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## Udruh and the Trade Route through Southern Jordan

### Introduction

I am at a very preparatory stage in the analysis of a mass of data resulting from five field seasons at the site of Udruh in southern Jordan. The mass of finds and field records—still in transit—awaits detailed analysis, from which more firmly established dates for my work should emerge. The findings I therefore present to you are not the whole picture but an introduction to the kind of material remains which we have been finding and I make some suggestions as to their importance in any analysis of the trade routes through southern Jordan in the Roman and Byzantine periods.

The previous surveys in the area have been focused on tracing the route of the Roman *Via Nova Traiana*. Brunnow and Domaszewski's monumental survey in 1897 and 1898 traced two frontier routes, each of which they thought was a road forming a fixed defensive frontier. *The trade routes through southern Jordan in Roman and Byzantine times were considered to be those two defended road lines forming an inner and an outer limes zone*. This hypothesis was elaborated or rejected by later surveyors of the region. Aurel Stein and Nelson Glueck between them located only a handful of sites in the whole of our survey area. The site of Udruh has been the focus of my survey and excavations annually since 1980.

Udruh/Udhruh lies 120 kms north of the Red Sea port of Aqaba, 20 kms north-west of Ma'an and 12 kms east of Petra at a height of around 1,300 m above sea level. It has attracted settlement throughout antiquity because of its geographic location and the perennial spring (the strongest in the area) which is used to irrigate the broad plain which stretches out into the desert to the east. In the Nabataean period it was an important caravan stop for trade coming from Aila which did not wish to negotiate the steep route down to Wadi Musa and Petra, but wished to proceed directly north to Damascus. In the Roman and Byzantine periods it was a strongly defended frontier town and probable military garrison (appendix one—historical references). The north and south walls are 246 m and 248 m long with six projecting interval towers while the west and east walls are 177 m and 207 m long with four projecting towers. Each corner has a horseshoe shape projecting

tower. Outside the south-west corner tower is a Byzantine church and within the town is an Ottoman fort (FIG 1).

A long stretch of the south wall has been exposed by excavation standing up to 6 m high (FIG. 2). There is no archaeological evidence yet (May, 1986) to suggest a foundation date for the original walls after the Trajanic era. The excavation of a Nabataean pottery kiln in 1983 and 1985 confirms the importance of a pre-existing site (FIG. 3). The towers are rebuilt and restructured up to the end of the 6th century AD. Several construction phases in the gateway area can serve to illustrate the continued use of the fortifications up to the end of the Byzantine period. Since the 6th century AD when tower XXII (FIG. 2) was rebuilt the fortifications have not been significantly altered. Similar continuity of use of the fortifications can be seen in the blocking of the opposite gateway on the north wall of the town where there is a well-constructed 3 m high blocking wall (FIG. 4). The threshold of the original gateway is still *in situ* and is heavily grooved with wheel tracks. Two hinge sockets and a central bolt hole are evidence of two large wooden gates in the earliest period.

The area encircled by the modern roads from Shobek to Ma'an to Ail to Wadi Musa was surveyed at the same time as the excavation of the main site of Udruh. Apart from a handful of known sites this area had never been the subject of detailed archaeological reconnaissance. The definite remains of three roads are illustrated (FIG. 5) together with clear wall remains. To avoid a palimpsest of little dots, *not* marked on the map are the two hundred sites which have been found in this area of approximately 800 sq kms. The trade route through southern Jordan cannot be separated from the frontier defensive system since the trade route in Roman and Byzantine times formed an important part of the 'limes' or defensive frontier system. In considering the frontier defensive system in our survey area I distinguish three types of monuments which we have found: 1. Roads and walls, 2. Forts and settlements, 3. Watch-towers.

### Roads and walls

The accurate location of the *Via Nova Traiana* was a problem for historians in their analysis of the Udruh frontier sector.



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1. Aerial photograph of Udruh, looking to the south-east. (Courtesy of Dr R. Cleave, Widescreen Pictorial Archive)



2. External view of the town wall of Udruh, with blocked north gate and projecting interval tower.



3. External view of the Nabataean kiln area in 1983. Town walls of Udruh are behind.



I consider the problem of which of several roads is the *Via Nova Traiana* essentially irrelevant to the discussion of a defensive system for which a network of horizontal and vertical support roads is a basic element. However, milestones close to Jerba, 2 kms north of Udruh, do confirm the line of a Roman

road, which is probably the *Via Nova Traiana*, and there is an inscription in Greek on a wayside altar set up by a traveller who was grateful to have reached Petra at this spot (*θεοις τοις Καταγομενοις εξ Καιης αλλοδαπης ενθα εις Πετραν [...] μιος ευχαριστων συν διοις*; Brunnow and Domaszewski



4. Excavations within the town, north gate blocking on the top right.



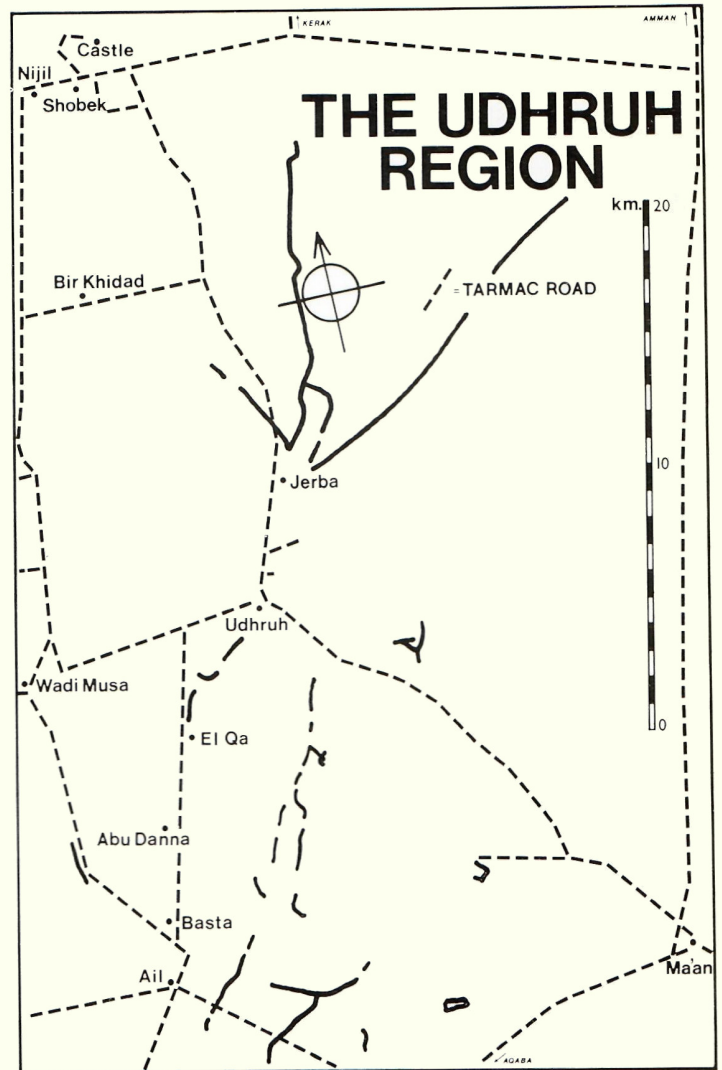
1904, 463). The most extensive limestone quarries in Jordan discovered in 1980, are located between the milestones and Udruh, and they may well be the quarries mentioned in the papyrus from Karanis (Bowersock 1983, 81) as being worked in 107 AD perhaps in connection with the *Via Nova Traiana*.

While only three definite road sectors are illustrated (FIG. 5), there is sufficient evidence from the location of new towers and forts to confirm two north–south roads crossing our survey area. One runs from Sadaqa through Ail and follows the edge of the escarpment with a branch road down to Petra, and then up to Negl and beyond, while the other which is clearer runs through Ail up to Udruh and on to Daʿjaniya. Mention must also be made of a possible road Udruh to Negl. At least three roads run east–west across the central survey area joining these north–south routes. While a myriad of smaller supply roads which must have joined towers and small farmsteads can be suggested, these were perhaps never more than consolidated dirt tracks, and therefore would not be expected to survive the ravages of time.

Particularly problematic in identifying Roman roads in the area are the long stretches of continuous walling or possible ploughed-up roads (FIG. 6). It has been suggested that the major wall line which runs on down beyond Sadaqa is of Islamic date, but on certain sectors ceramics indicate a Roman construction. Several stretches of wall seem to link towers in vantage positions on the hillside. When I am able to analyse the material from these sites adjacent to the walling, we will be able to distinguish which of these structures can be considered as Roman roads or perhaps even Roman walls. The manpower required to construct these walls and the towers (which seem often to be associated) suggests that they were deliberate defensive structures. It is possible that analysis of these several walls and roads might show their integral position in the overall defensive strategy of the region.

It is certainly too early to suggest that any of these walls

5. The survey area is limited to within the modern road line.



form a fixed defensive frontier in the Roman or Byzantine periods as elsewhere in the Empire, but by way of illustration it is perhaps worth mentioning the *Fossatum Africae* in Numidia which is generally agreed to be of Hadrianic foundation (117–138 AD). The *Fossatum Africae* consists of a shallow obstacle ditch 2.3–3.4 m deep and a wall 2–2.5 m high which has been identified over a distance of 750 kms along the edge of the Sahara in modern Algeria. Gichon pointed out in 1963 (:201) that a relatively shallow ditch and low wall could suffice to discourage desert raiders whose tactics rely on speed and surprise. Literary records also attest to the fact that the *Fossatum Africae* was successful as a frontier barrier, since as late as 534 AD Justinian ordered the *Fossatum* to be consolidated and manned (Luttwak 1976, 173).

#### Forts and settlements

The second type of monument I distinguished in the frontier



## 6. Continuous wall to the south of Udruh.



system was forts and settlements. The main site of Udruh has already been briefly described, but just 2 km to the south-west, around the base of the highest hill in the area, is a rectangular enclosure that could be a construction camp for Udruh or even an army marching camp or practice camp. The *claviculae* gateways are common on marching camps in England where they are invariably a Flavian device (69–96 AD). The enclosure also seems to be connected with a wall or road running to Udruh. I am at present researching other fort parallels in the Empire (cf. Masada-Roman camps).

The line of the road can be positively traced to the south where at Abu Danna the next new fort is identified close to the spring source. Its walls were constructed from well drafted ashlar and it seems to be of regular construction. It does not have clear sight lines but it is ringed by a network of towers on the hilltops. The next fort to the south in our survey area is Ail, of which sadly little survives. Moving north on the Ain Musa road another new fort is located at Jebel el Beitan where the identification as a fort is less secure and perhaps the site should rather be called a fortlet or a watch tower.

The distinction between a fort and a fortified farmstead (and indeed sometimes a large watch-tower) was difficult to make at many sites, as in the foothills (FIG. 7) to the north-west of Udruh where a regular square walled structure could very easily be described as either a fort or a fortified farmstead. The problem of archaeological terminology for these monuments could reflect the well attested economic change of the army during the Byzantine period into more of a locally recruited agriculturally dependent militia.

There is no problem of terminology with identifying settle-

ments and irrigation schemes. In the northern area of the survey there are numerous large unwalled settlements, as for example at Jerba. An aerial photograph is effective in showing the size of the settlement, the position of a watch tower, the extent of irrigation, and the signs of ancient cultivation on the edge of the desert. A large town (FIG. 8) is situated further to the west in the hills. It is surrounded by hillside which was tilled and terraced in antiquity. Apart from use by bedouin who have dismantled some of the earlier walls to construct animal enclosures, the site is little changed since its Byzantine settlers departed.

On the desert side of the survey area several Byzantine towns and agricultural systems were located. Jebel al Tahuna is particularly extensive with a continuous rampart over 4 km long and standing up to 2.5 m high. It encloses a farming area, a large town area, a water cistern and a complex water cantonment system connected to a dam (FIG. 9). A geological fault or anticline on the edge of the desert was well recognized by the Byzantine settlers who built their dam there. The underground water drains down from the hills to the west until it reaches this impermeable geological barrier. Today the water is exploited by pumping underground reservoirs and it is piped to the south-east to Ma'an.

#### Watch-towers

Watch-towers are the third type of monument distinguished in the frontier system. Towers are the most prolific defensive monument in the survey area with over 60 towers found, some with standing walls up to 3 m high. The tower in FIG. 10 is not very high today but it can still be clearly seen with the naked eye several kilometres away on the plateau. The



7. Fort or fortified farmstead in the hills to the north-west of Udruh.



vast majority of the towers are ideally sited with a clear view not only to the next tower in the chain but, more importantly it seems, to the next but one tower in the chain. Where possible the towers have been so constructed as to get a clear view of the fort at Udruh. Udruh lies on the plateau close to the desert, and the geography of this area with the hills gradually descending eastwards to the desert is ideal for a defensive tower system.

Using a geographic model (mainly for ease of description) four vertical chains of towers can be distinguished with a handful of exceptions. The western chain runs along the top of the escarpment above Wadi Musa, the second chain runs

further to the east in the intermediate foothills, while the third chain runs along the base of those foothills on the edge of the agricultural plateau. The fourth chain is located on that series of hills beside the Roman road which runs through Udruh. In that last chain on the edge of the desert, the presence of a spring appears to be an important factor in a tower's siting and consequently, as with the tower at Jerba, it is frequently combined with an extensive contemporary settlement. The handful of exceptions to this model are when further towers have been established between two of the vertical chains to permit horizontal communication at that point. This is most frequent where geographic factors affect the sight lines

8. Large settlement site.



9. Dam at Jebel al Tahuna.





10. Tower in the hills to the west of Udruh.



between the two chains of towers. An additional chain, but a less certain one, can be suggested lying in the desert to the far east of the survey area.

As was mentioned above, the distinction of fort, fortified farmstead or watch-tower is not easy in the field (FIG. 7). Perhaps this is to be expected when one considers that the builders were probably the same for all three types of monument. It seems that the three distinctive functions were not as clearly separate and defined in antiquity as we would like to make them today. Additional structures on the tower site, either pre-dating or post-dating the use of the watch-tower, can not only erase or disguise a tower completely, but the surface artifacts associated with the additional structures can suggest a false date for the use of the watch-tower. While watch-towers of various periods can surround a settlement site (FIG. 8) it is frequently impossible on the basis of surface architecture or artifacts to suggest that a tower existed on the same spot before the extensive settlement.

1985 was the first year in which our limited finances permitted us to excavate one tower which was called by Brunnow and Domaszewski—Tell Udruh—and it lies just to the east of the main site of Udruh. Excavations, although restricted by a modern cemetery, exposed a two-storied tower structure of Roman foundation built on top of an Iron II settlement (FIG. 11), where the housing units are clear. It has not yet been possible to examine the pottery and small finds in any detail, but it is clear from the 5 m by 30 m trench that we have an Iron II settlement terraced on the hillside. It is similar to Tawilan both in the size of the housing units and the method of wall construction (water-rolled smooth stones with mud fill). Interestingly, but I am not sure yet how significant, the superstructure on the stone wall foundations formed a thick ash deposit (up to a metre thick) with large pieces of burnt wood *in situ*.

### Conclusion

Three types of Roman and Byzantine defensive sites have been

11. Excavations in 1985 on Tell Udruh. Iron II structures.



distinguished in the survey area and I have presented here an introduction to those types and, I hope, to their importance in any understanding of the defence and trade routes of this region. Our findings clearly show that the monuments in the Udruh region were those of a frontier defence-in-depth. This supports the later view of Professor Bowersock (1976 after 1971) who considers the Arabian frontier not as a strictly demarcated line but rather with the term '*limes*' to designate the entire frontier region. This view and our findings are at variance with Dr Parker, who writes (Parker 1985, 76) of a fixed frontier with the *Via Nova Traiana* itself serving as the fortified frontier in the pre-Diocletianic era—this clearly does not apply to the Udruh sector of the Arabian frontier. On the other hand it would be nice to interpret the marching camp at Tell Abara and associated walls and towers with the other fixed frontiers in the Empire, but I believe that when we complete the detailed analysis of the several walls and roads in the area we will see their integral position within the overall defensive strategy for the area as a whole, and not as a single fixed barrier.

### References

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 Parker, S. T. 1985. Review of Roman Arabia (ed. Bowersock, G. W.) *Bulletin of the American Schools of Oriental Research* 258: 75–77.



**Appendix one**

Historical references to Udruh/Udhruh (Roman–Byzantine):

2nd century AD	<i>ἄδρου</i>	Ptolemy, <i>Geog</i> v, 16, 4.
6th century AD		Rebuilding by Jabala ibn Harith (Hamza al Isfahani, Beirut ed. 1961, 100).
	<i>ἄδαρα</i>	Steven of Byzantium xviii, 18.
	<i>ἄδροα</i>	Beersheba edict (Clermont–Ganneau 1906, 412).
7th century AD		630 AD Udruh sends delegation to Prophet (Yaqt al Hamawi).
		658 AD Udruh is a conference centre for Muawiya ibn Abi Sofian and Khalif Ali ibn Abi Talib (al-Tabari, i, 3341).
8th century AD	ΩΔ(POA)	719 AD Church mosaic depiction (Revue Biblique, 1938 and Liber Annuus 1985)
10th century AD		Udruh is the home of a monk—Father Mousa ibn al-Hakim. (Z.D.M.G., LI, 454). Numerous further references by Islamic historians/geographers.

**Appendix two**

Publications on the survey/excavations at Udruh:

- 1982, Udruh, 1980 and 1981 seasons. *Annual of the Department of Antiquities of Jordan* xxvi; 415–416.
- 1983, Udruh—1980, 1981, 1982 seasons, a preliminary report. *Annual of the Department of Antiquities of Jordan* xxvii: 231–244.
- 1983, Udruh—The Frontier of an Empire. *Levant* xv: 110–131.
- 1983, *Liber Annuus* xxxiii: 410–411.
- 1986, Udruh—eine entiake Stätte vor den Toren Petras. In M. Lindner (ed.) *Petra neue Ausgrabungen und Entdeckungen*, Bad Windsheim (Delp Verlag).
- 1986, Udruh 1983, *Liber Annuus*.
- 1986, Udruh 1985, *Archiv für Orientforschung*.
- 1986, Udruh and the Nabataeans, *Illustrated London News*, October.
- 1987, Udhruh, Caravan City and Desert Oasis—A guide to Udhruh and its surroundings, published by A. Killick.
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- 1987, Udruh 600–660 AD: Bilad esh Sham conference, Amman University, 1985.
- The Survey in the Udruh region.
- In Preparation:*
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