Ma'ān (Musil 1907: 273-274, 309-310; Musil 1926: 2-5, 243-248, 326-331). Between Musil's two accounts, the Do-

minicans published careful descriptions of the al-Ḥammām hill and its surroundings, including a cemetery of unknown date plundered shortly before their visit. They also included a discussion of some of the Islamic sources (Jaussen and Savignac 1909: 33-42).

The aerial reconnaissance carried out by Stein during the late 1930s allowed him a better understanding of the hydraulic system, although his findings unfortunately remained unpublished until relatively recently (Gregory and Kennedy 2001: 295-301). A fault common to all these works, however, is the absence of a comprehensive overview of the site's components, leading to a misinterpretation of its date and function. The general picture that emerges is that of an unspecified, or possibly military, Roman settlement.

More recently, Parker investigated the square enclosures in al-Ḥammām and Mutrāb on the assumption that they were Roman or Byzantine forts (Parker 1986: 100-103). The surface sherds published after his survey only partially sustain his interpretation and a significant number of sherds found in al-Ḥammām are in fact early Islamic. His sketch plan of the al-Ḥammām (fort) is very valuable as it has been now completely destroyed. The closest parallels he provides for both enclosures are Umm al-Walid and Khān az-Zabīb, now clearly dated to the Umayyad period (Bujard and Genequand 2001).

Finally we must mention Kennedy's aerial reconnaissance of 1998 (Kennedy 2000). This provides a very clear view of some of the site's main features, including the al-Ḥammām enclosure and nearby ruins situated on the top of the hill, all of which have since been bulldozed. The 1: 10,000 scale aerial survey carried out by the French Institut Géographique National in 1981, kindly provided by the Royal Geographic Centre, completes the documentation.

It is worth noting the presence of *al-Hajj* fort situated in the southern part of the modern town, that is near the former Ma'ān al-Ḥijāziyyah settlement and oasis and beyond the area discussed in this paper. It is reported by various sources and was examined by Petersen in the mid-1980s (Petersen 1989). It has been now transformed into a cultural center.

RESULTS OF THE 2002 SURVEY

General Topography

The archaeological remains extend over an area of more than 535 hectares. Because of the growth

of the modern town, the western remnant – situated on the southern bank of the Wādī Ma'ān – now fall within the immediate vicinity of buildings of the northern part of the town. There are several perennial springs in this *wadi*, at the origin of the Ma'ān ash-Shāmiyyah oasis. With less than 100mm mean annual rainfall, these springs are the most important source of water for sedentary life and agriculture in the Ma'ān area.

Wādī Ma'ān to the north, together with a tributary of Wādī al-Maḥaṭṭa (وادي المحطة) to the south, delimit a triangular plateau which broadens to the east (Fig. 1). After several kilometres, both *wadis* and the plateau disappear in the flat area which marks the beginning of the al-Jafr depression (*sabkha*).

The al-Ḥammām hill marks the western end of the plateau. The hill was in part an archaeological mound and has now been almost completely levelled. A huge open cistern (*birkah*) and a square enclosure with a central courtyard, as well as several smaller buildings, were situated immediately to the west of the hill. The square enclosure and most of

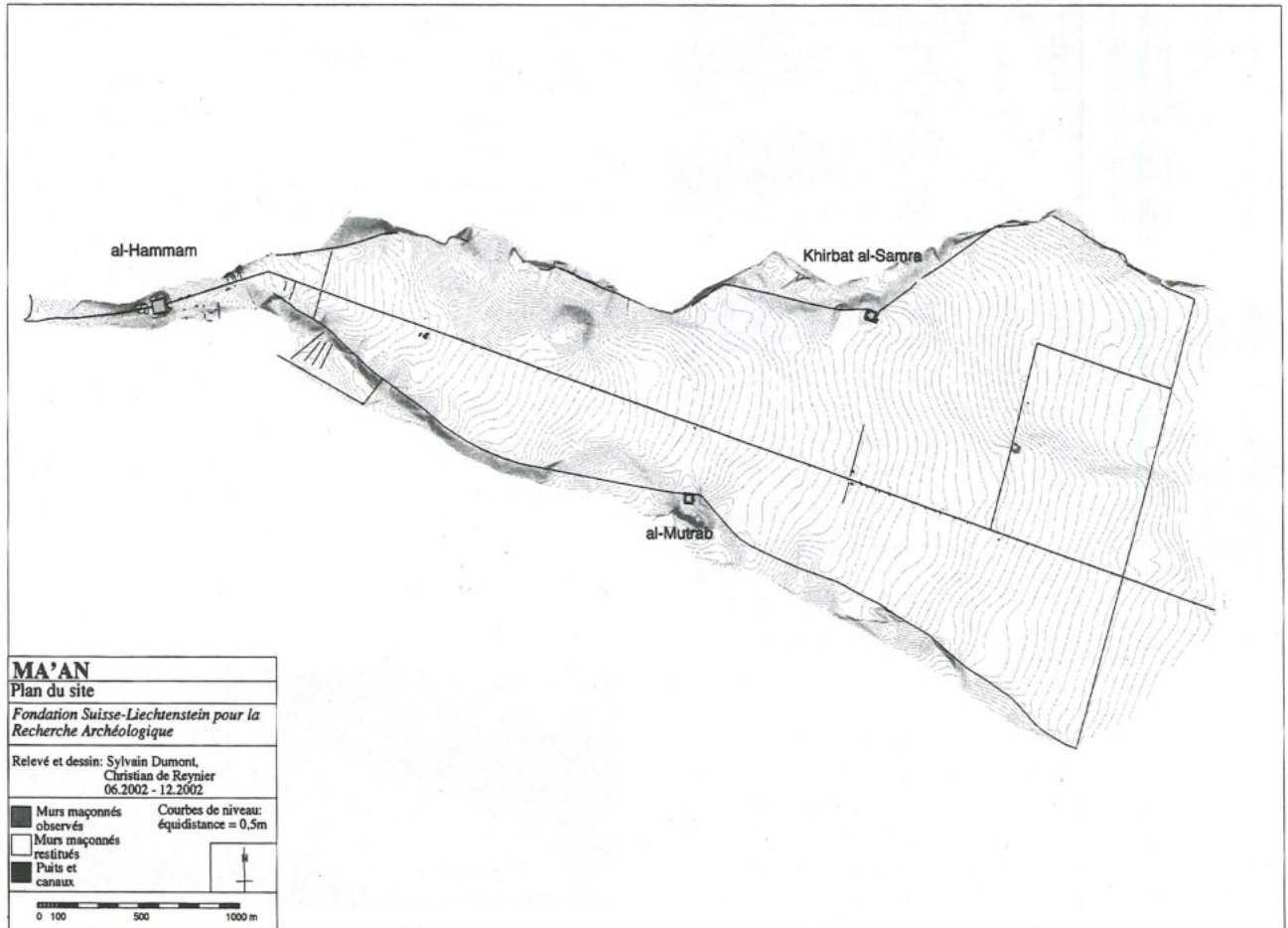
the remains around it were destroyed at the same time as the hill-levelling.

An aqueduct with several branches starts at the cistern and crosses the plateau for about 5.45km. The edges of the plateau, along both *wadis*, are delineated by a low enclosure wall which, to the east, also crosses the plateau in a north-south direction, in order to close completely the area which could potentially be irrigated by the aqueduct. On two places along the main aqueduct ruined buildings can be seen

A second square building with a central courtyard is situated near the middle of the southern edge of the enclosed area. This building has been known as al-Mutrāb since the first written descriptions of the site. A third similar one, previously uninvestigated, is situated along the northern edge in an identical position. The name given today to this ruin is Khirbat as-Samrā (خربة السمرا), due to the dark stones used in its masonry.

Al-Ḥammām

Three main features can be grouped under the



1. General plan of the archaeological remains in Ma'ān/al-Ḥammām and eastward (S. Dumont and C. de Reynier).

al-Hmmam toponym: the cistern (*birkah*); the first square enclosure; and the pre-Islamic *tall*.

The cistern is a large structure measuring 60.20 x 59.90 x 4.70m, constituting a reservoir of 16,948 cubic metres. It is built entirely in stone and lime mortar, with regular courses of medium sized stones separated by lines of smaller ones, and is strongly reminiscent of the Umayyad hydraulic structures (cisterns and dams) at Umm al-Walid/Wādī al-Qanātir and Qaṣr Mushāsh (Genequand 2001; Bisheh 1989) (Figs. 2 and 3). The cistern is supplied with water by an aqueduct fed by the springs of Maʿān ash-Shāmiyyah, 2km distant to the west. Before entering the cistern, the water is stored in a smaller settling reservoir from where it could also be diverted to a channel running along the northern edge.

The aqueduct leading to the cistern is very well preserved, except in few places where it has given



2. Al-Ḥammām, end of the first aqueduct with the cistern in the background (photo D. Genequand).



3. Al-Ḥammām, detail of the cistern's masonry (photo D. Genequand).

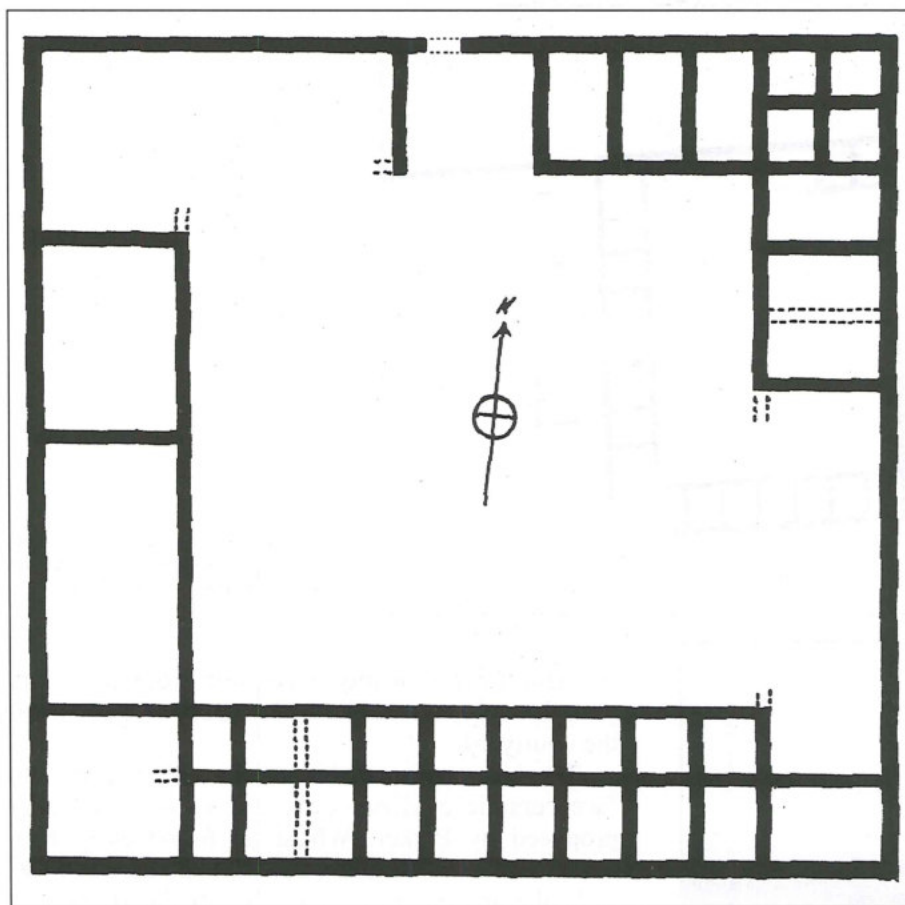
way to olive-groves. Of particular note is one stretch where, in order to cross a smaller *wadi*, the aqueduct becomes a bridge about 43m long and over 2.80m high, with a small vaulted passage at the bottom. Several hundred metres before this reaches the cistern, the aqueduct ceases to follow the general slope of the land to stay at a higher level on the top of a carefully constructed supporting

wall. Shortly before the cistern it reaches a height of more than 2.50m, by now supporting two separate channels (Fig. 2). At the same point, the aqueduct narrows from a width of 3.30m to 2m. It is then followed by an oblique waterfall 4.40m long, clearly indicating the former presence of a watermill (Fig. 4). No trace of the milling chamber can be seen on the surface, but the presence of the two channels at the end of the aqueduct and along the waterfall suggests the possibility of two horizontal wheels, thus representing a rare example of a double mill. From a technical point of view, this mill with its oblique waterfall appears to have been built following the antique and early Islamic tradition. Later – i.e. medieval – mills usually use the vertical waterfall. The nearest parallel to the present installation is the Umayyad mill at Qaṣr al-Hir al-Gharbi, which uses a single oblique waterfall, and is similarly situated on an aqueduct connecting a huge cistern with an agricultural enclosure (Schlumberger 1986: 4).

Immediately to the east of the cistern was situated the first of three square buildings with central courtyards in the enclosed area. This has now completely vanished and we have to rely mainly on Parker's sketch and description (Parker 1986: 100-102 and fig. 45) and on Kennedy's aerial photographs (Kennedy 2000: 175). It was a rectangular structure (61 x 51.50m) with rooms organised in four aisles around the central courtyard (Fig. 5). The western and eastern aisles seem to have been composed of larger rooms than the southern and northern ones which comprise two rows of smaller rooms. The main door was in the middle of the northern side. Parker reports that the enclosure wall was 1.20m thick: a very insubstantial structure for a building supposed to have performed a military function. It is, moreover, clear that the enclosure wall had no towers, nor bastion, nor even simple buttresses. Unfortunately it is no longer



4. Al-Ḥammām, end of the first aqueduct followed by the mill's oblique waterfall (photo D. Genequand).



5. Al-Ḥammām, sketch plan of the enclosure or qaṣr (now destroyed) (after Parker 1986).

possible to collect sherds in and around this building, but Parker's sample comprised about one third Umayyad sherds. It is not clear whether these were found only in and around this particular enclosure, or throughout the al-Ḥammām area. Nevertheless, it is hard to consider this building as having been a military fort and it is much more likely to have been an early Islamic residence or *qaṣr*.

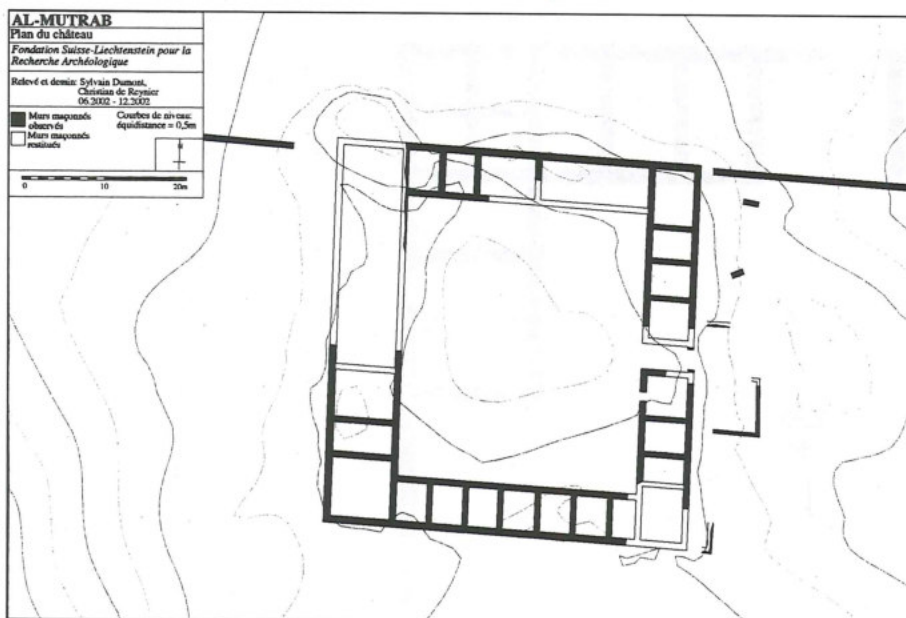
Farther to the east was the al-Ḥammām hill. This site, slightly more elevated than the surrounding land, had a diameter of about 200 m. It has now been almost completely levelled in a very impressive way, except for a small area on the east of the hill. Traces of walls can be followed in some places and, where these walls have been partially unearthed, two or three construction phases can be distinguished. Numerous fragment of marble facings are scattered on the ground. The surface ceramic finds indicate an occupation during the Bronze or Iron Age and during the Nabataean, Byzantine, early Islamic and Medieval periods. It is quite clear that this hill represents the site of the pre-Islamic settlement of Ma'an. It was also here that Jaussen and Savignac – like several other observers before them – come across the uprights of a monumental door which resembled the door of the

legionary camp at al-Lajjūn (Jaussen and Savignac 1909: 40; Brünnow and Domaszkeski 1905: 4-5). Unfortunately none of the earlier descriptions of this area are particularly clear, and no verification of their claims can now be made; but it is not impossible that this may have been the fort of the camel-mounted cavalry unit known by the *Notitia Dignitatum*.

Other smaller constructions and stone built fences were scattered around the hill and between the hill and the cistern. Most of them have been destroyed now, but they still can be observed on the aerial photographs.

Al-Mutrāb

Al-Mutrāb, also known as Umm at-Trāb (أم التراب) is an isolated building situated on a slightly elevated point on the southern edge of the plateau. The building is orientated east-west, its door being on the east side (Figs. 6 and 7). The wall encircling the plateau abuts its north-western and north-eastern corners. The building is almost square (46.50 x 47m) and presents a regular plan with four aisles around a central courtyard. It is built of roughly dressed sandstone blocks and flint and lava boulders. Several places, especially the



6. Al-Mutrāb, plan of the enclosure with central courtyard (S. Dumont and C. de Reynier).



7. Al-Mutrāb, view of the enclosure from the south (photo D. Genequand).

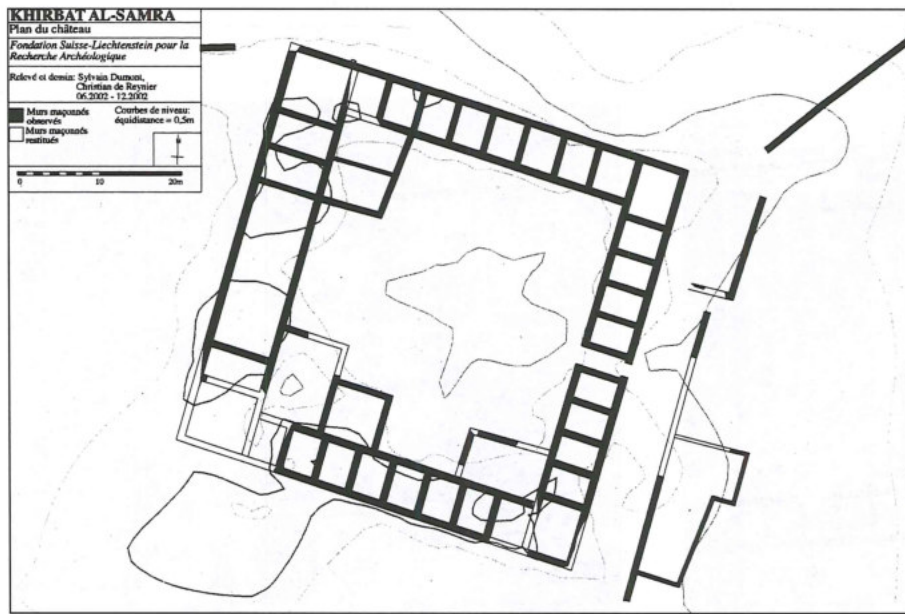
north-western quarter, have been badly damaged by bulldozer activity. The enclosure wall is only 0.75m thick and clearly lacked any kind of tower or buttress. The western and eastern aisles comprise a line of rooms of different sizes along the enclosure wall. The southern aisle is composed of seven small rooms filling the space between the western and eastern aisles. The northern aisle most probably followed the same plan, but is unfortunately badly damaged now. Except for the room directly to the south of the entrance, no door can be discerned because of the badly preserved state of most of the masonry. The plan of the southern part of the building published by Brünnow and Domaszewski is not fully reliable, but provides an idea of some of the links between the courtyard and the various rooms (Brünnow and Domaszewski 1905: 5). Most

of them were probably accessible from the courtyard through a door. There is no trace of a portico in the courtyard.

The occupation of this site as reflected by surface ceramic evidence differs from what has been proposed by Parker. Whilst he found early Byzantine and some Chalcolithic sherds (Parker 1986: 102), the present survey also identified early Islamic ones, especially some painted sherds which are amongst the clearest diagnostic pottery for the Umayyad period (buff ware with red painting). The date and function of this building will be discussed again in the conclusion within the context of the site as a whole, and in the light of other parallels, but it is likely that we are dealing with an Umayyad monument built on a site previously occupied during the Byzantine period. No remains of any other construction survives, but the site's slightly elevated position is naturally favourable for settlement and building materials from previous constructions could easily have been reused during the Umayyad period.

Khirbat as-Samrā

The situation of Khirbat as-Samrā is very similar to al-Mutrāb. This is again an isolated monument on the fringe of the plateau, but this time on the northern edge. As in the case of al-Mutrāb, the wall which encircles the plateau abuts two of its corners. The square enclosure is a little larger (50.45 x 51m) and is roughly orientated east-west with a single entrance on the eastern side (Figs. 8 and 9). It is built of the same materials, with a noticeable predominance of lava and flint boulders,



8. Khirbat al-Samrā, plan of the enclosure with central courtyard (S. Dumont and C. de Reynier).



9. Khirbat al-Samrā, view of the enclosure from the north-western corner (photo D. Genequand).

hence the ruin's name. The enclosure wall is again a very thin one (0.80m) without any external protrusive structure. Four aisles – of which the eastern and western ones appear to have been built first – surround a sizeable courtyard. The eastern aisle has eleven rooms; the central one is a vestibule and the corners ones are larger. The same occurs with the corner rooms of the western aisle, the main difference here being that the centre seems to be occupied by one much longer room. The northern and southern aisles are composed of a row of eight small rooms filling the space between the corner rooms. There is again no trace of a portico, but the courtyard is occupied by some constructions characterized by lower walls. These could have been bases for mud-brick elevations or merely fence walls.

The surface ceramic evidence, which is sparse for this site, indicates a possible late Byzantine

presence followed by an early Islamic occupation. There are no Roman or early Byzantine sherds. The conclusion, once again, must be that we are almost certainly dealing with an Umayyad residence or *qasr*.

The Enclosure and Hydraulic System

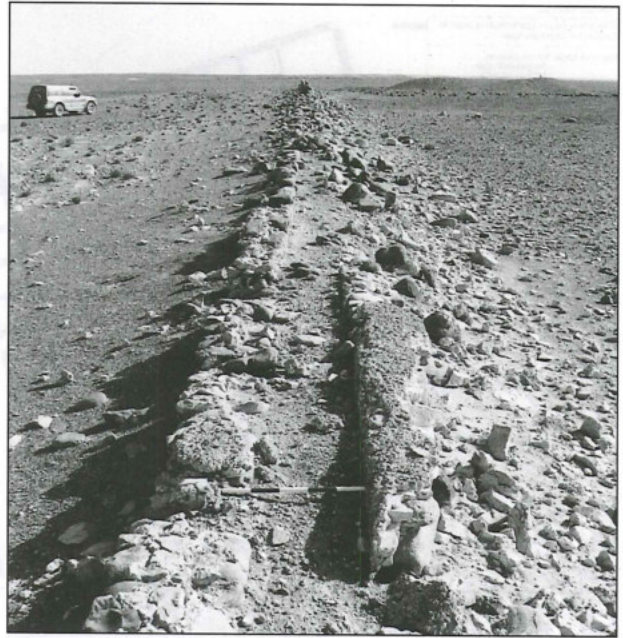
As already mentioned, the whole plateau to the east of al-Hammām is enclosed by a wall. This structure is about 0.70m in width, and is still preserved to a height of about 1m in some places (Fig. 10). Originally, judging from the quantity of collapsed stones, it was probably not higher than 1.50m. If the structure in itself is not strikingly impressive, its extent is much more so. The wall follows the edge of the plateau along both *wadi-s* and then crosses the plateau in a roughly north-south direction, forming a completely closed space. The total length of this wall reaches about 11.83km for an enclosed area covering more than 535 hectares. The enclosed area corresponds clearly to the surface, which could be irrigated by the hydraulic system described below. The enclosure wall always follows the contour lines of the edge of the plateau and, in several places, even goes almost to the base of northern *wadi*. It is therefore impossible that it could have been used to support another aqueduct, or indeed that it can be seen as related in anyway to the supply of water. The only place where the wall appears to be more closely related to the hydraulic system is at its eastern extremity. A sluice built at the base of the wall can be discerned on the north-south segment, which marks the end of the irrigated area. There were probably other ones, which are now buried. This sluice was intended to let re-



10. Remains of the wall encircling the plateau (photo D. Genequand).

maining water flow out of the enclosed area after it had circulated through the irrigation channels.

The hydraulic system covering the plateau has its origin at al-Ḥammām cistern, from which a main aqueduct runs almost straight along the center of the plateau in a west-north-west to east-south-east direction. 5.455km long, it extends just beyond the end of the enclosed area, and is entirely built in stone masonry and lime mortar. Depending on the land's contour lines, its height varies between 1.10m in some places and ground level in others. The width is always approximately 1.40m with a single central channel 0.40m deep and 0.40m wide carefully covered by several layers of lime mortar (Fig. 11). The aqueduct appears to have had two main branching-points. The first occurs to the south of Khirbat as-Samrā, where two secondary aqueducts depart from the main structure, one running to the north and one to the south. Both have been largely destroyed by ploughing. The second branching-point, 0.735km farther to the east, is very well preserved. A secondary aqueduct initially leaves the main watercourse in a northerly direction, then turns at right angles to the east, before terminating in a small reservoir situated just short of the enclosure wall (Fig. 12). There were perhaps a third of these main branching-points on the far western end of the plateau, but the structures are now too badly damaged to be identified conclusively. The main aqueduct also has plenty of smaller secondary offshoots on its southern side. These consist of shorter channels in



11. Segment of the main aqueduct crossing the plateau in a west-east direction (photo D. Genequand).

stone masonry – 9-10m long – which are regularly spaced and depart obliquely from the main aqueduct. These were almost certainly followed by earthen channels designed to irrigate more remote surfaces. Some of the offshoots are still closed by a row of small vertical stones.

On several locations across the plateau, the present survey discerned and documented houses, small cisterns or lime ovens. It is clear that the lime ovens are related to the aqueduct construction, which would have required a huge amount of lime mortar waterproofing. The date of the houses is more difficult to assess because of the scarcity of surface sherds. However, a Thamudean inscription has been found on a stone in a secondary position in the biggest house to the west of the plateau, strong-



12. Small reservoir situated at the end of one of the secondary aqueducts (photo D. Genequand).

ly suggesting a late Antique or Islamic construction.

The layout of the hydraulic system is striking in its coherence; and the construction was evidently realised in a single large-scale operation, as indicated by the fact that identical building materials and methods were used throughout, from the Ma'an as-Shāmiyyah spring to the far eastern end of the aqueduct.

Finally we must mention that such a big enclosed area (535 hectares), entirely irrigated by a very carefully planned hydraulic system, is quite unusual in the southern Levant. It can be seen in some sense as a rare counterpart (albeit a rather less flamboyant one) to the huge Umayyad enclosures or gardens with impressive water supply in Qaṣr al-Hir al-Gharbī (46.5 hectares) and Qaṣr al-Hir al-Sharqī about (700 hectares) in Syria (Schlumberger 1986: 2-5; Grabar *et al.* 1978: 98-109).

Conclusion

The coherence and probable single building operation of the hydraulic system and enclosure appears clear. In fact it goes beyond these two elements, and includes the two buildings in al-Mutrāb and as-Samrā. Situated in similar positions and evidently linked with the plateau's enclosure wall, which abuts them, they appear to have been part of a single planned settlement involving several residences and something resembling an agricultural estate. The similar monument at al-Ḥammām, now destroyed, may well have been part of the same settlement.

These three square buildings built around a central courtyard share only a handful of common elements with Roman or Byzantine military architecture, apart from their general layout. They lack any kind of defensive device and the thickness of their external walls (0.75-0.80m) deny them any protective function. They have no parallels in other monuments with a well-established military role and the presence of three supposed forts or camps in such a limited space would have been inappropriate. They must then belong to another category of monuments.

As we have seen, the surface ceramic samples collected in various places clearly show an Umayyad occupation in al-Ḥammām, Matrāba and Khirbat as-Samrā. This Umayyad occupation is moreover strongly documented by the historical sources summarized at the beginning of this article. It is therefore very likely that we are dealing with an Umayyad settlement comprising three residences or castles (*qaṣr/quṣūr*) related to an agricultural estate. Although this hypothesis could only be conclusively

proven through excavations or soundings, comparison with other Umayyad sites certainly seems to support it. We have already noticed the parallels of the mill and the irrigated enclosed area with the celebrated examples at both sites known as Qaṣr al-Hir in Syria. Similar Umayyad or presumably Umayyad structures exist at Qaṣr al-Ḥallābāt (Bisheh 1982) and at Azraq/al-Jiyāshī (Watson and Burnett 2002) in Jordan.

The plans of the three residences certainly invite comparison with buildings dated to the Umayyad period. Recent research in Jordan has brought to light a handful of Umayyad residences or small castles whose layout differs dramatically from the usual pattern (i.e. around 70m square enclosure with half-round buttresses or towers and internal *bayt* arrangement). These are: Qaṣr Mushāsh (Bisheh 1989); Umm al-Walid (Bujard and Genequand 2001); al-Ḥumayma (Oleson *et al.* 1999: 436-443); and Maḥraq/al-Fudayn (al-Husan 2001: 7-9). In Musash there are two such monuments: one is built in stone and is 26m wide; the second is in mud-brick and around 35m wide (personal observation). Both are just square buildings without buttresses or towers and with rooms very simply organised around a central courtyard. Umm al-Walid has two of these residences, which are part of a more extensive compound also comprising a more (classical) Umayyad castle and impressive hydraulic and agricultural features. The two square buildings with which we are concerned are the central and western *quṣūr*, which are 48 and 46m in width respectively, and lack protrusive elements. Both have a single row of rooms along the enclosure wall and present a *bayt*-like division created through partition walls in the central courtyard. In al-Ḥumayma, only 40km south-west of Ma'an, the residence of the Abbassid family is a rectangular building of 61 x 50m with two or three rows of rooms around a central courtyard. The second and third rows were added later to a first core ring of rooms (43 x 39m). Maḥraq/al-Fudayn is still poorly published, although completely excavated. It is constructed along quite similar lines, with rooms irregularly organised around a courtyard to form an enclosure of about 37 x 40m.

These buildings, which are also called *qaṣr* in the written sources, differ from most of the other Umayyad castles, which are more clearly palatial structures. Together with their accompanying structures, they nevertheless belong to the same broad category of early Islamic aristocratic settlement. Several among these, like Ma'an or Umm al-Walid, are more oriented towards economic activities, i.e. in this case agricultural production. We

should finally mention that the presence of several castles, residences or palaces on the same site is another factor that is frequently found at these Umayyad settlements as shown both by the examples cited above: Qaṣr al-Hir al-Sharqī, Qaṣr al-Hir al-Gharbī, Umm al-Walid, Khān az-Zabīb and Qaṣr Mushāsh; and also by others at Jabal Says (Brisch 1963 and 1965), ar-Ruṣāfa (Sack 1999) and elsewhere. This may prefigure the more formal groupings found in buildings such as the large enclosure in Qaṣr al-Hir al-Sharqī, built as a *madīna* and reflecting a kind of proto-urbanism.

That there was a pre-Islamic occupation in Ma'ān is evident from the historical sources, as well as from the results of this and earlier surveys. This occupation was mainly concentrated on the al-Ḥammām hill, which apparently remained from Antiquity to the early Islamic period the core of the settlement in Ma'ān. It is also in its vicinity that the biggest of the *qusūr* was constructed. The scarcity of sherds from the medieval period in the same area indicates, however, a probable shift of the settlement to an area nearer to the springs, that is to one or both of the places still occupied at the end of 19th century (Ma'ān ash-Shāmiyyah and Ma'ān al-Ḥijāziyyah); settlement which eventually gave rise to the modern town. A short reconnaissance has been carried out at both sites in order to find sherds or archaeological remains that may confirm this very likely hypothesis. Because of the dense modern urbanism this undertaking failed to provide any significant results.

We may conclude that whilst a move certainly happened in Ma'ān between the end of the early Islamic period and the beginning of the Medieval period – i.e. from the al-Ḥammām area to the oasis areas of ash-Shāmiyyah and al-Ḥijāziyyah – it was nevertheless at the beginning of the early Islamic period that Ma'ān seems to have obtained a growing importance that it would retain throughout the coming centuries. During classical Antiquity, Petra was the main administrative, religious and commercial centre in southern Bilād ash-Shām. During the seventh century there is clearly a shift of some of these functions to another emerging town: Udhru/Augustopolis (Fiema *et al.* 2001: 432). This new settlement, apparently conceived at first as a military camp and comparable to other Byzantine towns scattered throughout the steppelands of the Levant, retained its importance under the Umayyad, as is shown by it being chosen as the location for the arbitration between Mu'āwiya and 'Ali in 37/657 (Yāqūt 1866-1873), as well as the fact that it appears on Ma'in's mosaic dated 719-720. At the end of the ninth century, al-Ya'qūbī gives Udhruḥ as the capital of al-Sharāh's district (al-Ya'qūbī, 1892: 329). After this, however, the town appears to have declined in

importance: at the end of the 10th al-Maḡdisī mentions it, with Ma'ān, as merely one of several towns in the same district (al-Maḡdisī, 1963: 130). Its significance then seems to dwindle further, with Ma'ān remaining, during the Medieval period, the only major settlement in the steppe lands of southern Jordan. The specific position of Ma'ān along the main north-south road – the *Darb al-Ḥajj*, which is used not only for commercial purposes but, above all, once a year in both directions for the pilgrim's caravan – is certainly the preeminent factor for its relative success and longevity.

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Appendix: Coordinates of the main structures

Al-Ḥammām/birkah:	UTM 36	0765012 3344720 alt. 1097m
Mutrāb:	UTM 36	0767635 334387 alt. 1073m
Khirbat as-Samrā:	UTM 36	0768529 3344678 alt. 1064m

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