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## **Report on the activities of the Madâ'in Sâlih Archaeological Project at Umm Zarb in 2024**

Laïla Nehmé, Mustafa Ahmad, Jean Humbert, Emmanuel Laroze, Paul Mabilie, Katia Schörle, Shadi Shabo

### ► **To cite this version:**

Laïla Nehmé, Mustafa Ahmad, Jean Humbert, Emmanuel Laroze, Paul Mabilie, et al.. Report on the activities of the Madâ'in Sâlih Archaeological Project at Umm Zarb in 2024. CNRS. 2025, 75 p. <hal-04900322>

**HAL Id: hal-04900322**

**<https://hal.science/hal-04900322v1>**

Submitted on 20 Jan 2025

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Report on the activities

of the **Madâ'in Sâlih**

**Archaeological Project**

at **Umm Zarb** in 2024

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Laïla NEHMÉ, Katia SCHÖRLE, and Shadi SHABO**



January 2025

Cover page photograph L. Nehmé, 2023: Aerial view (by helicopter) of the site of Umm Zarb.

Next page photograph L. Nehmé, 2024: The House of Qāsim ibn 'Abdallāh bin Kuḥayl Shaykh al-Ṭawāl'ah min qabīlat al-'Enezī.

Page set up: Marc Balty art'air-éd.



الهيئة الملكية لمحافظة العلا  
Royal Commission for AlUla



Report on the activities

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**Archaeological Project**

at **Umm Zarb** in 2024



January 2025



# TABLE OF CONTENTS

<b>Research at Umm Zarb in 2024</b>	
Laïla NEHMÉ	7
<b>Thoughts on the architectural remains of Umm Zarb</b>	
Emmanuel LAROZE, Jean HUMBERT, and Laïla NEHMÉ	19
<b>The occupation of the basaltic lowland</b>	
<i>Appendix: List of structures identified on satellite images or surveyed on the ground</i>	
Laïla NEHMÉ (with Paul MABILLE and Katia SCHÖRLE)	35
<b>A note on the pre-Islamic pottery from Umm Zarb</b>	
Shadi SHABO	53
<b>The Islamic pottery of the settlement of Umm Zarb</b>	
Mustafa AHMAD	61
<b>Conclusion</b>	
Laïla NEHMÉ	71

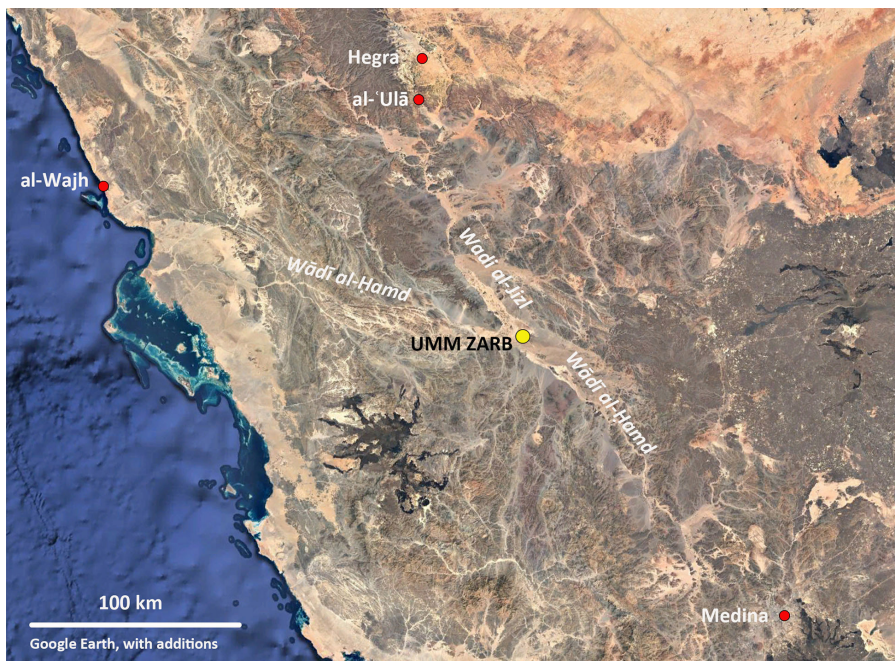


# Research at Umm Zarb in 2024

Laïla Nehmé (CNRS, UMR 8167)

The 2024 season at Umm Zarb, probably ancient Mochura in Ptolemy's *Geography* (Abshire et al. 2020: 24), followed two very short visits made to the site in 2019 and 2022. The preliminary investigations undertaken on these occasions seemed to indicate that Umm Zarb was both an Islamic and a pre-Islamic period site, possibly pre-Nabataean and/or Nabataean. This hypothesis was based on a number of arguments, among which the identification of pre-Islamic pottery on the surface and, among the latter, of a 1st century BCE/early 1st century CE Nabataean sherd picked up at the top of the tower of fort UZ001.<sup>1</sup>

The site was obviously located at a strategic point: 136 km south-east of Hegra, at the junction between wadis al-Jizl (which runs southwards from al-'Ulā) and al-Ḥamḍ (which runs from the south-east to the north-west between Medina and al-Wajh), thus at a natural crossroads controlling access from this part of the Ḥijāz to the Red Sea shore (**fig. 1**). The importance of Umm

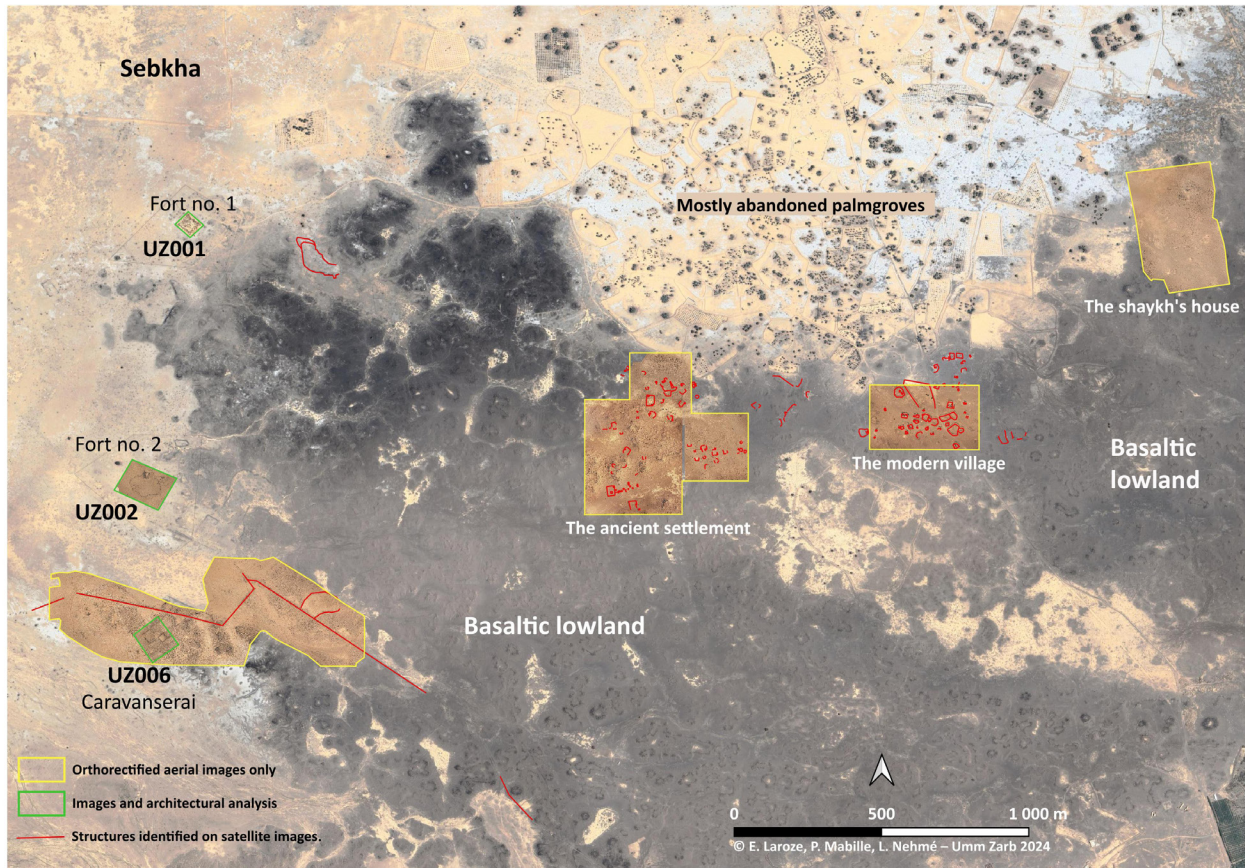


**Fig. 1.** Google Earth image showing the strategic location of Umm Zarb.

1. Nehmé et al. 2022: 187: “the fabrics of the body sherds suggest a pre-Islamic date for the sites Umm Zarb 1 and Umm Zarb 2”. The Nabataean sherd “may belong to Schmid Group 2 and be dated between the mid-first century BCE and the beginning of the first century CE”.

Zarb for the understanding of the ancient road network, its control and defense on the margins of the Nabataean Kingdom and the Roman Empire was therefore fully demonstrated.<sup>2</sup>

In 2022, drone photographs of the main structures were made though one of the latter, caravanserai UZ006, was missed on the ground (fig. 2). Besides, the photographic survey did not extend east of a theoretical north-south line drawn between UZ001 and UZ006. It did not cover the area of what is now named the “basaltic lowland”, i.e. the basaltic plateau stretching east and south-east of the main structures.



**Fig. 2.** The remains of Umm Zarb with their respective name and the work done in each group.

In this context, the objectives of the 2024 team were the following:

- undertake an architectural study of the two forts, UZ001 and UZ002, and of the caravanserai, UZ006;
- make a phogrammetric restitution of the three structures mentioned above;
- survey the areas east of the UZ001–UZ006 line and record the ancient buildings that had been identified by P. Mabilie on satellite images during the preparatory work;
- make more aerial photographs with a drone, including on the basaltic lowland, and obtain orthophotographs;
- pick up more pottery from various areas/structures and document it.

2. Reports on Umm Zarb include the following: MSAP annual report 2020: 133–134, available here: <https://hal.archives-ouvertes.fr/hal-03131855>; more complete: MSAP annual report 2021–2022: 175-190, available here: <https://hal.archives-ouvertes.fr/hal-03861945v2>. See also now Nehmé et al. forthcoming.

The survey team was composed of the following persons:

HUMBERT Jean	Draughtsman	Free lance
AL-KHAYBARI Adil	Archaeologist	MoC representative, Medina office
LAROZE Emmanuel	Architect	CNRS, UMR 8167
NEHMÉ Laïla	Archaeologist	CNRS, UMR 8167
SCHÖRLE Katia	Archaeologist	CNRS, UMR 7299
MABILLE Paul	GIS specialist	Free lance

A house was rented in the village of al-‘Ayn. Since it had been uninhabited for about twenty years, its owner, Ḥāmid Sa‘ūd bin Zhawah, restored it to make it habitable before we moved in.

## Summary of actions

The survey and aerial photographs allowed to identify three areas that had not been described before (see fig. 2). From east to west, these are:

- the “Shaykh’s house” and its outbuildings: orthorectified aerial photographs and ground survey;
- the “Modern village”: identification of structures on satellite images, orthorectified aerial photographs, ground survey and description of some of the buildings;
- the “Ancient settlement”: identification of structures on satellite images, orthorectified aerial photographs, ground survey and description of some of the buildings.

For these three areas, see next chapter, “The occupation of the basaltic lowland”.

On the structures that had previously been identified and described in the report published in 2022, UZ001 to UZ006, the following was done:

- orthorectified aerial photographs and architectural analysis, as well as extremely limited clearance along a couple of walls in UZ001 and UZ006.

The result of these actions is exposed in the present and following chapters.

## Additional information on the location and toponym of Umm Zarb<sup>3</sup>

The altitude at Umm Zarb is about 400 m asl, i.e. 300 m lower than al-‘Ulā. The site is located north of the modern farms of Qi‘arat al-Dūmah. It depends on the emirate *markaz* of al-Salīlah and belongs to the district (*muḥāfazah*) of al-‘Īṣ. This *markaz* was founded in 1392 AH (1972 CE) but there is still no asphalted road to reach it from the main road. In February 2024, the director of the *markaz* was Dakhīl Allah Muḥammad al-Juhanī and the local shaykh was Nāṣir bin Qāsim al-Ṭuwaylī al-‘Enezī, who lives in al-Salīlah. Both were present when we visited the *markaz* on 21 February 2024. According to Nāṣir bin Qāsim, the Ṭawāl‘ah settled at Umm Zarb in 1337 AH (1919 CE) but it is not until 1345 AH (1926 CE) that King Abdulaziz Al Saud wrote a *hibah* (donation document) that granted them rights over the land to Shaykh Nāṣir’s ancestor, Qāsim bin ‘Abdallāh bin Kuḥayl shaykh al-Ṭawāl‘ah min qabīlat al-‘Enezī. A photograph of the document itself was shown to us.

As for the name Umm Zarb, we were told that it was given to the area during the unification process of the Saudi state, before 1932, i.e. relatively recently. In Arabic, *zarb* means “an enclosure of wood

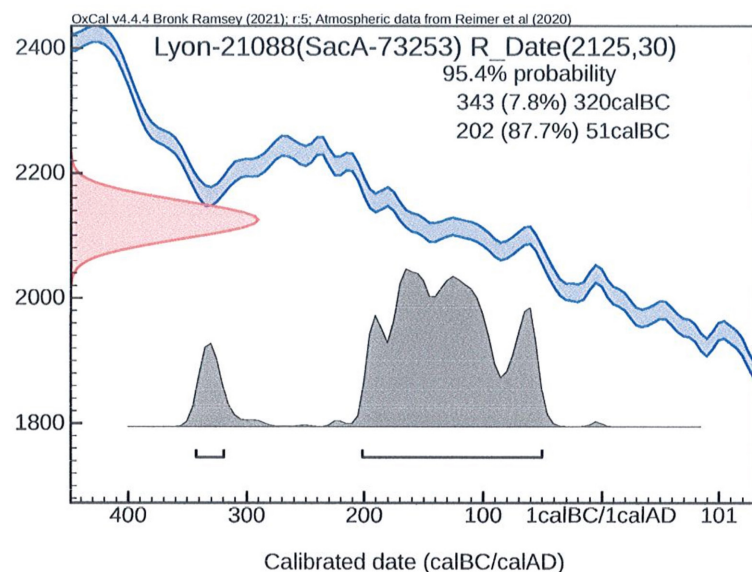
3. For the toponym in general, previous studies, and archaeological context, see Nehmé et al. 2022: 177–180.

for sheep or goats” or “the lurking place of a hunter, or sportsman or of an archer, or a shooter”.<sup>4</sup> According to our informant, *zurbān* refers to a low land covered by small basalt stones, as opposed to *ḥarrah* which refers to a high land covered with basalt stones. In the *Anthology of Geographical Terms for Natural and Human Features in the Kingdom of Saudi Arabia*, published in 2023 by the Saudi Arabian General Authority for Survey and Geospatial Information (p. 48), *zarb* (pl. *zurab*) means “an entrance”, “an animal barn”, “the remains of ancient monuments used as barricades”, or “a flat land that goes deep in sand”. In the same source, *zurbān* (pl. *zarābīn*) is said to refer to “small volcanic highlands that are similar and neighbouring and extend on one straight line”. The natural features and remains of ancient monuments visible at Umm Zarb correspond to the definitions of *zarb* and *zurbān*. Indeed, Umm Zarb has many animal enclosures, mostly built of basalt stones, which is understandable considering the abundance of this material in the area; it contains the remains of ancient monuments; the plateau is indeed a volcanic lowland. Whether the last characteristic was the determining factor to name the site remains uncertain.

### Dating Umm Zarb and preliminary parallels

Apart from the dating element—the Nabataean sherd—mentioned above, two <sup>14</sup>C dates were obtained recently, one in fort UZ001 and one in fort UZ002. For UZ001, the project finally received, in November 2024, the results for a charcoal fragment picked up in 2022 in the upper part of the tower of the fort (**fig. 3**). The very long delay before obtaining the date is due to a breakdown of the accelerator belonging to the institution to which it was sent.

The date is 343–320 calBC (7.8% probability) and 202–51 calBC (87.7%).



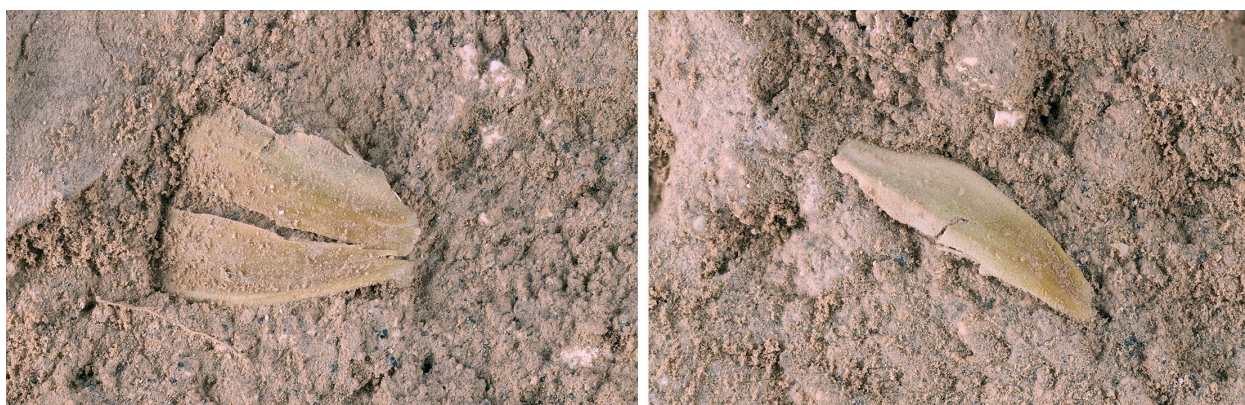
**Fig. 3.** UZ001.  
The <sup>14</sup>C results of the charcoal fragment picked up in 2022.

Another avenue for the dating of the forts appeared while exploring fort UZ002 in 2024. In the spring of that year, J. Pinot, from the Dadan Archaeological Project, went to Umm Zarb upon our request and collected a loose mud-brick from a mud-brick structure used to fill the compartments of the tower (**fig. 4** and see next chapter). In July, E. Chambraud, a PhD student at the French Museum of Natural History, extracted from the mud-brick a cereal chaff (**fig. 5–6**) with was then dated.

4. Lane 1863–1893, s.v.



**Fig. 4.** The mud-brick structure in the tower of UZ002 from which a loose mud-brick was collected in order to date the vegetal remains used as temper in them.



**Fig. 5.** The chaff in the mud-brick before extraction. © E. Chambraud.



**Fig. 6.** The chaff after extraction from the mud-brick. © E. Chambraud.

The chaff was identified by E. Chambraud as being naked wheat (*Triticum aestivum/durum*). According to her, the presence of cereal chaff in mud-brick structures may indicate that this plant was cultivated locally, not very far from the place where the mud-brick was found, as well as the secondary use, as temper, of vegetal products derived from the crops. She also pointed out that

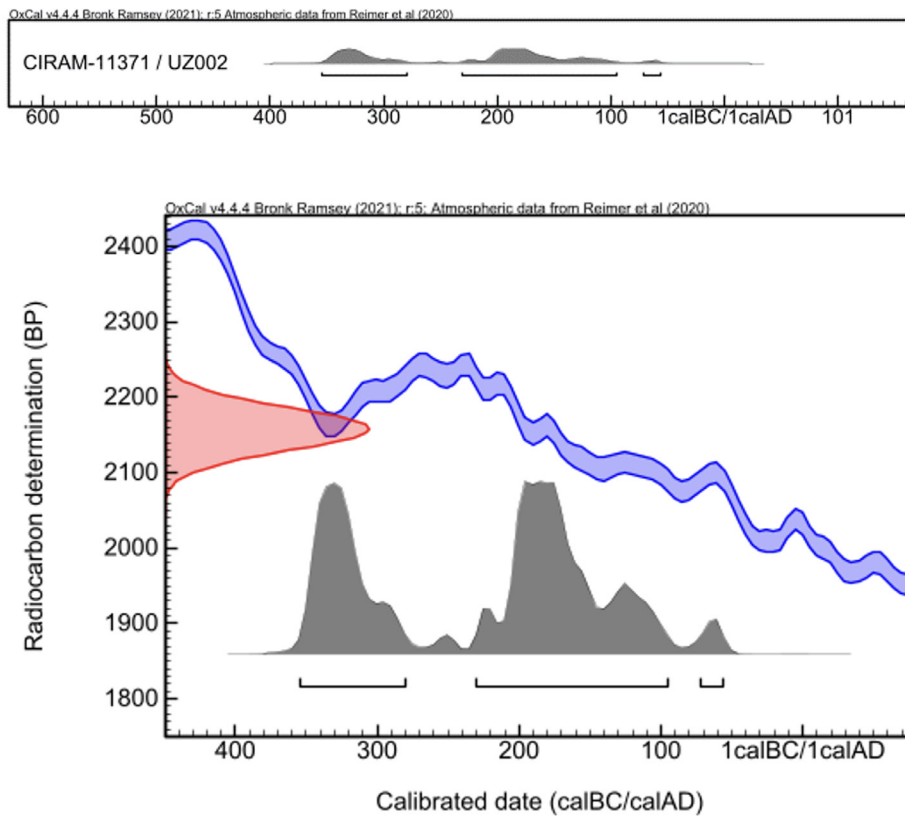


Fig. 7. UZ002. The  $^{14}\text{C}$  results as given by the CIRAM laboratory.

only a few examples of this use are known so far in North-West Arabia and very few for the Nabataean or earlier period.

Result (fig. 7):

Lab no. CIRAM-11371. The conventional date for the chaff is  $2158 \pm 29$ . The  $^{14}\text{C}$  calibrated date at 2 sigma (probability 95.4%) is the following:

355–280 BC (35.2%)

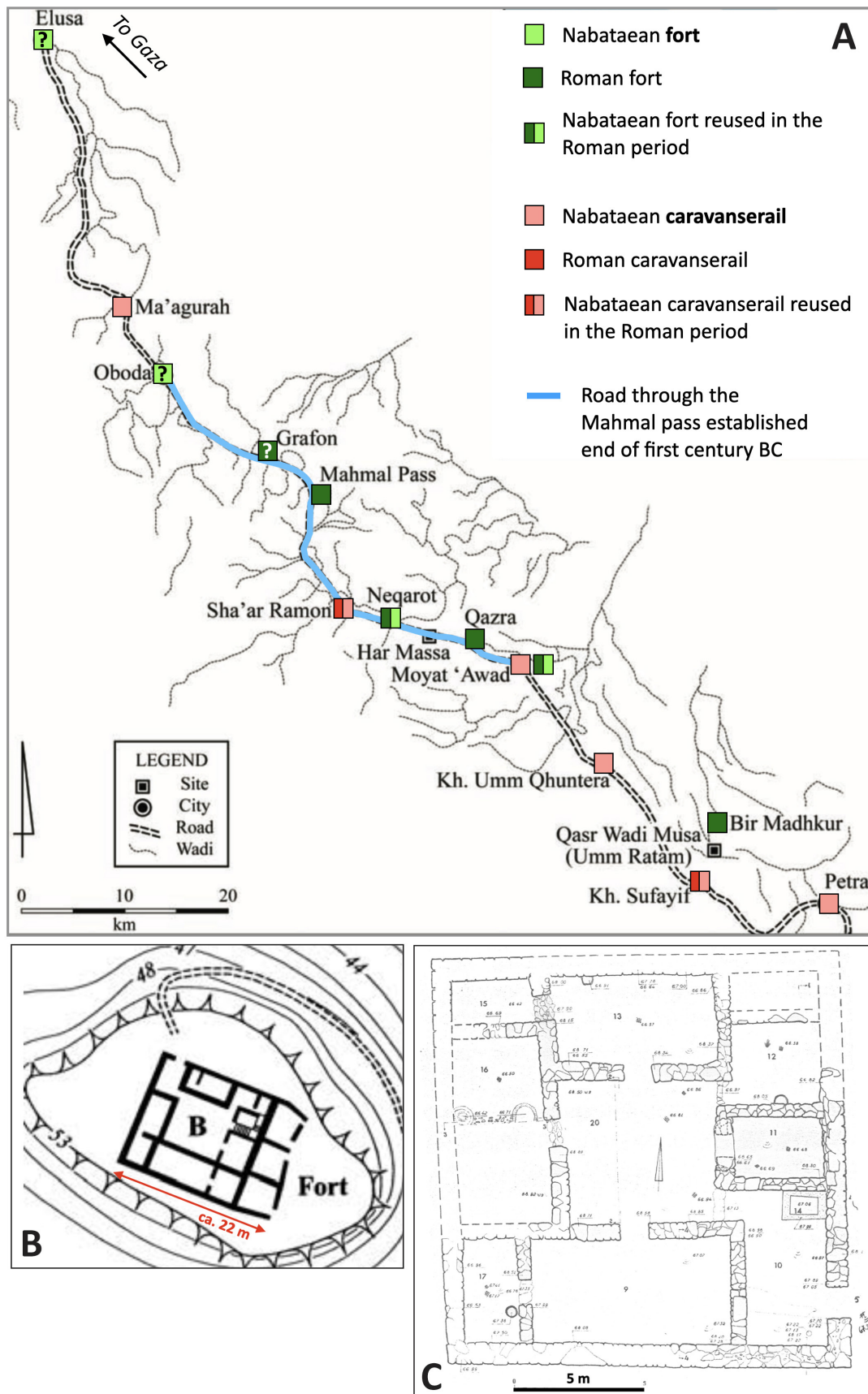
231–96 BC (58%)

72–57 BC (2.2%)

The two  $^{14}\text{C}$  dates are consistent, *ca* 350–50 BC, with a higher probability in the interval 230–50. It is therefore clear that the two forts were built in antiquity, whether or not they continued to be used in the following periods. The interval 230–50 BCE, corresponds, in Hegra and Dadan, to the end of the Lihyanite period and the beginning of the Nabataean one. For the moment, we have no idea whether there was a Lihyanite military presence south of ancient Dadan and whether the Lihyanite authorities cared to control access to the Red Sea in the area of al-Wajh. In Dadan proper, no Lihyanite fortified structure was identified so far though some may have existed.<sup>5</sup>

As for the Nabataeans, we know for certain that they controlled the caravan roads down to the latitude of Medina/Yathrib (Nehmé et al. 2021: 102) and al-Şuwaydirah (Nehmé et al. 2020: 126–127). The apparatus on which this control was based, if any, is however not known. The southernmost known Nabataean military structure is the so-called citadel of Hegra, which stood on Hill B in the southern part of the Residential area of the Nabataean city, overlooking the Roman

5. J. Rohmer, pers. comm.



**Fig. 8. A.** The Petra-Gaza road (Erickson-Gini et al. 2013: fig. 1, with additions). **B.** The Nabataean fort of Moyat 'Awad (*ibidem*: fig. 24). **C.** The Nabataean fort of 'En Rahel (Courtesy Israel Antiquities Authority).

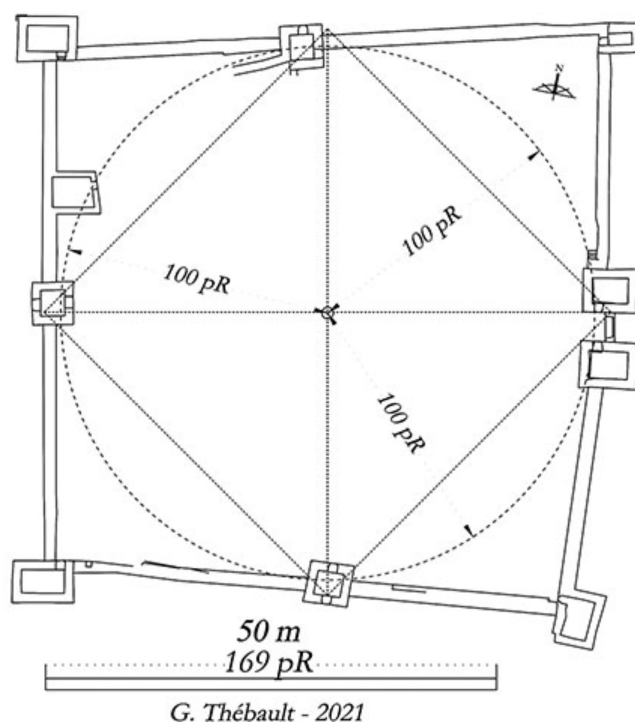
fort from the east (Fiema 2020: 18). Unfortunately, Hill B was used as a quarry in the 20th century, thus obscuring, if not destroying, any ancient remains.

Two parallels are worth mentioning here, especially if one considers the function of the Umm Zarb installations: keep under surveillance the wadis and their edges, which were privileged caravan/trade itineraries. In the case of Umm Zarb, two roads were concerned: the north-south incense route and the connection of the latter with the Red Sea. The first parallel is that of the Nabataean forts on the Petra–Gaza road through the Negev (**fig. 8**). These forts were “situated defensively on hilltops overlooking major tracks and next to springs and wells” (Erickson-Gini et al. 2013: 26). Two examples, those of Moyad ‘Awad and ‘En Rahel—which lies *ca* 15 km due north of Moyat ‘Awad—are particularly interesting. Their plans show that they may correspond to the keep towers built within the enclosures of the Umm Zarb forts. The dimensions are identical<sup>6</sup> and all four structures (UZ001, UZ002, Moyat ‘Awad and ‘En Rahel) have seemingly tripartite division of the internal space.

The two Negev Nabataean strongholds are not built inside a fortified enclosure but this may be explained by the fact that they are located on hilltops and therefore benefited from a natural protection, whereas the forts at Umm Zarb were built at the level of the wadi bed.

Moyad ‘Awad is dated to the “Hellenistic” period and may be 1st century BCE or earlier, while the earlier phase of the ‘En Rahel fort is dated to the first century BCE (see respectively Erickson-Gini et al. 2013: 25 and Israel et al. 1982).

The second parallel is that of the fort of Khirbat al-Samrā (**fig. 9–10**). Samrā is an important Roman, Byzantine, and Islamic site, 35 km north-east of central Amman. I am grateful to Alain Desreumaux for drawing my attention to it, as well as to Gérard Thébault and Jean-Baptiste Humbert for their explanations and



**Fig. 9.** The fort at Khirbat Samra (Thébault 2021, fig. 27).

comments. The Samrā fort stands at a key point on a basalt ridge, at the crossroads between the Petra-Bosra road and the road from the Wādī Sirhān via Azraq to Jerash and the Mediterranean, thus at a strategic location on ancient trade routes. The Samrā fort is twice as large as UZ001. It has rectangular rather than square corner towers and there is an intermediary tower in the middle of each side of the curtain wall except on the side with the gate. This is justified by the length of the curtain wall. The towers flanking the gate in the Samrā fort project both outwards and inwards. At Umm Zarb, the towers flanking the gate seem to project only outwards. They are rectangular in both forts but in Umm Zarb, their long sides are parallel to the curtain wall.

6. UZ001: 15x15 m; UZ002: *ca* 14x14 m; ‘En Rahel: *ca* 16x16 m; Moyat ‘Awad: *ca* 15x22 m.



**Fig. 10.** Aerial view of the fort at Khirbat al-Samrā (APAAME\_20080918\_DLK-0344).

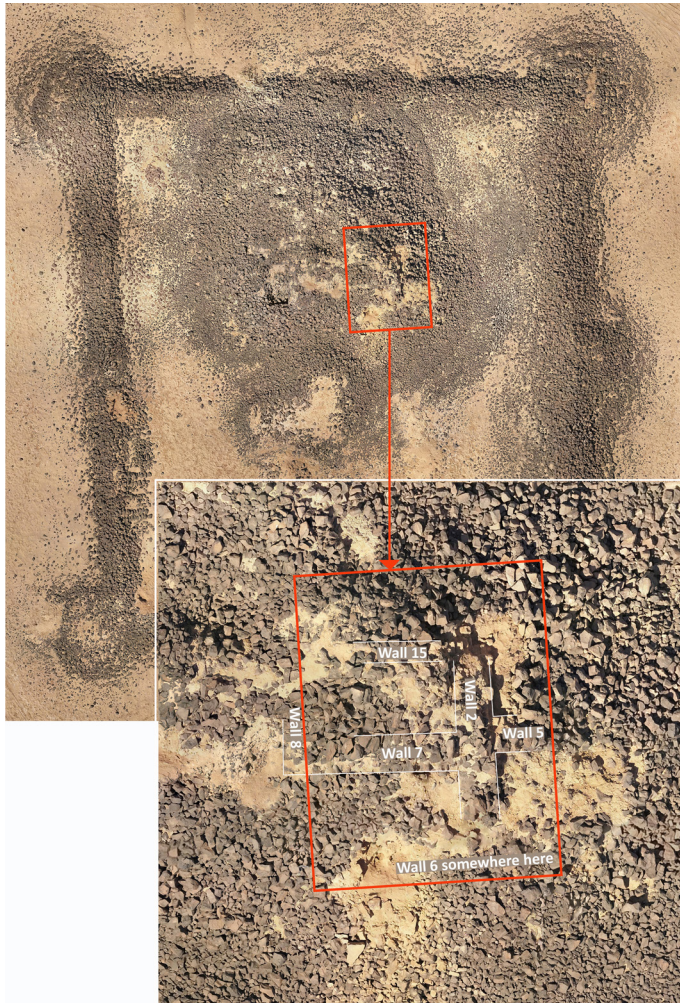
The chronology of the Khirbat al-Samrā fort remains uncertain but according to Jean-Baptiste Humbert, it is likely that it was used—not necessarily built—by the Nabataeans even though this was not evidenced through archaeological excavations.

Whatever the case, and coming back to Umm Zarb, it would not be surprising that the Nabataeans, who founded Hegra, were present at Dadan from around the mid-first century BCE onwards (possibly earlier)<sup>7</sup> and who cared to keep control over the trade routes despite the development of the traffic on the Red Sea (Nehmé 2021 and Nehmé 2022), built a caravan station at Umm Zarb, ancient Mochura.

## Conclusion and perspectives

It is probable that the forts, the settlements, and the caravanserai are not contemporary. The difference in the pottery, the absence of Islamic material in the two forts and the plan of the latter support this hypothesis. The absence of Islamic material in the forts makes it unlikely that they were built after the 7th century CE. It is also unlikely that they were Diocletianic, the end of the 3rd/early 4th century CE being precisely the time when the Roman military presence stops at Hegra. Of course, nothing is impossible, and there may have been, at this time, a final surge of Roman military effort in the region. On the other hand, if one considers the date of the pottery collected and the strategic position on the Hegra–Red Sea and Yathrib/Medina–Red Sea routes, a fortification in the first century BCE makes much more sense. This corresponds to the development of the Red Sea maritime route, to the foundation of Hegra, and, perhaps slightly later, to the early Nabataean inscriptions on the Darb al- Bakrah itinerary between Hegra and Petra.

7. The Nabataean presence at Dadan is documented mainly by two inscriptions dated to regnal years of Nabataean kings, one dated to year 11 of Obodas II, i.e. 19 BCE, and one, a bilingual Dadanitic/Aramaic dated to the reign of a king named Aretas. See al-Theeb and al-Suhaibani 2021 and, for the second one only, and Norris 2023: 165: “If we take the script as a form of pre-Nabataean, this could be either Aretas I (c. 168 BCE) or Aretas II (120/110–96 BCE). If, on the other hand, we identify the script as a local Aramaic variety, this could be any of the four kings, with a possible preference for Aretas IV (9/8 BCE–40 CE)”.



**Fig. 11.** Suggested location of a trench in the tower of UZ001.

For future research at Umm Zarb, scheduled preferably in 2026, the following may be aimed at, though this may require a significant amount of human force:

- clarify the plan of the two forts and their enclosure;
- open an excavation trench in the tower of UZ001 (**fig. 11**), and possibly one in UZ002, the location of which needs to be determined;
- open a trench in one of the structures which yielded Abbasid pottery, the most suitable ones being probably UZ017 or UZ045 (see next chapter).

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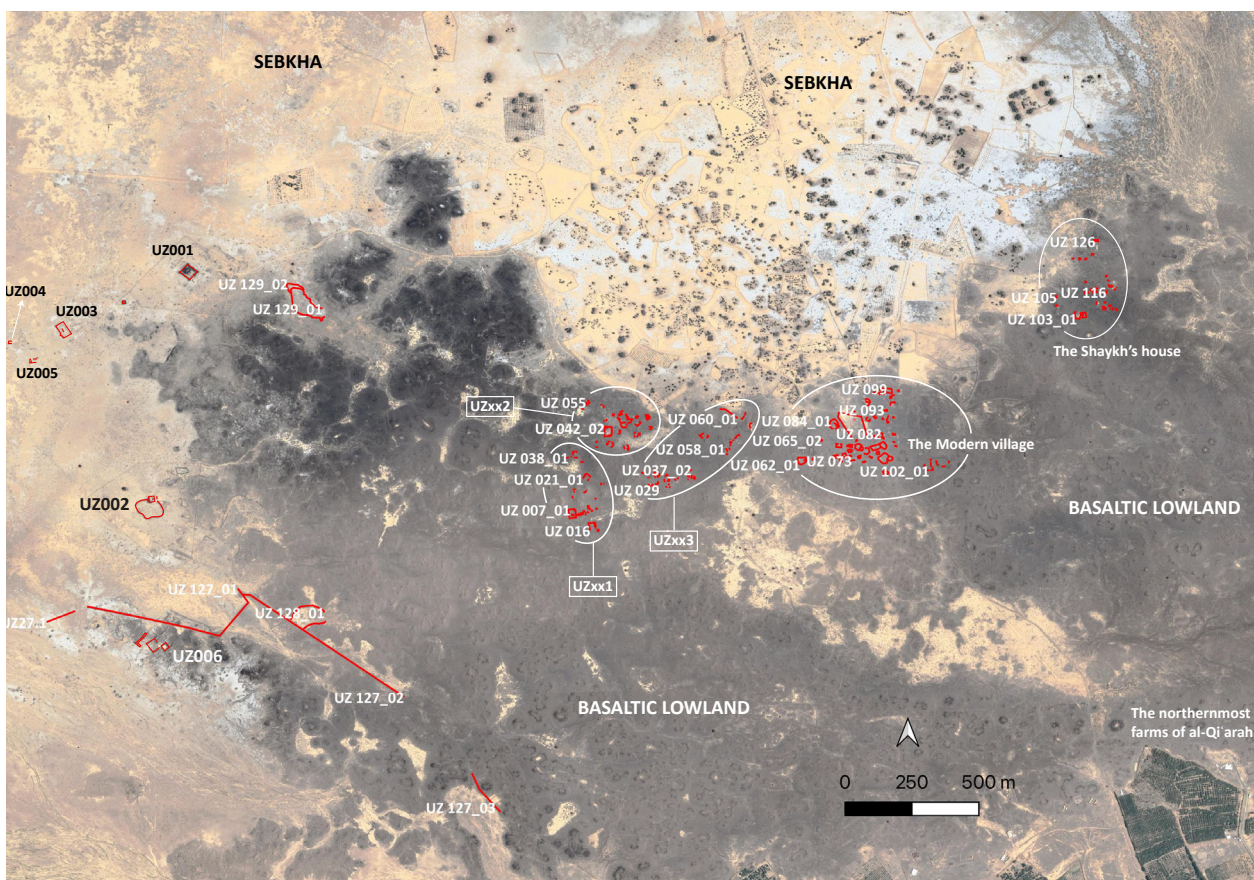
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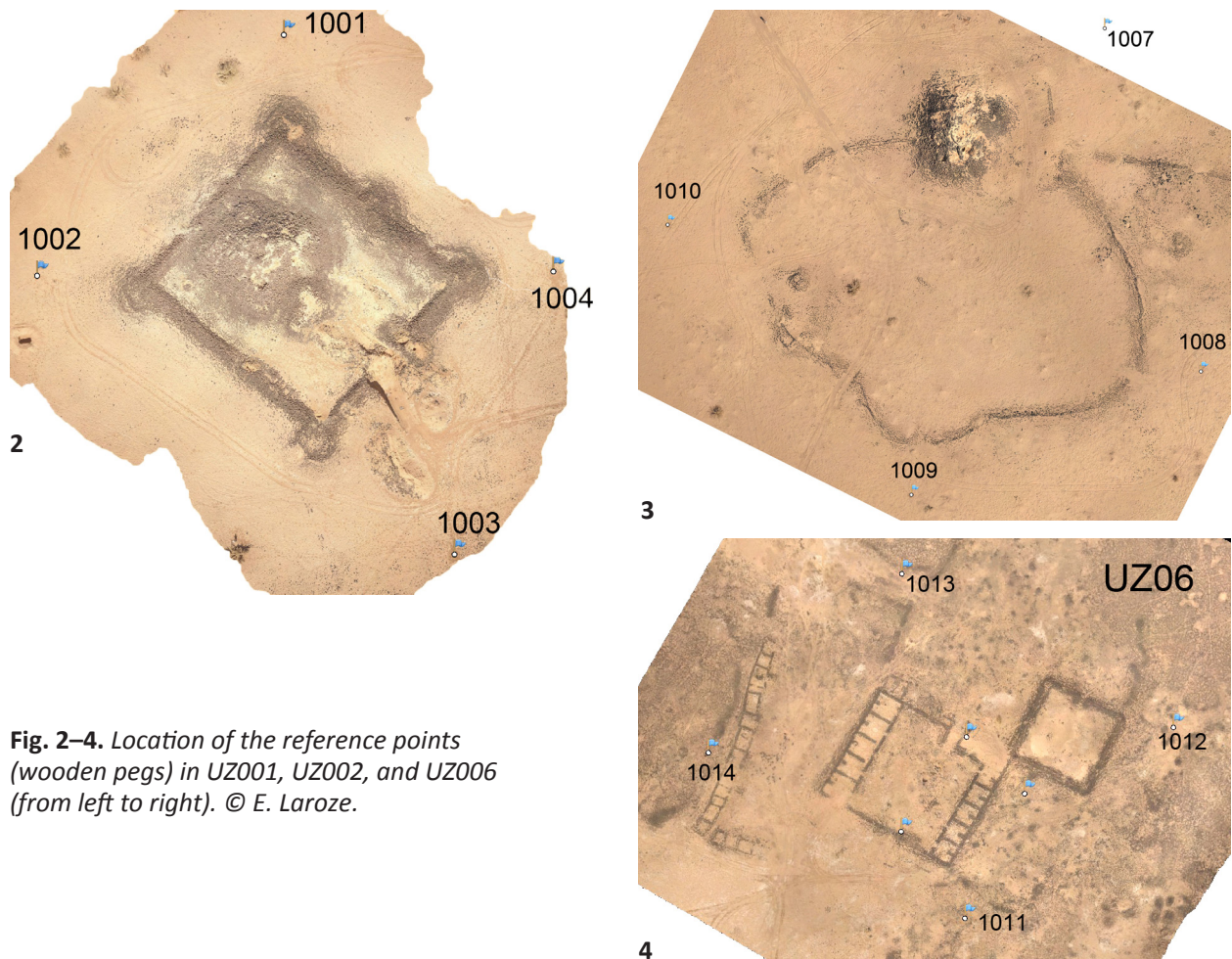
# Thoughts on the architectural remains of Umm Zarb

Emmanuel Laroze (CNRS, UMR 8167), Jean Humbert, and Laïla Nehmé (CNRS, UMR 8167)

During the work season at Umm Zarb, several areas and structures were examined. All are located at the north-west end of the ca 3.5 x 3.5 km low basaltic plateau which stretches north and north-west of the modern settlement and farms of al-Qi'arah, down to the sebkha. From east to west, five areas were surveyed and named as follows: the Shaykh's house, the Modern village, Uzxx3, Uzxx2, and Uzxx1 (= the Ancient settlement) (**fig. 1**). Within these areas, the structures were numbered using the prefix UZ followed by a sequence number starting from 007. Indeed, numbers UZ001 to UZ006 had already been attributed in 2019 and 2022 to a few structures, all



**Fig. 1.** Extension of the site of Umm Zarb.



**Fig. 2–4.** Location of the reference points (wooden pegs) in UZ001, UZ002, and UZ006 (from left to right). © E. Laroze.

located outside the areas mentioned above. The areas and structures were documented with aerial photographs taken with a Mavic Pro Platinum drone. Orthophotographs were made for the Ancient settlement (= Uzxx1–UZxx3), the Shaykh’s house, the Modern village, UZ001, UZ002, and UZ006. Additionally, three structures, UZ001, UZ002, and UZ006 were scaled with a local topographic survey. Wooden pegs were set in the ground to be used as reference points (fig. 2–4). Their approximate elevation was measured with a portable GPS device (see table 1).

Number	X	Y	Z	Structure no.
1001	38.4326	25.634522	404.48547	UZ001
1001bis	38.4326	25.634521	404.84006	UZ001
1002	38.4321	25.634098	404.6441	UZ001
1004	38.4332	25.634095	404.14026	UZ001
1007	38.4316	25.625929	407.26602	UZ002
1008	38.4319	25.625085	407.97516	UZ002
1009	38.4311	25.62477	408.12445	UZ002
1010	38.4305	25.625401	408.43237	UZ002
1011	38.4314	25.61983	418.87341	UZ006
1012	38.4321	25.620064	418.9574	UZ006
1013	38.4316	25.620672	419.58255	UZ006
1014	38.4309	25.620447	420.59958	UZ006

**Table 1.** Coordinates of the reference points (in decimal degrees) measured with a portable GPS at the top of the pegs.



**Fig. 5.** Aerial view of the Modern village. © E. Laroze.

## The Modern village

Most houses in the village (**fig. 5**) were built in the early 20th century. The occasional reuse of rail elements as door lintels shows that some of them at least were built after the Ḥijāz railway was abandoned, i.e. after 1924. This does not mean, however, that they were all built after 1924, some may be earlier. The houses are interesting because they provide insights into the local traditional building techniques and thus give hints about how the available material may be used. The latter includes mud-bricks and basalt blocks bonded with earth mortar (**fig. 6–7**). Roofs are made of



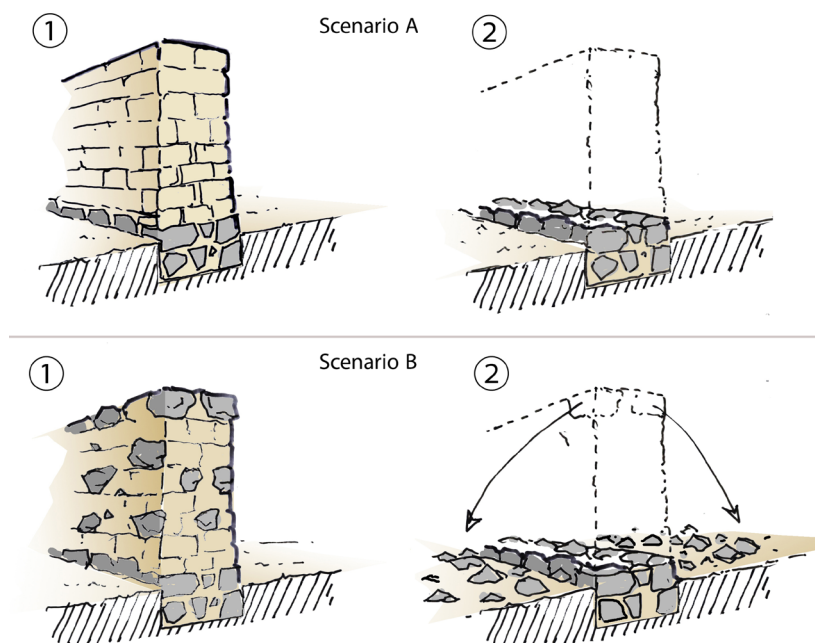
**Fig. 6.** Two examples of modern mud-brick houses. A varying proportion of basalt rubble may be included in the masonry. The mud-brick walls are laid on a stone foundation. © E. Laroze.



**Fig. 7.** Two examples of modern houses. The base of the walls, made of basalt stones, is more or less high. Houses entirely built of stone are rare. © E. Laroze.



**Fig. 8.** Examples of roofs using beams made of palm tree (left) and acacia branches (right). © E. Laroze.



**Fig. 9.** Exposure to natural conditions (sun, rain, wind, etc.) leads to the gradual erosion of the earthen parts of composite walls. Two scenarios were observed according to whether the masonry includes rubble stone or not. If it does not (scenario A) the brickwork crumbles away, leaving only the stone base. If it does (scenario B), the brickwork vanishes, the stone base remains in situ, and the rubble employed in the masonry crumbles along the wall. © E. Laroze.



**Fig. 10.** The remains of UZ006 illustrate the two scenarios described under fig. 9. Inner wall 1 was made exclusively of mud-bricks on a stone base ; outer wall 2 was made of a mixture of mud-bricks and rubble stone, on a stone base. © E. Laroze.

local wood: palm tree trunks, branches of acacia, and tamarisk (**fig. 8**).<sup>1</sup> Since most of the houses are relatively ruined, they are evidence for the destruction process. The roof, which is the most fragile element, collapses first. The top of the walls, generally made of unmodelled earth mortar, decays rapidly because it is not protected anymore. The walls themselves are then gradually damaged by rainwater run-off and may even disappear. As for the walls or the parts of the walls built with basalt blocks, the earth mortar that binds them together washes away progressively and the blocks finally fall (**fig. 9–10**). All the buildings observed at Umm Zarb seem to follow this destruction process.

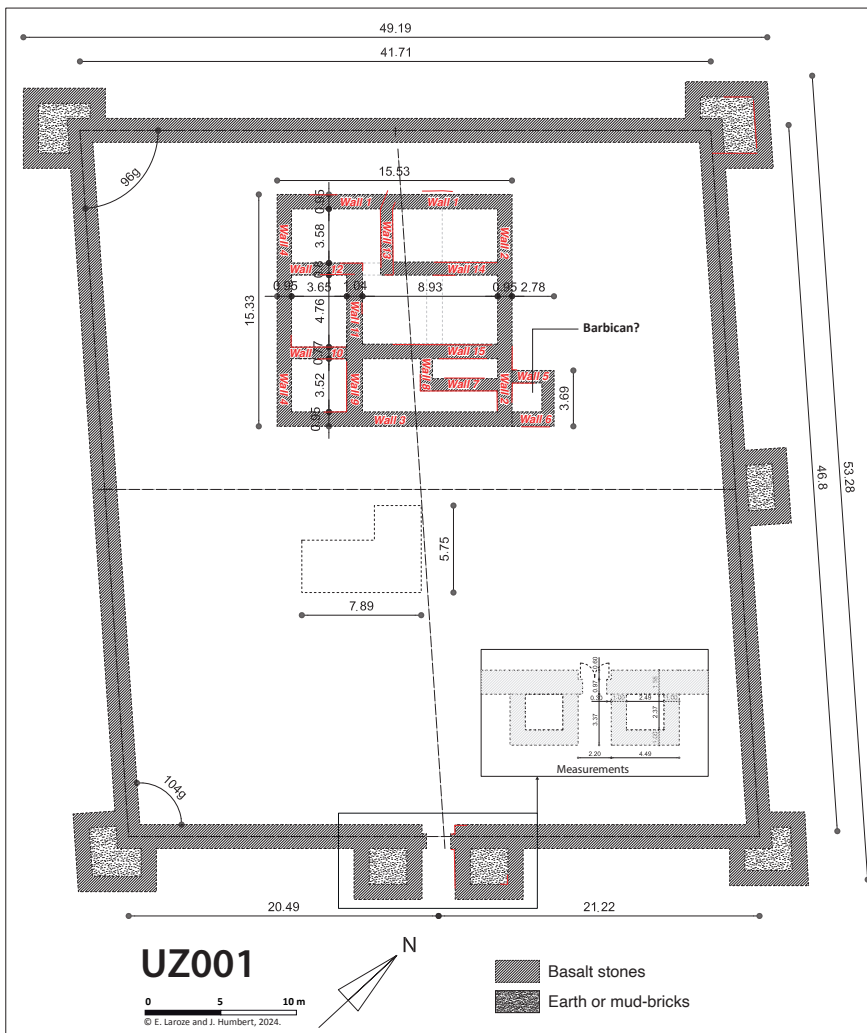
### UZ001, fort and enclosure

The fort (**fig. 11**) consists of an enclosure and a keep tower within it. The enclosure forms a rectangle, 53 meters north-south and 49 meters east-west. The fort is at  $\pm 45^\circ$  from the north, and the four angles, with the towers, head towards the cardinal points. It is built exclusively of basalt stones and earth. Opposite walls are parallel to each other but not at right angles to adjacent walls (**fig. 12–13**): the angle is either 96 gr or 104 gr. The walls of the tower (**fig. 14**), on



**Fig. 11.** Aerial view of the fort UZ001, from the southeast. © E. Laroze.

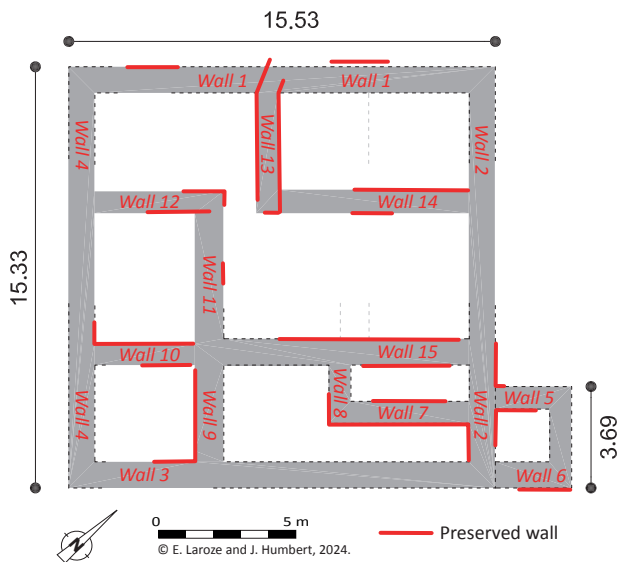
1. Measurements taken in several houses show that the length of the beams varies from 2.90 to 4.10 m.



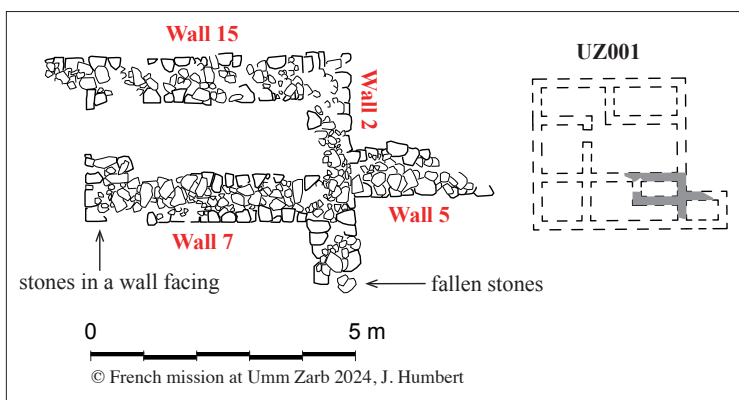
**Fig. 12.** Proposed restitution of fort UZ001, with dimensions.  
© E. Laroze and J. Humbert.



**Fig. 13.** Orthophotograph and proposed restitution of fort UZ001.  
© E. Laroze and J. Humbert.



**Fig. 14.** The sections of walls observed in situ in the tower of UZ001. © E. Laroze and J. Humbert.

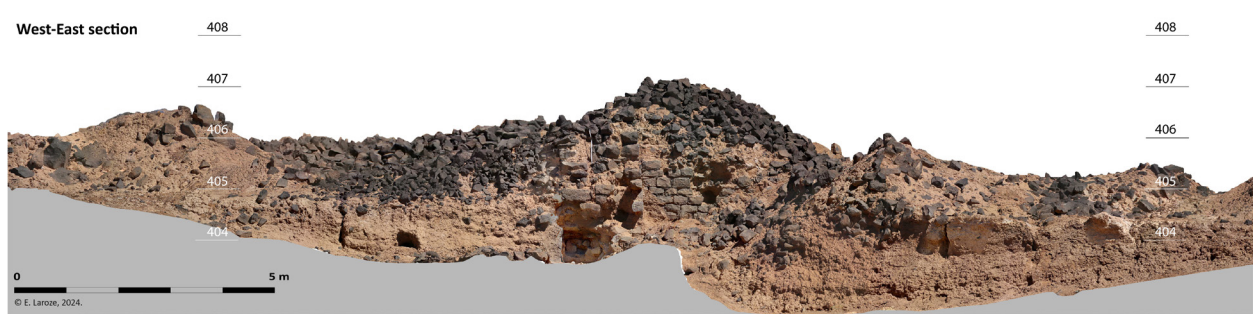


**Fig. 15.** Stone by stone drawing of some walls of UZ001. © J. Humbert.



**Fig. 16.** East-west section with a hypothetical reconstruction of the precinct's wall. © E. Laroze.

the other hand, are at right angles to each other and draw a square each side of which measures approximately 15.40 m. Sections of stone walls have been identified in various places but without excavations, it is difficult to determine their exact layout. Nevertheless, it is clear that these stone walls formed compartments filled with earth or mud-bricks, which suggests that the structure was particularly robust. The massiveness of the base thus indicates that the structure was intended to be as high as possible and was used as an observation tower. It may have reached up to 12 m high (rough estimate). The layout shows a caisson or room leaning against the southern third of the north-eastern side of the structure. If one puts the plan of UZ001 on top of that of 'En Rahel (see p. 13–14), one can see that the gate of the latter falls in the left wall of the room leaning against



**Fig. 17.** West-east section likely showing the gate frame of the fort. © E. Laroze.



**Fig. 18.** South face of the preserved northern tower showing, from right to left, the tower, the gate, and the curtain wall. © J. Humbert.



**Fig. 19.** Corner of a wall with visible tool marks. © E. Laroze.

the side of the former. It is thus possible that this external room was a barbican which protected the gate giving access to the keep tower. It is also probably not a coincidence that the barbican is adjacent to a room divided by walls 7 and 8 which may have been part of a staircase leading to the upper levels of the tower (see fig. 15).

The average altitude of the surrounding land is about 404.10 m. In the east-west section (**fig. 16**), as well as in the west-east one (**fig. 17**), the enclosure wall does not seem to have foundations below 403.90 m, which is only about 20 cm below the surrounding ground level. This could not be verified elsewhere, but if confirmed, it suggests that the wall foundations are quite shallow.

The fort's entrance is located in the middle of the south-eastern enclosure wall. It was probably flanked by two symmetrical towers measuring 4.95 x 4.50 m. The southern one was destroyed by a bulldozer. The south face of the preserved northern tower features, from east to west (**fig. 18**,



**Fig. 20** Example of green stone. © J. Humbert.



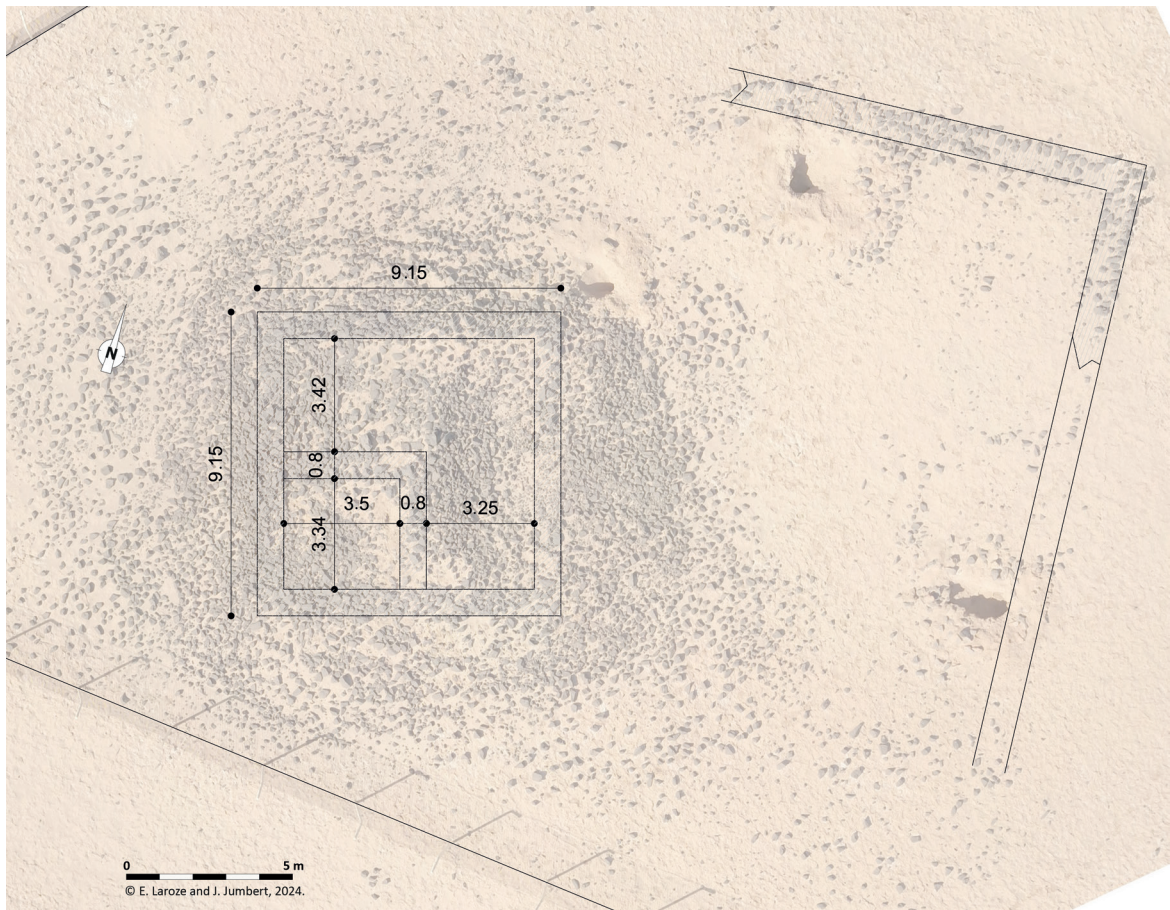
**Fig. 21.** Green stone used in window lintels. © J. Humbert.

see also fig. 12), a 3.37 m stone facing, a 30 cm rise, a 0.97 metre-long projection followed by the the curtain wall, 0.60 wide.

Basalt is the primary stone employed in the construction. It varies from porous (with cavities) to dense and smooth. The stone blocks are relatively small, their average dimensions being 25 x 25 x 20 cm and their volume 0.0125 cubic meter. Very few blocks are larger, while the largest block observed measures 62 x 34 x 20 cm and weighs just over 126 kg. The reason behind this may be the weight—most weigh no more than 35 kg and could be carried by a single person—but it is also possible that the small size of the blocks was due to the physical structure of the local basalt, which breaks down naturally into smaller and smaller blocks, stones and pebbles. Tools were used only occasionally and tool marks are visible on a small number of blocks (**fig. 19**).

Apart from basalt, a green stone containing sometimes pink granite inclusions seems to have served as material for thresholds, lintels, or door jambs, i.e. for long elements included in the masonry.<sup>2</sup> It was probably extracted from the mountain ridges on either side of Wādī al-Ḥamd, and the same use of this green stone was observed in the Modern village (**fig. 20–21**). The walls are double faced. Their outer and inner faces were made of earth pointed blocks while the inner

2. It is possible that the builders had recourse to this stone because they could not make thresholds and lintels with the local basalt.



**Fig. 22.** The square structure UZ001.1, southwest of the tower. © E. Laroze.

part of the walls was made of usually smaller stones mixed with earth. The condition of the ruin suggests that rainwater has eroded the earth. Clearly, the caissons of the keep tower drained slowly, which led to the collapse of the stone walls. This kind of masonry was particularly subject to weather damage. It is well known that the preservation of an adobe building depends on how effectively a structure sheds water. In particular, the roof's waterproofing, consisting of compacted earth, requires regular maintenance.

More or less half-way between the keep tower and the fort's entrance, there is an L-shaped earth platform, *ca* 1 m above the level of the surrounding courtyard. The connection of this platform to the fort is unknown.

*Ca* 230 m south-west of the fort, there is a small square building, UZ001.1, each side of which measures 9.15 m (**fig. 22**). Finally, 250 m further, in the same direction, is building UZ003, a mosque.

## UZ002, fort and enclosure

At first glance, UZ002 (**fig. 23**) appears as a large ovoid enclosure (approximately 5,900 m<sup>2</sup>) containing a building with a square base each side of which measures 14.07 m. Like UZ001, it is built with a combination of rubble and earth. The interior of the structure seems to be divided into three east-west strips of varying widths (3.51, 3.98, and 2.89 m) (**fig. 24–25**). These strips are in turn divided by perpendicular walls into compartments of varying size. Inside the structure,



Fig. 23. Top view of UZ002. © E. Laroze.

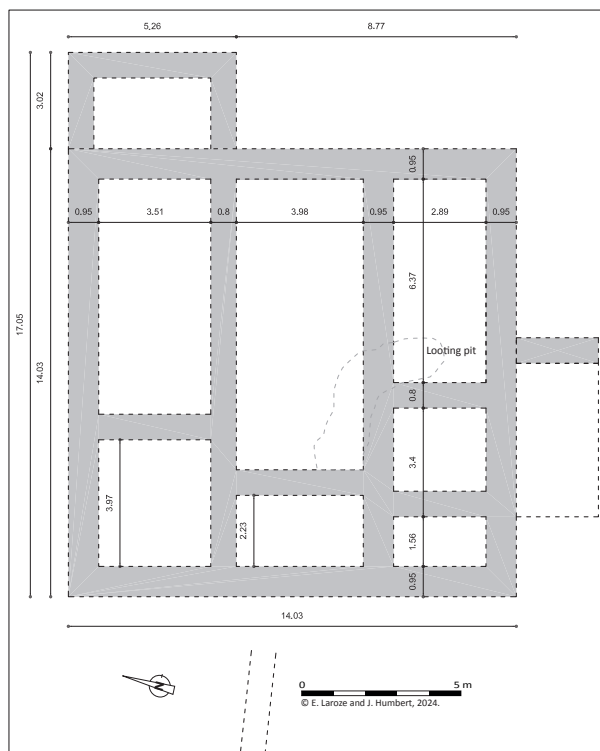


Fig. 24. Plan of the tower of UZ002, with dimensions. © E. Laroze.

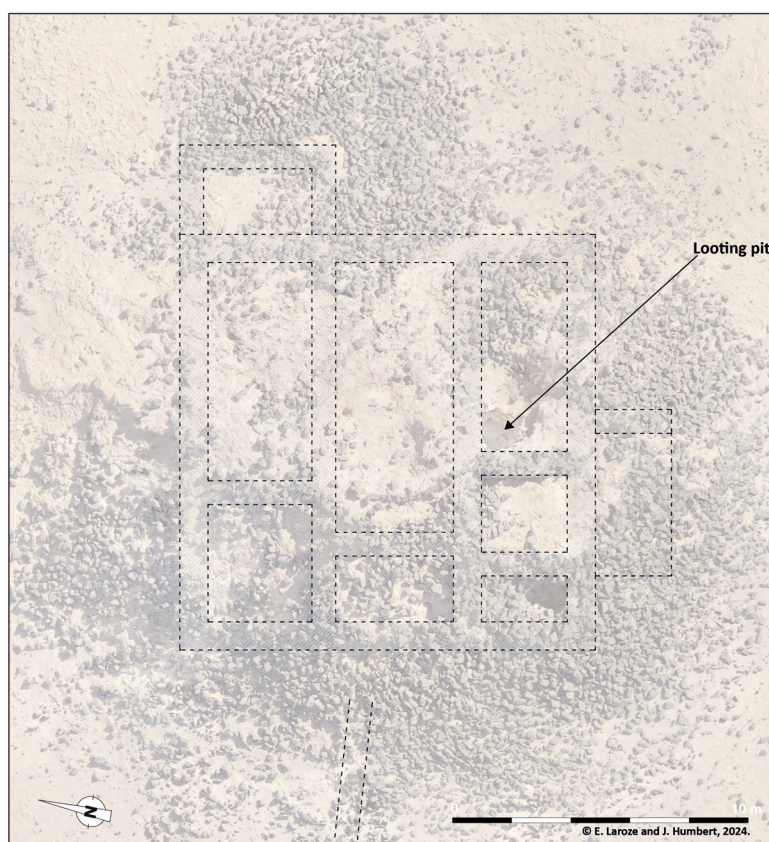
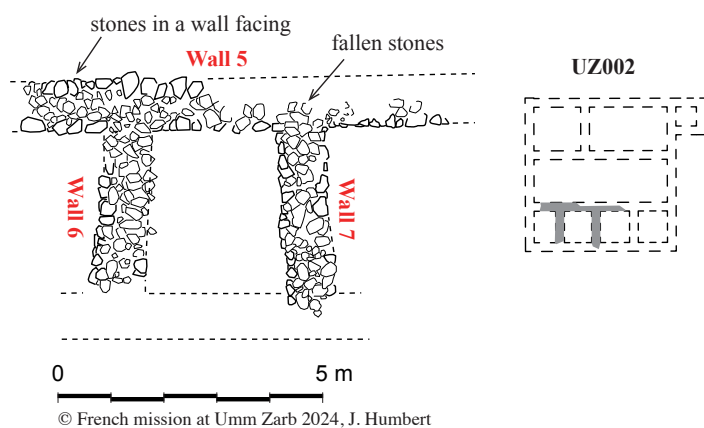


Fig. 25. Orthophotograph and proposed restitution of the tower of UZ002. © E. Laroze.



**Fig. 26.** Looting pit showing the filling of the compartments with mud-bricks and stones. © J. Humbert.



**Fig. 27.** Stone by stone drawing of some walls of UZ002. © J. Humbert.

3 m below the summit, looters have dug a pit revealing that these compartments were filled with mud-bricks (38 x 22 x 11 cm) (fig. 26). The layout shows a caisson or room leaning against the northern third of the eastern side of the structure. Finally, on the southern side, a wall at right angles to the square may be part of a room built there.

Considering its resemblance with UZ001, this massive structure was also probably the base of an observation tower. Since the same building techniques were used (fig. 27), it is probable that they were built during the same period, or even at the same time, during one single architectural programme.

A mud-brick was collected in the pit mentioned above in order to retrieve macro-vegetal remains for a  $^{14}\text{C}$  date (see p. 10–11).

### UZ006, a caravanserai?

The main structure on the west side of the basaltic lowland is a rectangular building, 41.69 x 33.52 m, which lies *ca* 1500 m almost due south from UZ001 and 550 m south of UZ002 (see fig. 1 and fig. 28). It covers an area of 1,400 m<sup>2</sup>. Its walls are perfectly perpendicular, which shows that it was built meticulously (fig. 29). It is composed of a spacious courtyard flanked on two opposing sides by a sequence of five rooms. The inner walls, those separating the rooms, probably had a





**Fig. 30.** Long cut block located at the north-east corner of UZ006.  
© L. Nehmé.

are visible outside the line of the inner walls, which shows that no stone rubble was used to build them.

The main access to the building was on the north-east side and formed a 3.36 m wide passageway. The rooms on the north-west side are larger than those on the south-east side, their average dimensions being approximately 5.50 x 6.73 m and 5.00 x 5.00 m respectively. Each room features a short stone base, about 1.50 m long, in the centre of and at right angles to the exterior wall, facing the room's entrance. Its exact function remains unknown but it may have been the foundation for a low partition wall or the support for a beam.

The three central rooms of the north-west wing are interconnected while none of the rooms of the south-eastern one are. The stone blocks which delineate the perimeter of the building are intact and served as the foundation for walls which were probably constructed from earth. Roofs, which do not exceed a span of 5.50 m, were probably made of palm tree trunks. The walls are approximately 0.80 m thick. Finally, one can see that one corner at least, the northern one, was reinforced with long cut blocks (**fig. 30**).

North-east of UZ006, there is a large square building, 23.93 x 23.69 m, numbered UZ006.1 (see fig. 28–29). Its north-east side shows a gap in the centre which probably served as an entrance. The floor of this structure is completely empty, relatively flat, and is roughly 40 cm above the surrounding ground. The abundance of stones along the line of the walls suggests either that they were exceptionally robust or that they were quite high. The function of UZ006.1 is unknown (animal pen?).

Finally, north-west of UZ006 lies a long structure, UZ006.2, oriented west-east, measuring approximately 58 m and consisting of a dozen cells (see fig. 28). Each cell features a door that opens to the south. The average width of the cells is 3.20 m while their lengths vary significantly, from 2 to 5.50 m. At the western end, three additional cells open to the north-east.

In the current state of research, the caravanserai is not dated by any artefact or <sup>14</sup>C date. The closest parallel to this structure is the so-called 'Khan 1' in 'Aynūnah, with which it shares a number of features:

- they have comparable dimensions, 33 x 40 m for UZ006 and 35 x 37 m for Khan 1;
- both are associated to a tower-like structure;
- they have rooms on two sides only and the rooms are bigger on one side;

- on the north side—the south side is incomplete—the ‘Aynūnah building has five adjacent rooms and so do both sides of UZ006;
- there is a short dividing wall perpendicular to the back wall in some (Khan 1) and all the rooms (UZ006). In ‘Aynūnah, these walls have been interpreted as buttresses separating the space into two aisles;
- around the two caravanserai are several additional structures among which a square empty building (animal pen?) with the same orientation as the main structure, and a series of rooms (Umm Zarb: *ca* 14 rooms in a row, with another series of four at right angles to them; ‘Aynūnah: seven rooms in a row and three at right angles to them).

The main difference lies in the position of the gate: on a room-free side at Umm Zarb and in the middle of a side with rooms at ‘Aynūnah.

Both Khan 1 at ‘Aynūnah and Umm Zarb 6 are typical of the buildings most often identified as caravanserai (or *mansiones*) many examples of which, dated to the interval between the Nabataean and the Islamic periods, are found throughout the Middle East.<sup>3</sup> Some specifically Nabataean ones were identified along the Petra-Gaza road.<sup>4</sup>

Another one, partly excavated at Şabrah, south of Petra, built in the late 1st/early 2nd century CE, was used as such until the second half of the 3rd century (Paridaens et al. 2022: 35–36 and L. Tholbecq, pers. comm.). It was then occupied by the military until it was destroyed in the middle of the 4th/early 5th century. These structures, sometimes associated with a fort (or *castellum*), are mostly found along ancient caravan routes. They provided security, shelter, food and water to the travellers and the pack animals. They were most often square, their external walls were blind and they were equipped, on one or more (up to the four) sides, with rows of rooms, while the central space was an open-air courtyard. Both Umm Zarb 6 and ‘Aynūnah Khan 1 correspond exactly to this definition, as pointed out by M. Gawlikowski (2022), and so do the caravanserai on the Petra-Gaza road. The plan of the latter is however different from the Umm Zarb and ‘Aynūnah ones which, in turn, can best be compared to buildings that were recently either partly excavated or surveyed at al-Ḥurḍah near Khaybar (Chung-To 2023: 78–80, in particular structure Kh00741), or identified between Umm Zarb and Khaybar.<sup>5</sup>

The ‘Aynūnah caravanserai is dated by the excavators to the late Roman period (4th century) but is said to have been used down to the 7th century (Gawlikowski et al. 2021: 14, 21).<sup>6</sup> The caravanserai of al-Ḥurḍah at Khaybar is early Abbasid.<sup>7</sup>

Considering the above, no date can be suggested for UZ006 and only excavation will determine whether it is pre-Islamic, Umayyad, or Abbasid. As for the two forts, which are now proven to be pre-Islamic and possibly Nabataean, the quantity of fallen basalt stones should not discourage

3. The most comprehensive analysis remains that of Dentzer 1994.

4. For which see most recently Bar-Oz et al. 2022. The best preserved Nabataean caravanserai on the road are Orhan-Mor (Moyat ‘Awad), Sha‘ar-Ramon, and Horvat Ma‘agurah. Their plans are however different from those of Umm Zarb and ‘Aynūnah.

5. I thank Guillaume Chung-To for pointing out to me the existence of a caravanserai which shows strong similarities with that of Umm Zarb, more or less half-way between Umm Zarb and Khaybar.

6. Two dates and interpretations are suggested in Gawlikowski et al. 2021: caravanserai (p. 14–15) or residential compound (p. 83).

7. Chung-To 2023: 78 and 81, as well as pers. comm.

the team in charge of its exploration to undertake soundings in selected places in order to clarify the plan of the towers and precise their chronology.

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# The occupation of the basaltic lowland

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with the contribution of Paul Mabilie and Katia Schörle

(CNRS, UMR 7299) for the fieldwork

The expression “basaltic lowland” refers to the large lava plateau that extends on the edge of the junction between wadis al-Jizl and al-Ḥamd (**fig. 1**). It is what best corresponds to the definition of the Arabic word *zurbān* (see p. 10). It is a low plateau, as opposed to high plateaus such as Ḥarrat al-‘Uwayriḍ, west of al-‘Ulā. Structures UZ001 to UZ005, including the two forts, are not built on the basaltic lowland but in the neighbouring sebkha. As for the caravanserai, UZ006, it is built on its western edge. Monuments UZ001 to UZ006.2 are of course built with basalt stones, most often used in association with mud-bricks for their superstructures and/or for the filling of some compartments, but they are not built on the basaltic substrate.

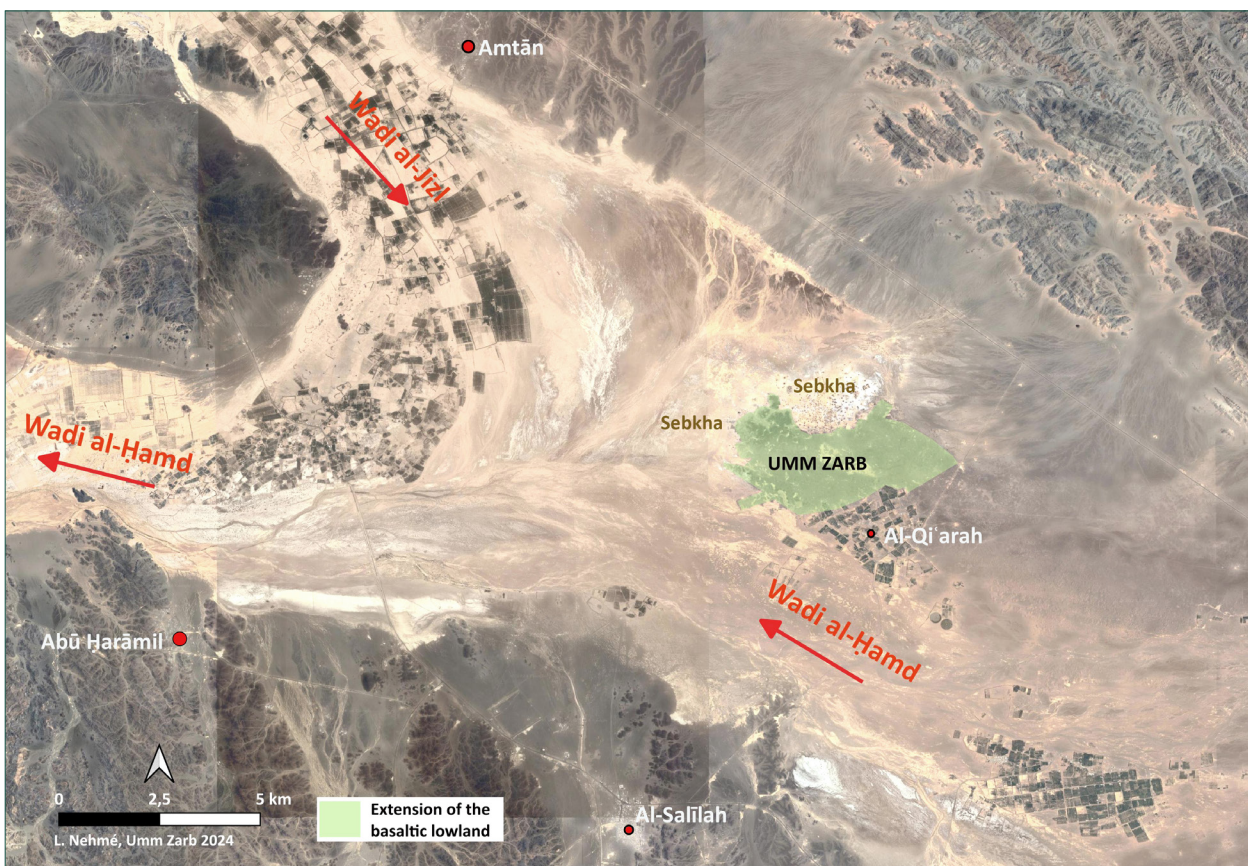


Fig. 1. The Basaltic lowland in its context.

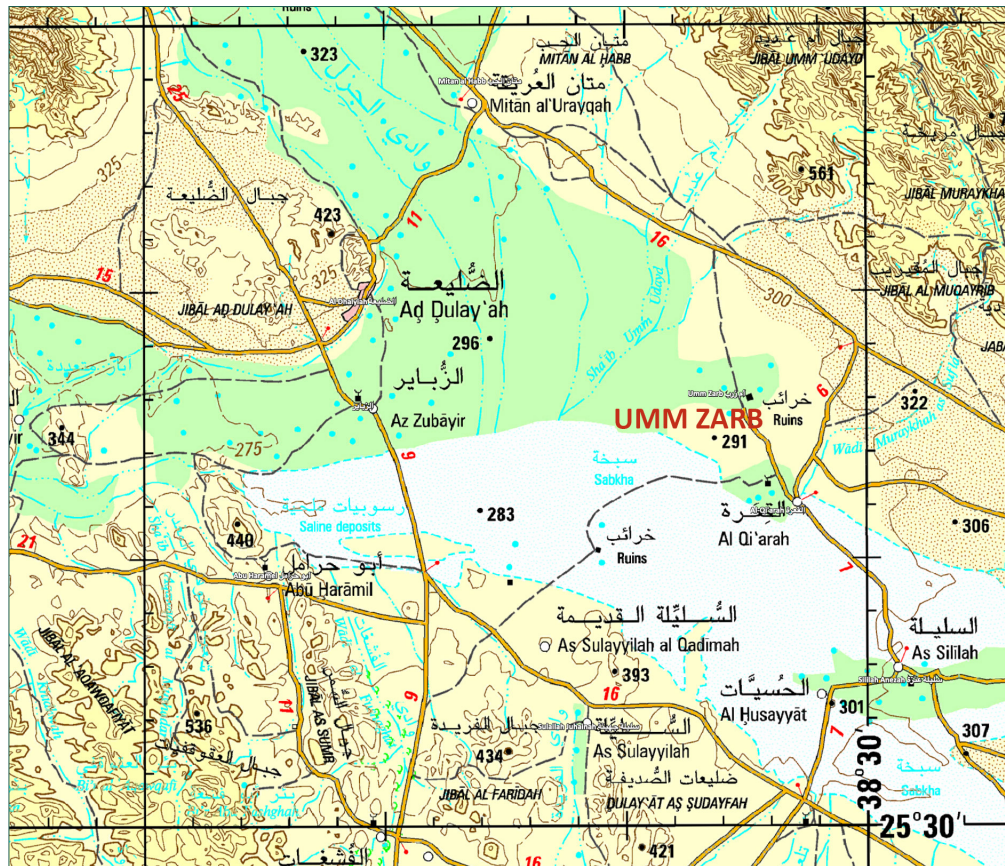


Fig. 2. Scco (Saudi Electric Company) map in the area of Umm Zarb.

Three groups of structures were identified on the basaltic lowland, listed from west to east (see fig. 2 on page 8):

- the Ancient settlement;
- the Modern village;
- the Shaykh's house.

Chronologically, the Ancient settlement comes first (probably Abbasid, see the report by Mustafa Ahmad in this volume), then the Shaykh's house, founded in the 1920s, then the Modern village. We unfortunately are not able to give a date for the foundation of the Modern village but the occasional reuse of rail elements as door lintels shows that the houses in which they are found were built after 1924, after the Hijāz railway was abandoned. The present shaykh of Umm Zarb, Nāṣir bin Qāsim al-Ṭuwaylī, lived in this village until 1964. It was gradually abandoned as contemporary settlements with modern comfort were built around. The shaykh named ten of them: Umm Zarb, al-'Ayn, al-Araq, Ḥuraymil (Hadiyyah), Amtān, al-Salīlah, al-Qa'rah, Birmah, al-'Ayn al-Jadīdah, al-Fayḍah (fig. 2).<sup>1</sup>

According to the shaykh, when the "Modern village" was founded, the water table was very shallow and water could be found 50 cm below the surface. He told us the story of a young man who started digging a well in his palm grove in the morning and had water at the level of his waist on the afternoon of the same day. Now, most of the palm groves are abandoned and only a few palm trees survive without any man made water supply (fig. 3).

1. Or al-Ġayḍah?



**Fig. 3.** *Half abandoned palm-trees growing in the sebkha.* © J. Humbert.

In the present chapter, only a few general considerations will be given on the three settlements. Orthorectified drone photographs were made for each but they unfortunately do not cover the whole area and some of the structures that were numbered are visible only on Google satellite images, the quality of which is not satisfactory. Moreover, the team in charge of the ground survey was not able to describe and photograph all the structures, which is normal in a few days, and most of the ground photographs were unfortunately lost by one of the team members. For these reasons, the description of the structures will be undertaken in a later report. **Appendix 1** to the present chapter only gives a list of the structures identified on satellite images or surveyed on the ground. Finally, the pottery collected at the site was examined by Mustafa Ahmad, who was able to compare it with that of the neighbouring site of Qurḥ (al-Mābiyāt). Hopefully, it will also be possible to compare it with the pottery from Khaybar, when the latter is made available.

The typology of the structures is subject to change and the following list is no more than a provisional working tool. Typical examples for each category are given and illustrated.

– Walls:

- curved wall (**fig. 4**, UZ134);
- long or very long walls (**fig. 5**, UZ060);
- two parallel walls (**fig. 6**, UZ025).

– Enclosures:

- incomplete irregular enclosure<sup>2</sup> (**fig. 7**, UZ026);
- incomplete rectangular enclosure (**fig. 8**, UZ016);
- incomplete roughly circular enclosure (**fig. 9**, UZ031);
- incomplete roughly circular enclosure with rooms inside (**fig. 10**, UZ084, modern);
- two adjacent enclosures (**fig. 11**, UZ081, modern).

– Half-rectangle (or incomplete irregular enclosure?) (**fig. 12**, UZ049).

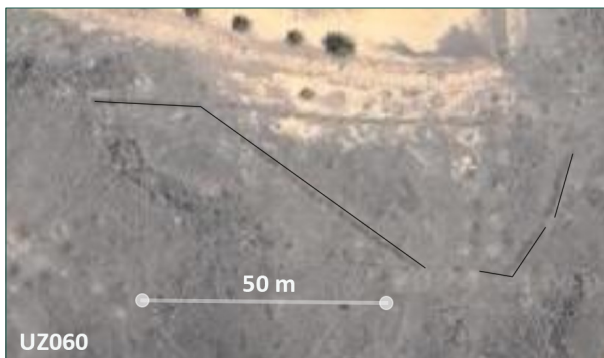
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2. In some cases, to be compared with the half-rectangles.

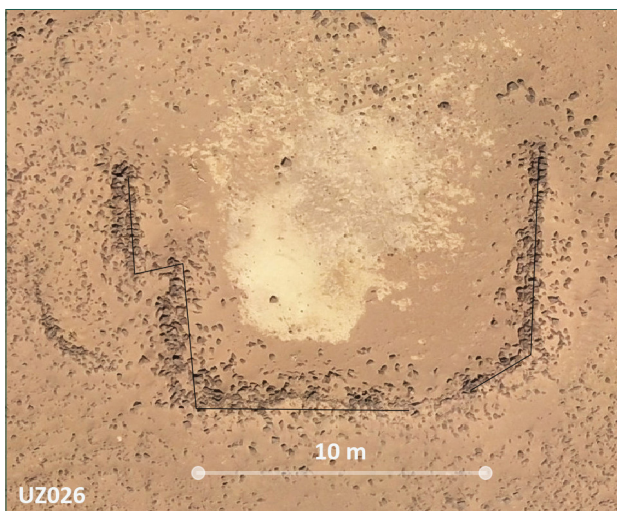
- Houses:
  - one-room house (**fig. 13**, UZ064, modern);
  - multi-room house (**fig. 14**, UZ065, modern);
  - multi-room house with courtyard (**fig. 15**, UZ067, modern).
- Large multi-room structure (**fig. 16**, UZ045, **fig. 17**, UZ007–UZ008).
- Mosque (**fig. 18**, UZ130).
- Other structures:
  - two-room rectangular structure (probably a two-room house) (**fig. 19**, UZ012);
  - multi-room structure (see **fig. 18** and **fig. 20**, UZ008);
  - ovoid stone circle (**fig. 21**, UZ139);
- Stone heaps in line (**fig. 22–23**, UZ027.1)
- Well (**fig. 24**, UZ082.1).



**Fig. 4.** Curved wall UZ134.



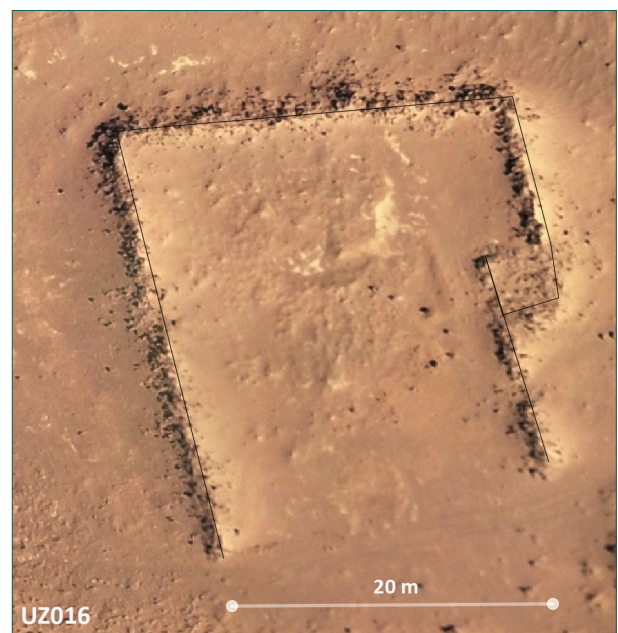
**Fig. 5.** Long wall UZ060.



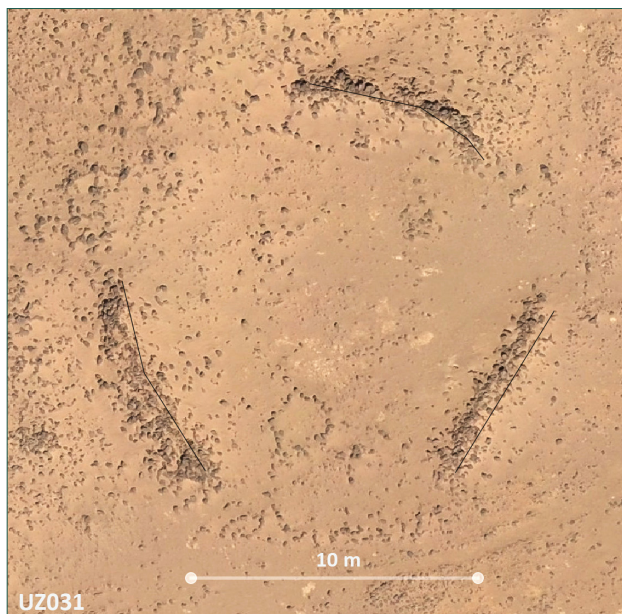
**Fig. 7.** Incomplete irregular enclosure UZ026.



**Fig. 6.** Parallel walls UZ025.



**Fig. 8.** Incomplete rectangular enclosure UZ016.



**Fig. 9.** *Incomplete roughly circular enclosure UZ031.*



**Fig. 10.** *Incomplete roughly circular enclosure with rooms inside UZ084.*



**Fig. 11.** *Two adjacent enclosures UZ081.*



**Fig. 12.** *Half-rectangle UZ049.*



**Fig. 13.** *One-room house UZ064.*

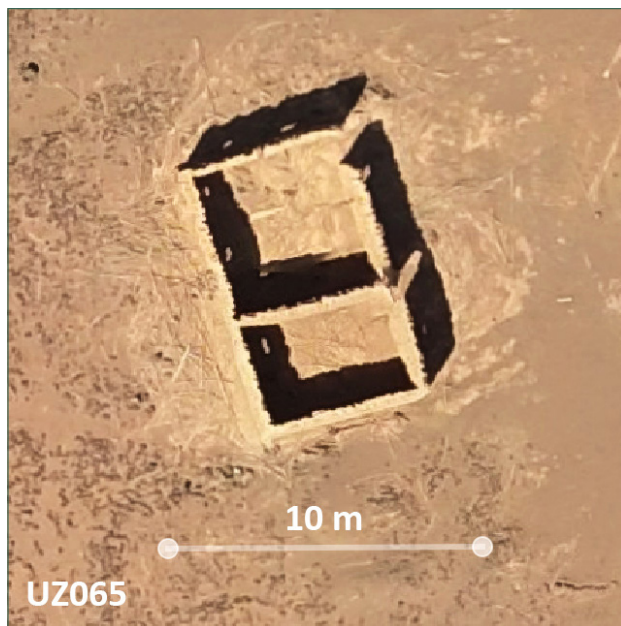


Fig. 14. Multi-room house UZ065.

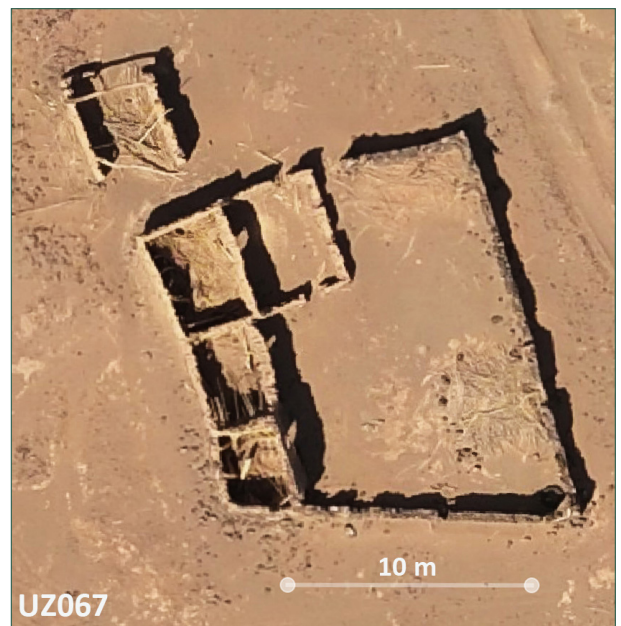


Fig. 15. Multi-room house with courtyard UZ067.

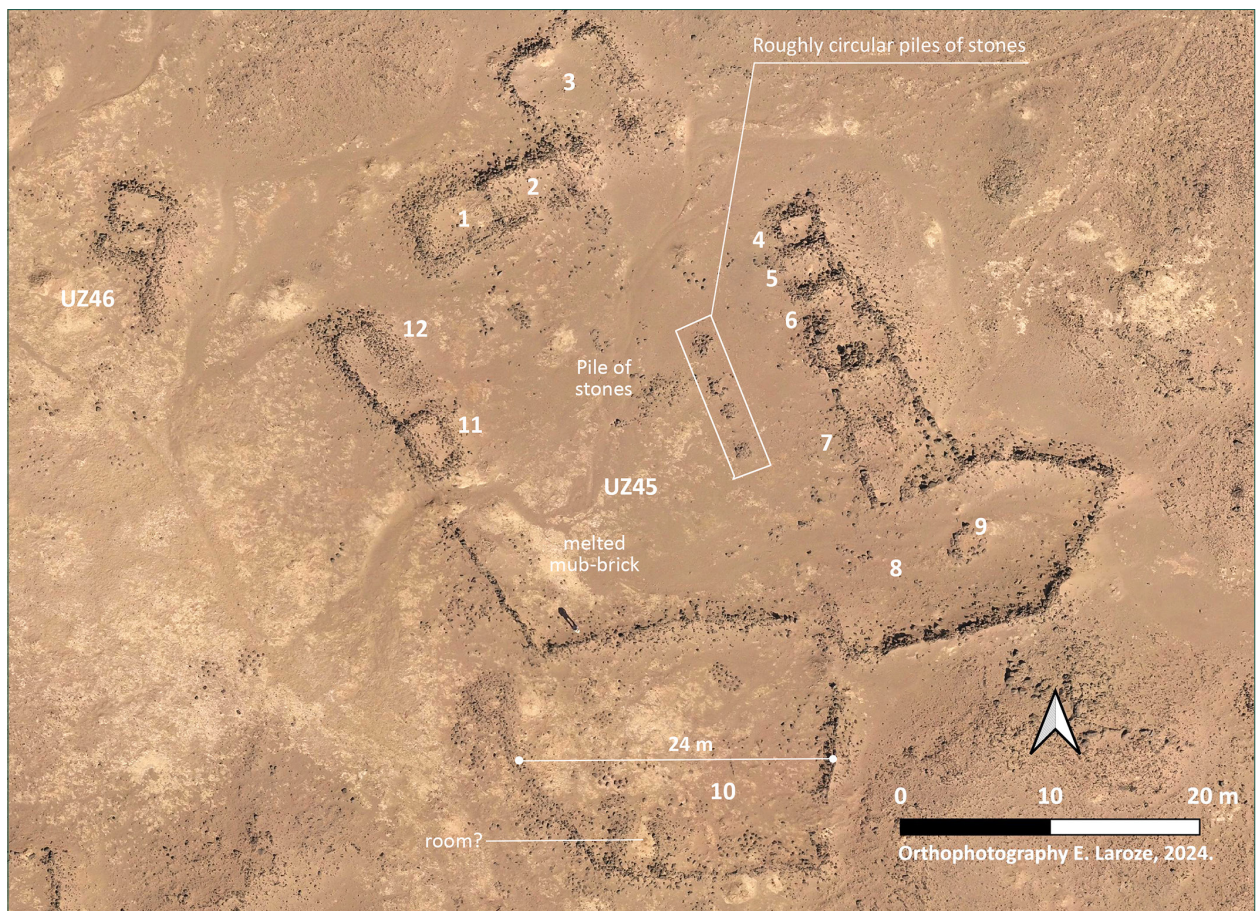


Fig. 16. Large multi-room structure UZ045.

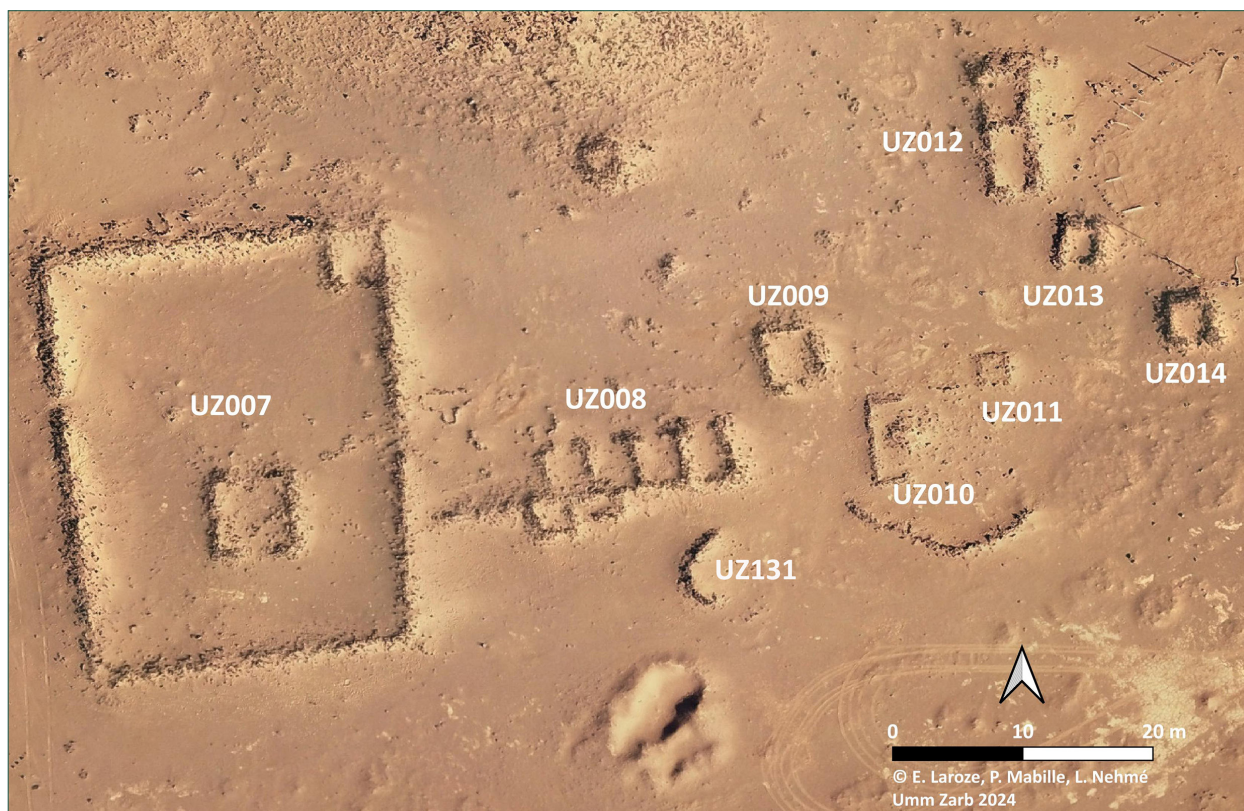


Fig. 17. Large multi-room structures UZ007 and UZ008, with neighbouring structures.

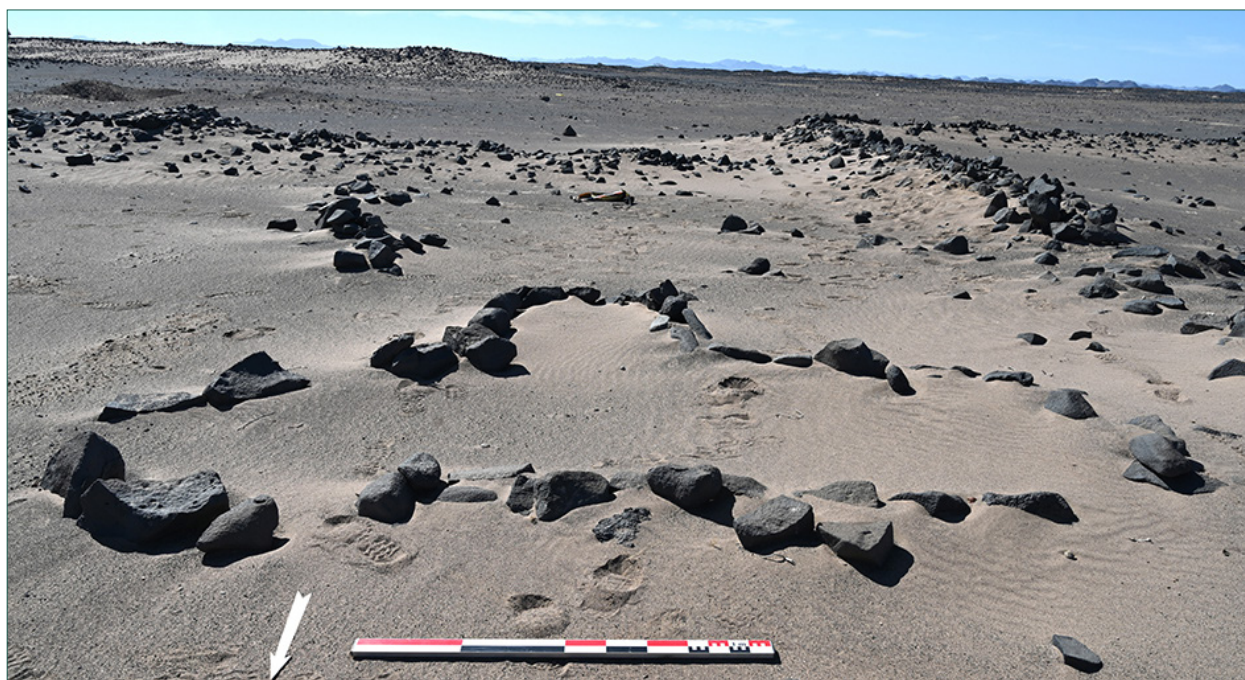


Fig. 18. Mosque UZ130.



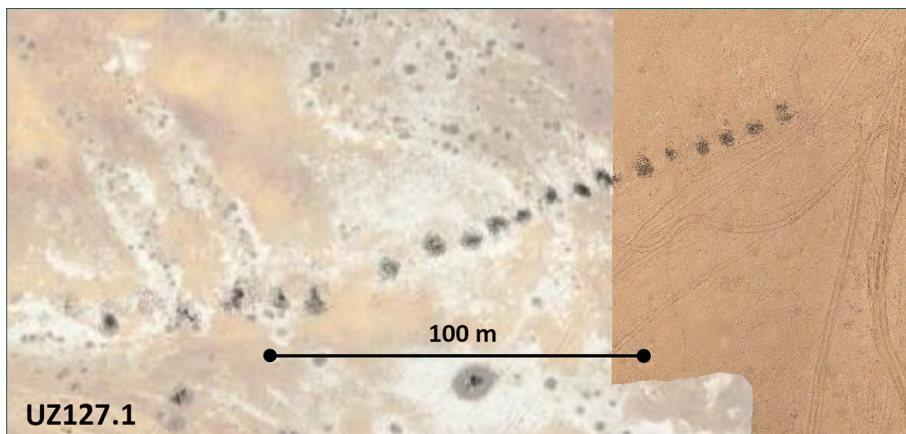
Fig. 19. Two-room rectangular structure UZ012.



Fig. 20. Multi-room structure UZ008.



Fig. 21. Ovoid stone circle UZ139.



**Fig. 22.** Stone heaps in line UZ127.1, aerial view.



**Fig. 23.** Stone heaps in line UZ127.1, ground view.

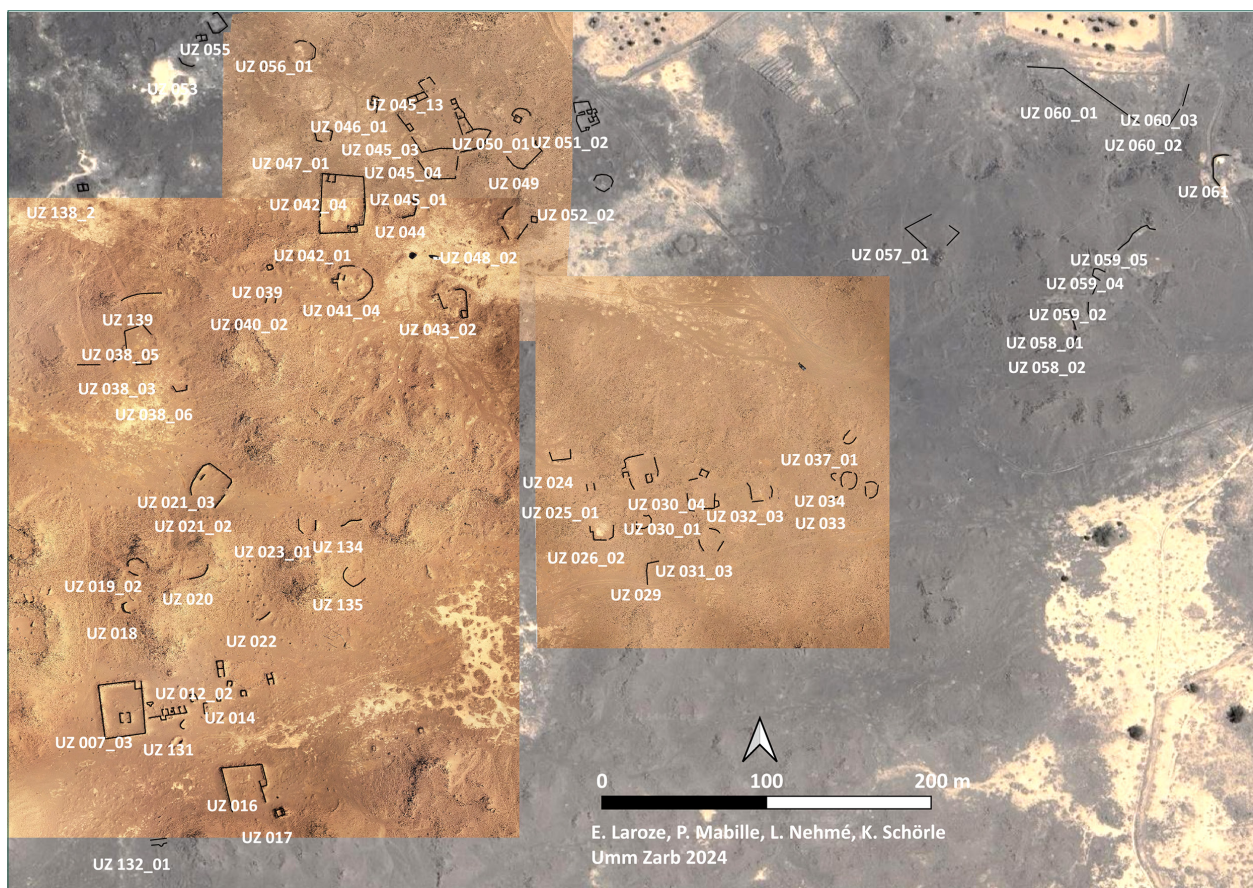


**Fig. 24.** Well UZ084.1.

## The Ancient settlement

The ancient settlement (**fig. 25**) occupies an area *ca* 500 m E–W and 550 N–S. About 60 structures were identified and listed, the vast majority of which were also surveyed on the ground. The structures of the Ancient settlement are more difficult to interpret than those of the Modern village. In the latter, one- or multi-room houses, with or without a courtyard, are easily identifiable (see fig. 13–15) whereas they are not in the Ancient settlement (see an example fig. 19). The most characteristic structure in the latter seems to be what we have called “large multi-room structure” eight or nine examples of which were identified. These may have been farms, the equivalent in the Modern village of the “multi-room houses with courtyard”. Many enclosures, the perimeter of which is sometimes (presently?) incomplete are scattered around the settlement and may have been animal pens.

Surprisingly, not a single well was identified in or around the settlement. It is possible that in the early Islamic and following periods, until the appearance of mechanisation, wells were dug in the



**Fig. 25.** *The Ancient settlement.*

sebkha, where the water table was certainly very shallow, rather than on the basaltic lowland where it would have been more difficult to dig them and where the water table was deeper. That is perhaps why a possibly 10th/11th century glazed sherd (**fig. 26**) was picked up in a well dug in the sebkha below the Shaykh’s house.

A couple of mosques (UZ130 and UZ132) were recorded in the Ancient settlement but their dating is far from certain and there was no pottery on the surface.



Fig. 26. 10th/11th century sherd from well UZ142.

A couple of soundings, made in structures such as UZ008, UZ012, and/or UZ045, might help refine the chronology of the settlement which, according to the pottery, is dated to the 10th/11th century CE.

All in all, the Ancient settlement was probably not very large and may have included a dozen houses at most. Larger, multi-room structures, were certainly used for purposes other than domestic though it is not possible for now to say which.

## The Shaykh's house

The “Shaykh’s house”, i.e. the house of Qāsim bin ‘Abdallāh bin Kuḥayl shaykh al-Ṭawāl’ah min qabīlat al-‘Enezī (see p. 9), occupies the northern end of the promontory overlooking the sebkha (see fig. 2 on p. 8 and **fig. 27**). About fifteen houses, with one or more rooms, were identified. Some of them have suffered severe weathering and progressive destruction over the last century, which makes it difficult to determine their function. As far as the distribution of the structures is concerned, it seems that most houses were built at a certain distance from the shaykh’s house itself.

## The Modern village

The Modern village (**fig. 28**) contained a minimum of 26 houses, 12 of which are multiple-room houses with a courtyard. The number of houses indicates a growth of the population while the average size of the houses, which are more “luxurious” than in the area of the shaykh’s house, with several rooms and a large courtyard, shows an economic development. Several large enclosures (UZ079, UZ081, and UZ084, the latter not closed on the southern side, were probably used for collective activities or as animal pens. Asking the elderly people in the area

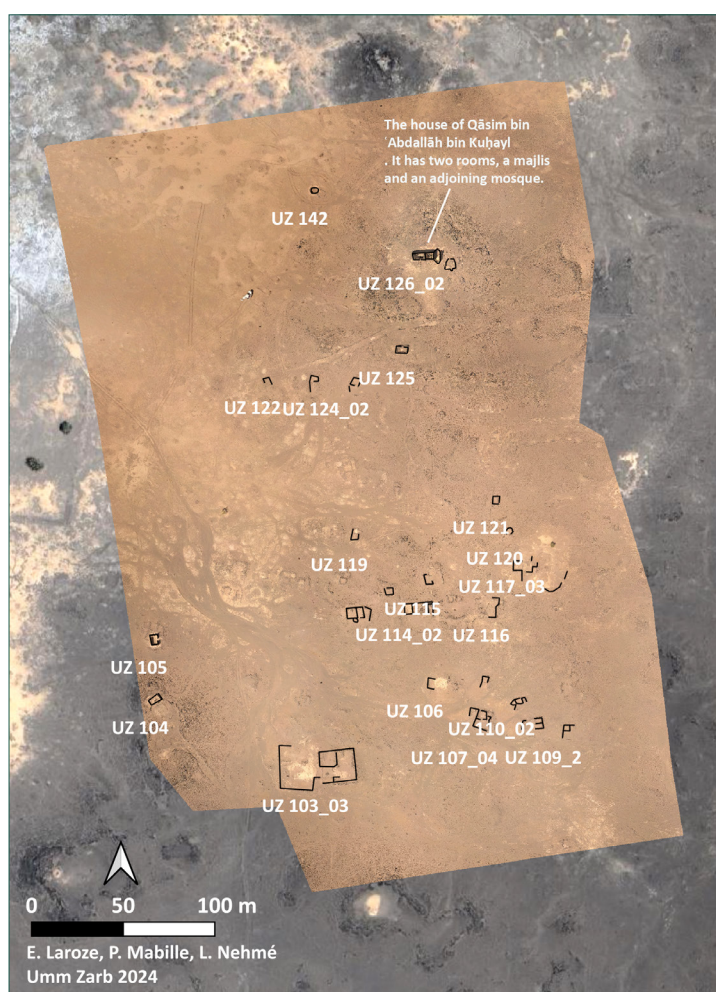
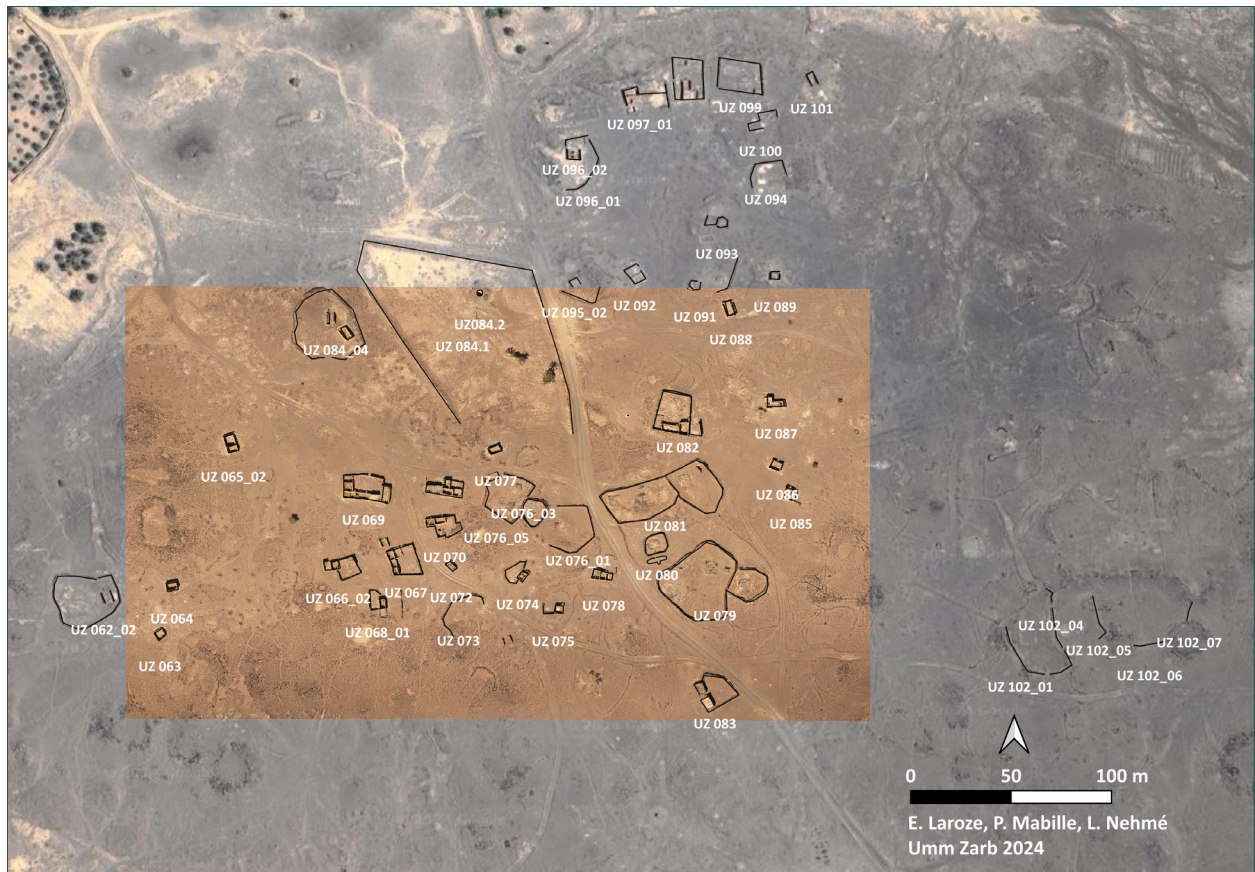


Fig. 27. The area of the Shaykh's house.



**Fig. 28.** *The Modern village.*

would probably help understand how the village was organised and learn about their social and economic life.

Several wells were identified in the modern village, some of them lined with concrete. They were dug with mechanical means, which explains why they could be dug in the immediate vicinity of the houses, despite the fact that the ground was higher—and therefore the water deeper—than in the sebkha.

## Conclusion

The three settlements on the basaltic lowland are interesting because they show that the human groups which succeeded one another moved from the west (Ancient settlement, starting from the 10th century?) before moving to the east (Shaykh’s house) in the early 20th century and finally to the centre (Modern village) later in that century and until the 1960s.

The occupation of the basaltic lowland was most probably motivated by the presence of a shallow water table, which gave the relatively small number of inhabitants the opportunity to grow at least palm-trees.

In this context, we may hypothesise that the occupation of the basaltic lowland was completely independent from that in the sebkha, in which were built, at a different—much earlier—period, two military / controlling / defensive structures, UZ001 and UZ002, and a caravanserai. These hypotheses should however be confirmed through a more precise dating of a sample of structures in the Ancient settlement.

# Appendix 1

## List of structures identified on satellite images or surveyed on the ground.

**Note:** the lines in smaller characters and in grey correspond to other coordinates for the same structure. For general views of the three main occupation areas, see fig. 25, 27, and 28.

Name	Area	Type	Longitude	Latitude	Material and figs
UZ007_01	Ancient settlement	Large multi-room structure	38.44698228	25.62505443	fig. 17 pl. 1
UZ007_02	—		38.44702397	25.62499951	
UZ007_03	—		38.44696883	25.62499927	
UZ008_01	Ancient settlement	Multi-room structure	38.44726677	25.62501376	fig. 17, 20 pl. 4
UZ008_02	—		38.44722203	25.6250338	
UZ008_03	—		38.44725385	25.62503932	
UZ008_04	—		38.44728948	25.62504576	
UZ008_05	—		38.44732495	25.62504997	
UZ008_centre	—		38.44727855	25.62503537	
UZ009	Ancient settlement	One-room rectangular structure	38.44740558	25.62512252	
UZ010	Ancient settlement	Half rectangle	38.44747724	25.62505445	
UZ011	Ancient settlement	One-room rectangular structure	38.44756268	25.62510942	
UZ012_01	Ancient settlement	Two-room rectangular structure	38.44757214	25.62529918	fig. 20
UZ012_02	—		38.4475748	25.62529533	
UZ013	Ancient settlement	One-room rectangular structure	38.44762858	25.62520956	pl. 6
UZ014	Ancient settlement	One-room rectangular structure	38.44771088	25.62514821	
UZ015_01	Ancient settlement	Two-room rectangular structure	38.44787275	25.62524374	
UZ015_02	—		38.44787822	25.62522122	
UZ016	Ancient settlement	Incomplete rectangular enclosure	38.4477245	25.62461756	fig. 8 pl. 6
UZ017	Ancient settlement	One-room rectangular structure	38.44793579	25.62442464	pl. 6
UZ018	Ancient settlement	Half rectangle	38.44699703	25.62565969	pl. 7
UZ019_01	Ancient settlement	Incomplete roughly circular enclosure	38.4470473	25.62586856	pl. 7
UZ019_02	—		38.447025	25.62594324	
UZ019_03	—		38.44708887	25.62595221	
UZ020	Ancient settlement	Curved wall	38.44745528	25.62586683	pl. 7
UZ021_01	Ancient settlement	Incomplete rectangular enclosure	38.44750737	25.62646042	pl. 8
UZ021_02	—		38.44756985	25.62630687	
UZ021_03	—		38.44746646	25.62645201	
UZ022	Ancient settlement	Wall	38.44784142	25.62561119	pl. 8-9
UZ023_01	Ancient settlement	Incomplete irregular enclosure	38.44805179	25.62615236	pl. 9
UZ023_02	—		38.44814893	25.62616165	
UZ024	Ancient settlement	Incomplete rectangular enclosure	38.44963513	25.62657159	
UZ025_01	Ancient settlement	Two parallel walls	38.4497915	25.62638903	fig. 6
UZ025_02	—		38.44983543	25.62639564	

UZ026_01	Ancient settlement	Incomplete irregular enclosure	38.44984229	25.62609704	fig. 7
UZ026_02	—		38.44994762	25.62611557	
UZ027_01	Ancient settlement	Large multi-room structure	38.45006083	25.62640985	pl. 10
UZ027_02	—		38.45002452	25.62647348	
UZ027_03	—		38.45005308	25.62655862	
UZ027_04	—		38.45016585	25.62644279	
UZ027_05	—		38.45021221	25.62651605	
UZ028	Ancient settlement	Incomplete irregular enclosure	38.45014078	25.62617314	
UZ029	Ancient settlement	Half rectangle	38.45016737	25.62589225	
UZ030_01	Ancient settlement	Large multi-room structure	38.45040889	25.62628986	pl. 10
UZ030_02	—		38.45054546	25.62628736	
UZ030_03	—		38.45058256	25.62629227	
UZ030_04	—		38.4504342	25.62643921	
UZ030_05	—		38.45049873	25.62647866	
UZ031_01	Ancient settlement	Incomplete roughly circular enclosure	38.45047959	25.62603995	fig. 9
UZ031_02			38.45056535	25.62613313	
UZ031_03	—		38.45060075	25.62603559	
UZ032_01	Ancient settlement	Incomplete irregular enclosure	38.45077934	25.62637007	
UZ032_02	—		38.4508248	25.62630725	
UZ032_03	—		38.45090957	25.62636676	
UZ033	Ancient settlement	Wall	38.4512844	25.62632511	
UZ034	Ancient settlement	Incomplete irregular enclosure	38.45127972	25.62645883	
UZ035_01	Ancient settlement	Incomplete roughly circular enclosure	38.45134496	25.62645377	
UZ035_02	—		38.45141234	25.62642066	
UZ036_01	Ancient settlement	Incomplete roughly circular enclosure	38.45151342	25.62642173	
UZ036_02	—		38.45153724	25.62635686	
UZ036_03	—		38.45147721	25.62636723	
UZ037_01	Ancient settlement	Incomplete roughly circular enclosure	38.45135932	25.62670941	
UZ037_02	—		38.4513871	25.62666584	
UZ038_01	Ancient settlement	Group of remains (enclosure, walls, half rectangles)	38.44677585	25.62713308	
UZ038_02	—		38.44694711	25.6271665	
UZ038_03	—		38.44710846	25.62713858	
UZ038_04	—		38.44701441	25.62730859	
UZ038_05	—		38.44712895	25.62734495	
UZ038_06	—		38.44733198	25.62698249	
UZ039	Ancient settlement	One-room rectangular structure	38.44787537	25.62772131	
UZ040_01	Ancient settlement	Two parallel walls	38.44785276	25.62752789	
UZ041_02	—		38.44790876	25.6275273	
UZ041_01	Ancient settlement	Large multi-room structure	38.44827444	25.62763727	
UZ041_02	—		38.44832348	25.62765905	
UZ041_03	—		38.44834005	25.62772874	
UZ041_04	—		38.4484663	25.62761133	
UZ042_01	Ancient settlement	Large multi-room structure	38.44829207	25.62794452	
UZ042_02	—		38.44832442	25.62817512	
UZ042_03	—		38.4482271	25.62825516	
UZ042_04	—		38.4482662	25.62825191	
UZ043_01	Ancient settlement	Large multi-room structure?	38.44891226	25.62750866	

UZ041_02	—		38.44874126	25.62808671	
<b>UZ044</b>	Ancient settlement	Large multi-room structure?	<b>38.448748</b>	<b>25.628082</b>	
<b>UZ045_01</b>	Ancient settlement	Large multi-room structure	<b>38.44887219</b>	<b>25.62828252</b>	fig. 16 pl. 10
UZ045_02	—		38.44900604	25.62835213	
UZ045_03	—		38.44870111	25.62858408	
UZ045_04	—		38.44883913	25.6284447	
UZ045_05	—		<b>38.44914016</b>	25.62849249	
UZ045_06	—		38.44902824	25.62866621	
UZ045_07	—		38.44900158	25.62868333	
UZ045_08	—		38.44901614	25.62863034	
UZ045_09	—		38.44902368	25.62856622	
UZ045_10	—		38.44907913	25.62854253	
UZ045_11	—		38.44876291	25.62874358	
UZ045_12	—		38.44878714	25.6288317	
UZ045_13	—		38.44884952	25.62885582	
<b>UZ046_01</b>	Ancient settlement	Two-room rectangular structure	<b>38.44851349</b>	<b>25.62872365</b>	
UZ046_02	—		<b>38.44849524</b>	25.62870596	
<b>UZ047_01</b>	Ancient settlement	Incomplete irregular enclosure	<b>38.4481592</b>	<b>25.62850143</b>	
UZ047_02	—		38.44824267	25.62852924	
<b>UZ048_01</b>	Ancient settlement	Incomplete rectangular enclosure	<b>38.44930597</b>	<b>25.62805547</b>	
UZ048_02	—		38.44929707	25.6279311	
UZ048_03	—		38.44940186	25.62793802	
UZ048_04	—		38.44947176	25.6280121	
<b>UZ049</b>	Ancient settlement	Half rectangle	<b>38.44942861</b>	<b>25.6283797</b>	fig. 12
<b>UZ050_01</b>	Ancient settlement	One-room rectangular structure and enclosure	<b>38.4493711</b>	<b>25.62861924</b>	
UZ050_02	—		38.44938764	25.62866664	
<b>UZ051_01</b>	Ancient settlement	Large multi-room structure?	<b>38.44977331</b>	<b>25.62869139</b>	
UZ051_02	—		38.44984751	25.62862829	
UZ051_03	—		38.4498192	25.62861211	
UZ051_04	—		38.44983616	25.62863091	
UZ051_05	—		38.44976071	25.62859979	
<b>UZ052_01</b>	Ancient settlement	Incomplete roughly circular enclosure	<b>38.44990014</b>	<b>25.62826355</b>	
UZ052_02	—		38.44988572	25.62819025	
<b>UZ053</b>	Ancient settlement	Curved wall	<b>38.44736377</b>	<b>25.62895202</b>	
<b>UZ054_01</b>	Ancient settlement	Two-room rectangular structure	<b>38.44744766</b>	<b>25.6291111</b>	
UZ054_02	—		38.44748144	25.62910998	
<b>UZ055</b>	Ancient settlement	Incomplete rectangular enclosure	<b>38.44756059</b>	<b>25.62919062</b>	
<b>UZ056_01</b>	Ancient settlement	Incomplete irregular enclosure	<b>38.4480599</b>	<b>25.62908863</b>	
UZ056_02	—		38.44813874	25.62902813	
<b>UZ057_01</b>	Ancient settlement	Incomplete rectangular enclosure	<b>38.45178736</b>	<b>25.62794961</b>	
UZ057_02	—		38.45200981	25.6279173	
<b>UZ058_01</b>	Ancient settlement	Incomplete rectangular enclosure	<b>38.45272318</b>	<b>25.62741639</b>	
UZ058_02	—		38.45273626	25.62726792	
<b>UZ059_01</b>	Ancient settlement	Undetermined	<b>38.45282791</b>	<b>25.62745976</b>	
UZ059_02	—		38.45286232	25.62758697	
UZ059_03	—		38.45287697	25.62768784	
UZ059_04	—		<b>38.45296596</b>	25.62777471	
UZ059_05	—		38.4531119	25.62791824	

UZ060_01	Ancient settlement	Long walls	38.45280929	25.62880696	fig. 5
UZ060_02	—		38.45331946	25.62861149	
UZ060_03	—		38.45341456	25.62876311	
UZ061	Ancient settlement	Incomplete irregular enclosure	38.45360109	25.6283301	
UZ062_01	Modern village	Roughly circular enclosure and two parallel walls	38.45551759	25.62702551	
UZ062_02	—		38.45560653	25.62702972	
UZ062_03	—		38.45565117	25.62704136	
UZ063	Modern village	One-room house	38.45588716	25.62684847	
UZ064	Modern village	One-room house	38.45594571	25.62708497	fig. 13
UZ065_01	Modern village	Multi-room house	38.4562432	25.62779509	fig. 14
UZ065_02	—		38.4562516	25.62778819	
UZ066_01	Modern village	Multi-room house with courtyard	38.45679232	25.62718318	
UZ066_02	—		38.45677071	25.62718423	
UZ067	Modern village	Multi-room house with courtyard	38.45710638	25.62721295	fig. 15
UZ068_01	Modern village	Multi-room house with courtyard	38.45696634	25.62701579	
UZ069	Modern village	Multi-room house with courtyard	38.45689633	25.62757425	
UZ070	Modern village	Multi-room house with courtyard	38.45729862	25.62738927	
UZ071	Modern village	Multi-room house with courtyard	38.45730595	25.62757329	
UZ072	Modern village	One-room house	38.45733198	25.62718913	
UZ073	Modern village	Incomplete irregular enclosure	38.45736704	25.62697495	
UZ074	Modern village	One-room house with courtyard	38.45766054	25.62715441	
UZ075	Modern village	One-room house with courtyard	38.45783729	25.62697272	
UZ076_01	Modern village	Large multi-room structure and enclosure	38.45796054	25.62737256	
UZ076_02	—		38.45774168	25.62745724	
UZ076_03	—		38.45768964	25.62760566	
UZ076_04	—		38.45754982	25.62762581	
UZ076_05	—		38.45755521	25.62748575	
UZ077	Modern village	One-room house	38.45755233	25.62776721	
UZ078	Modern village	Multi-room house with courtyard	38.45808757	25.62714925	
UZ079	Modern village	Two adjacent enclosures	38.45863863	25.62709981	
UZ080	Modern village	Enclosure	38.45835082	25.62730013	
UZ080.1	Modern village	Mosque	38.4583576	25.6272212	
UZ081	Modern village	Two adjacent enclosures	38.4583931	25.62754339	fig. 11
UZ082	Modern village	Multi-room house with courtyard	38.45845433	25.62793207	
UZ083	Modern village	Multi-room house with courtyard	38.45863953	25.62656416	
UZ084_01	Modern village	Incomplete roughly circular enclosure with rooms inside	38.45672018	25.62837868	fig. 10
UZ084_02	—		38.45681644	25.62834715	
UZ084_03	—		38.45672693	25.62841636	
UZ084_04	—		38.45675845	25.62841548	
UZ084.1	Modern village	Incomplete irregular enclosure	38.4573881	25.62843315	
UZ084.2	Modern village	Well	38.4574752	25.6285403	fig. 24
UZ085	Modern village	One-room house	38.45901653	25.62755441	
UZ086	Modern village	One-room house	38.45894812	25.62769836	
UZ087	Modern village	Multi-room house	38.45894284	25.62800054	
UZ088	Modern village	One-room house	38.45871776	25.62846767	
UZ089	Modern village	One-room house	38.45893695	25.62862947	
UZ090	Modern village	Wall?	38.45871376	25.62861903	
UZ091	Modern village	Enclosure (not very visible on Google Satellite image)	38.45854012	25.62858024	

UZ092	Modern village	Multi-room house?	38.45824124	25.62863543	
UZ093	Modern village	Enclosure?	38.45864898	25.62889222	
UZ094	Modern village	Incomplete irregular enclosure?	38.45889154	25.62916183	
UZ095_01	Modern village	Incomplete irregular enclosure?	38.45799156	25.6285241	
UZ095_02	—		38.45794186	25.62860178	
UZ096_01	Modern village	One-room house with courtyard?	38.45801071	25.62915362	
UZ096_02	—		38.45794388	25.62930869	
UZ096_03	—		38.45794053	25.62921968	
UZ097_01	Modern village	Multi-room house with courtyard?	38.45826665	25.62953363	
UZ097_02	—		38.45840157	25.62951958	
UZ098	Modern village	Multi-room house with courtyard?	38.45850805	25.62960575	
UZ099	Modern village	One-room house with courtyard?	38.45876507	25.62961767	
UZ100	Modern village	? (structure not very visible on Google Satellite image)	38.45886445	25.6294012	
UZ101	Modern village	One-room house	38.45911919	25.62961203	
UZ102_01	Modern village	Several enclosures?	38.46015465	25.6267465	
UZ102_02	—		38.46037226	25.62669736	
UZ102_03	—		38.46032965	25.6268823	
UZ102_04	—		38.46030507	25.62705088	
UZ102_05	—		38.46054276	25.62692742	
UZ102_06	—		38.46079494	25.62680237	
UZ102_07	—		38.4609917	25.62696599	
UZ103_01	Shaykh's house	Multi-room house with courtyard	38.46574475	25.63238919	
UZ103_02	—		38.46600038	25.63244323	
UZ103_03	—		38.46598202	25.63236882	
UZ104	Shaykh's house	One-room house with courtyard	38.46500321	25.63279303	
UZ105	Shaykh's house	One-room house	38.46499529	25.63312057	
UZ106	Shaykh's house	One-room house?	38.466495	25.63288363	
UZ107_01	Shaykh's house	Multi-room house with courtyard?	38.46673967	25.63270324	
UZ107_02	—		38.46675899	25.632689	
UZ107_03	—		38.46679807	25.63271044	
UZ107_04	—		38.46679121	25.63262874	
UZ107_05	—		38.46682018	25.63267134	
UZ108_01	Shaykh's house	Multi-room house with courtyard?	38.467001	25.63266172	
UZ108_02	—		38.46709346	25.63268064	
UZ108_03	—		38.46710041	25.63264229	
UZ109_01	Shaykh's house	Multi-room house with courtyard?	38.46723505	25.63263635	
UZ109_2	—		38.46724764	25.63263164	
UZ110_01	Shaykh's house	Adjacent roughly circular enclosures?	38.4669557	25.6327755	
UZ110_02	—		38.46699362	25.63278662	
UZ111	Shaykh's house	Incomplete rectangular enclosure	38.46679226	25.63290172	
UZ112_01	Shaykh's house	Multi-room house	38.46609118	25.63326676	
UZ112_02	—		38.46616831	25.63326847	
UZ112_03	—		38.46609414	25.63322253	
UZ113	Shaykh's house	One-room house?	38.46627758	25.633382	
UZ114_01	Shaykh's house	Multi-room house with courtyard	38.46642661	25.63329751	
UZ114_02	—		38.46648956	25.63329841	
UZ115	Shaykh's house	One-room house with courtyard?	38.4664832	25.63343936	
UZ116	Shaykh's house	Incomplete irregular enclosure	38.46685557	25.63329503	
UZ117_01	Shaykh's house	Multi-room house with courtyard?	38.46697393	25.63350866	

UZ117_02	—		38.46705687	25.63350626	
UZ117_03	—		38.46704988	25.63356142	
UZ118_01	Shaykh's house	Curved wall	38.46716976	25.63339643	
UZ118_02	—		38.46723589	25.63347219	
UZ119	Shaykh's house	One-room house with courtyard?	38.4660841	25.63368027	
UZ120	Shaykh's house	Incomplete irregular enclosure	38.46692848	25.63371488	
UZ121	Shaykh's house	One-room rectangular structure	38.46685482	25.63388133	
UZ122	Shaykh's house	One-room rectangular structure	38.46561259	25.63453335	
UZ123	Shaykh's house	Incomplete irregular enclosure	38.46586165	25.63452701	
UZ124_01	Shaykh's house	One-room house	38.46605929	25.63448342	
UZ124_02	—		38.46609368	25.63452581	
UZ125	Shaykh's house	One-room house	38.46634267	25.63469381	
UZ126_01	Shaykh's house		38.46643803	25.63520587	
UZ126_02	—		38.466503	25.63520818	
UZ126_03	—		38.46654319	25.63520412	
UZ126.1		Mosque	38.4666095	25.6351633	
UZ127_01	Caravanserai area	Very long wall	38.43235431	25.62116617	
UZ127_02	—		38.4377391	25.62019905	
UZ127_03	—		38.44371993	25.61462981	
UZ127.1	Caravanserai area	Stone heaps in line	38.4279459	25.62122013	fig.22–23
UZ128_01	Caravanserai area	Wall	38.4370722	25.62148845	
UZ128_02	—		38.43737989	25.62092575	
UZ129_01	Other area on the basaltic lowland	Wall	38.43703767	25.63282005	
UZ129_02	—		38.43659527	25.63349199	
UZ130	Ancient settlement	Mosque	38.44714884	25.62508195	fig. 18
UZ131	Ancient settlement	Curved wall	38.44733917	25.62495523	
UZ132_01	Ancient settlement	Mosque	38.44719774	25.62426292	
UZ133			Not attributed		pl. 11
UZ134	Ancient settlement	Curved wall	38.4483637	25.62618161	fig. 4
UZ135	Ancient settlement	Incomplete roughly circular enclosure	38.44836395	25.6258322	
UZ137	Ancient settlement		38.447092	25.62755529	pl. 11
UZ138_1	Ancient settlement	Two-room rectangular structure	38.4467422	25.6282058	pl. 12
UZ139	Other area on the basaltic lowland	Ovoid stone circle	38.438243	25.62983	fig. 21
UZ140	Other area on the basaltic lowland	Well?	38.438414	25.630485	
UZ141	Other area on the basaltic lowland	Long walls	38.43896	25.631543	
UZ142	Sebkha	Well	38.46586907	25.63556249	pl. 12

# A note on the pre-Islamic pottery from Umm Zarb

Shadi Shabo (CNRS, UMR 8167)

## Introduction

During the 2019 al-‘Ulā–al-Madīnah survey undertaken in the framework of the Madâ’in Sâlih Archaeological Project (MSAP),<sup>1</sup> several pottery sherds were collected from various sites, dating to both the pre-Islamic (Nehmé et al. 2022: 187 and fig. 18; Durand 2019: 5) and Islamic periods (Ahmad, this volume; Monchamp and Siméon 2021). At Umm Zarb proper, only four sherds were attributed to the pre-Islamic period, specifically to the second half of the 1st millennium BCE. Unfortunately, all are body fragments, and no diagnostic sherd allows to determine their shape. As a result, their identification is primarily based on the interpretation of their fabric which is attested in other oases from North-West Arabia. Besides, the suggested dating remains uncertain because the sherds were collected from the surface and are out of their primary context. Taking into consideration the archaeological contexts associated with this ceramic fabric across various oases in North-West Arabia would be necessary to refine their dating.

## Pre-Islamic ceramic sherds from Umm Zarb

The pre-Islamic ceramic sherds from Umm Zarb can be divided in two categories.

### *First category*

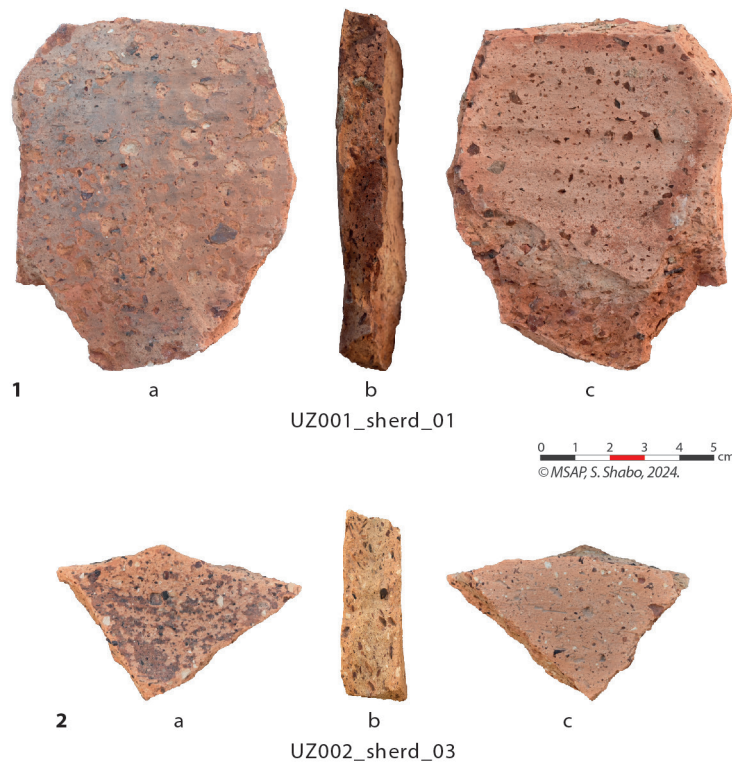
Two sherds collected from UZ001 and UZ002 (see Laroze et al. in this volume) are similar from the fabric point of view (**fig. 1**). They may broadly be attributed to the so-called ‘Grey surface North-West Arabian 1st millennium pottery’.

### Characteristic of the Grey surface North-West Arabian 1st millennium pottery

The first two sherds (see fig. 1) are characterised by a compact matrix, indicating they were highly fired, as suggested by their hardness and metallic clink. The paste colour is typically beige (sometimes reddish beige) with a light grey core. The paste is particularly distinctive due to its inclusions which are generally black or, more rarely, reddish and elongated in shape (Shabo et al. forthcoming:

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1. Nehmé et al. 2021, Nehmé et al. 2022.



**Fig. 1.** The 'Grey surface North-West Arabian 1st millennium pottery. © MSAP, S. Shabo.

fig. 22a). Another notable feature of this ceramic is its grey surface slip or self-slip, which appears on one or both surfaces, depending on the shape of the vessel. Observations from Dadan suggest that this pottery was primarily manufactured using two techniques: coiling and wheel coiling.

From a morphological perspective, as previously mentioned, the ceramics from Umm Zarb do not exhibit a consistent morphological repertoire. The thickness of the sherds indicates however that the clay was primarily used for producing large vessels. This observation aligns with findings from Dadan though very thin sherds appear occasionally .

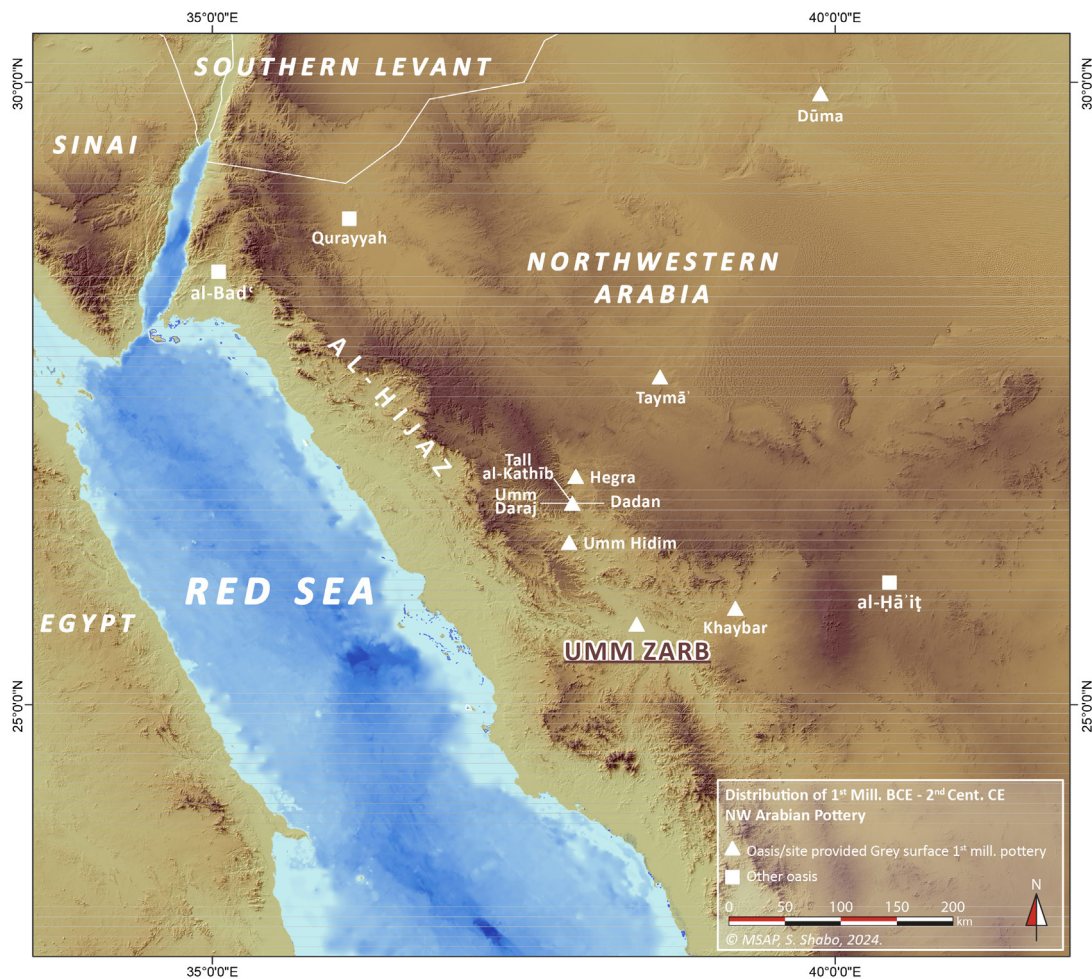
### Contextualising, chronology and provenance of the Grey surface North-West Arabian 1st millennium pottery

Thanks to finds in the recent years, this ceramic has become common in many oases in North-West Arabia. Its occurrence at Umm Zarb thus further lengthens the list of sites where it is found (table 1 and fig. 2).

Site	Identification	Date
Taymā'	Macrofabric 3	1st mill. BCE–1st cent. CE
Dūmat al-Jandal	Fabric 10a / (11?)	1st cent. BCE–1st cent. CE
Dadan	Macrofabric DDN11	8th–1st mill. BCE / 3rd–6th cent. CE
Hégra-Madā'in Šālih	Fabric Hegra 9	2nd half of 1st mill. BCE
Umm Daraj	Fabric Hegra 9	2nd half of 1st mill. BCE
Tall al-Kathīb	(DDN11 ?)	1st half of 1st mill. BCE
Umm Hidim	Fabric Hegra 9	2nd half of 1st mill. BCE
Khaybar	Macrofabric KHA6	2nd half of 1st mill. BCE

**Table 1.** List of sites where Grey surface North-West Arabian pottery is attested.

At **Taymā'**, the fabric known as macrofabric 3 exhibits a remarkable continuity, reflecting a relatively consistent production process across different periods, from the late 4th millennium BCE to the 1st century CE (Tourtet et al. 2021: tab. 2). Macrofabric 3 also shows petrographic and chemical similarities with ceramics from Qurayyah during certain periods (Daszkiewicz in Hausleiter 2014: fig. 12: 4.1;11.02). Sherds found at Umm Zarb show parallels with this macrofabric 3. Several sherds from Taymā' that share characteristics with those found at Umm Zarb are



**Fig. 2.** Distribution map of the 'Grey surface North-West Arabian 1st millennium pottery'.  
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inscribed in two scripts, Imperial Aramaic and Taymanitic (Macdonald 2020a: 83 fig. 3.1, p. 96 fig. 3.12; 2020b: 115–116 and fig. 5.7; 2020c: 147 fig. 8.8). These inscriptions suggest a chronological range from the 6th–5th centuries to the 1st century BCE.

From earlier excavations at Qaṣr al-Ḥamrā' (Taymā'), this ceramic category (macrofabric 3 with a grey surface) was recognised as one of the main ceramic productions in the area (Abu Duruk and Murad 1985: pl. 64A-B, 65, 66C). A dating to the Babylonian and post-Babylonian periods (5th–4th centuries BCE) was proposed based on discoveries in this area (Hausleiter 2012: 304 footnote 31).

A ceramic similar to that found at Umm Zarb was also identified at **Dūmat al-Jandal**, represented by Fabrics 10a and 11 (Siméon 2014: fig. 1b, Fabrics 10a and 11) which are attributed to Level 10 and dated to the early Nabataean period, 1st century BCE–1st century CE (Loreto 2014: tab. 1, Siméon 2014: 267–271).

At **Dadan**, this category of ceramic is defined as macrofabric DDN11. It was found in several excavation areas, though in small quantities, primarily from disturbed contexts. It is likely that this ceramic appeared in the 1st millennium BCE, remained in use during the second half of the 1st millennium BCE, and reappeared during the Late Antique period (3rd–6th centuries CE). This observation is based on its association with other ceramic repertoires found at the site (Shabo et al. forthcoming: fig. 38).

This fabric is also present at **Hegra/Madā'in Šālih**, identified as Fabric 9 (Tourtet and Müller 2011: 355–357, fig. 1) and dated to the Hellenistic period (Durand and Gerber 2014: 156).

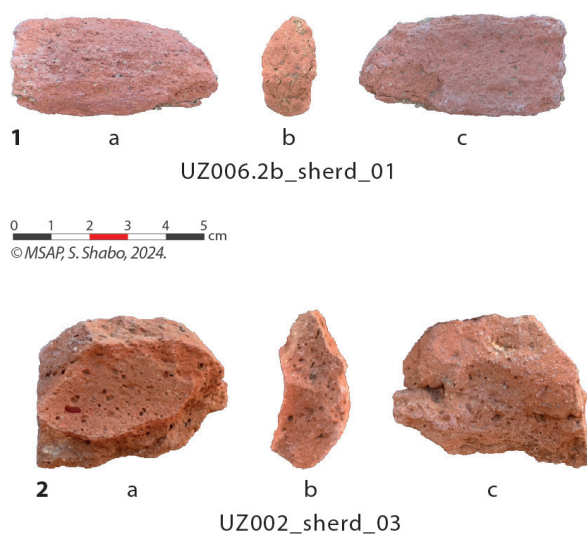
At the mountain top sanctuary of **Umm Daraj** (Abu al-Hassan 2023), this fabric was found in the site's assemblage (Durand and Bauzou 2022: 195, fig. 6A and 9B).

At **Tall al-Kathīb**, only one sherd was identified, linked to stratum III (al-Zahrani 2007: 200 fig. 74 no. 101). It is probably dated to the first half of the 1st millennium BCE (Rohmer et al. 2022: 185). South of al-'Ulā, at **Umm Hidim**, a pithos sherd from the so-called Fabric 9 of Hegra was recorded (Durand 2019: 75, Nehmé 2022: 519 fig. 4–5). According to Durand and Nehmé, the site may have been occupied from the Lihyanite to the early Nabataean periods.

Finally, this ceramic was also found in small quantities during surveys (**Khaybar** macrofabric KHA6). It was cautiously dated to the middle or the second half of the 1st millennium BCE (Shabo and Charloux 2023).

### Chronology and provenance

The chronology of this category of ceramic is still debated. In the various oases in which it was found, the dates are not entirely consistent (see table 1). In this perspective, it is crucial to take into consideration the continuity and discontinuity of the sequences of occupation in each oasis. Based on the available evidence, an emergence in the first half of the 1st millennium BCE can be suggested. Unfortunately, no complete or uncontaminated archaeological context for this ceramic repertoire that would provide sufficient evidence to establish a chronological interval for this ceramic production is available until now. The Taymā' ceramic macrofabric 3 clay, which remained in use for millennia (from the late 4th millennium BCE to the 1st century CE) may suggest the existence of a regional ceramic centre producing pottery distributed to several oases in the region. This ceramic type is also among those which circulated most widely in the region during the 1st millennium BCE. A combination of morphological and technological analyses, archaeometric studies, with absolute dating from well-preserved archaeological contexts may help resolve this issue in the future.



**Fig. 3.** The 'Khaybar macrofabric KHA9'.  
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As for the provenance of this pottery, it is possible that the production centre was in the northern part of the region, in the areas of Taymā' and Qurayyah, with Taymā' being a more likely candidate due to the significant quantities and the variety of this material uncovered at the oasis, particularly at Qaşr al-Ḥamrā'.

### Second category

The second category of pottery collected from the surface at Umm Zarb is represented by two body sherds from UZ002 and UZ006 (**fig. 3**), which can also be dated to the second half of the 1st millennium BCE. This category is less commonly found in the oases of North-

West Arabia. It is only been attested at Khaybar, where it is identified as macrofabric KHA9 (Shabo and Charloux 2023: fig. 3).

### Characteristic

The paste of this macrofabric is slightly porous and is characterised by its clayey nature, generally red in color. The main inclusions are predominantly yellowish white (likely carbonate), along with transparent and less red and black inclusions. This ceramic category was fired in an oxidising atmosphere. The manufacturing technique as in the Khaybar assemblage is coiling, with traces of rotation.

Since the sherds from Umm Zarb are body sherds, they cannot provide sufficient information to reconstruct the morphological repertoire of this category. However, at Khaybar, this ceramic is known to include both small and large vessels.

### Chronology

At Khaybar, the ceramic assemblage is still under study. However, its association with other well dated ceramic materials such as the Southern Levantine Flask (Shabo and Charloux 2023: fig. 3, macrofabric KHA13; Shabo et al. forthcoming: fig. 32–33) has significantly contributed to assigning a tentative date to the second half of the 1st millennium BCE.

### Conclusion

The pre-Islamic ceramics found at Umm Zarb bring additional information to the map of pre-Islamic ceramic in North-West Arabia. Most interestingly, they align with the results obtained from the <sup>14</sup>C analyses as presented in the introduction by L. Nehmé.

It is most likely that the four pre-Islamic sherds found at Umm Zarb were imported. This in turn shows the importance of this site, as was previously suggested (Nehmé et al. 2022). However, the fact that only imported pre-Islamic ceramics have been identified so far raises a fundamental question: what did the local ceramic production at Umm Zarb look like? Only further excavations can answer this question.

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# The Islamic pottery of the Umm Zarb settlement

Mustafa Ahmad (Goethe University Frankfurt  
& German Archaeological Institute – Orient Department)

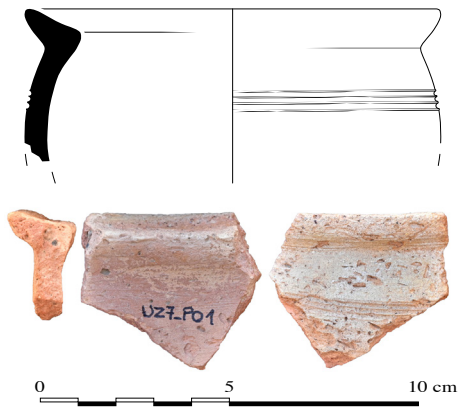
The pottery sherds collected from a number of structures belonging to the settlement of Umm Zarb (see the chapter on the “Basaltic lowland” for more detail on the latter) belong to a variety of ceramic wares. The majority of the sherds consist of unglazed materials, though a small number of glazed wares were also identified. In the Appendix following this text, the reader will find a table giving the occurrence of the various ceramic wares in the structures that were documented. Below is a detailed description of the identified ceramic wares.

## A. Unglazed wares

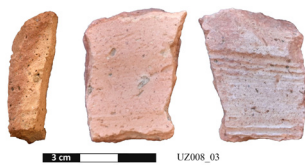
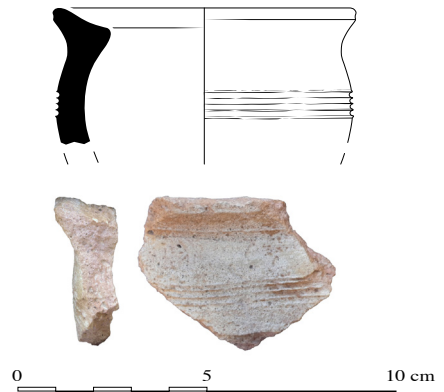
### *Common ware pottery*

A significant portion of the collected pottery sherds consists of common ware pottery, with a specific type of small-size jar being particularly frequent. This jar features a sharply out-turned rim, a slightly ovoid body, and a solid flat base. The fabric is primarily composed of fine sandy material or mineral- and vegetal-tempered fabrics. The paste colours are predominantly buff or greenish buff, or reddish orange core with buff or greenish buff colours. These jars are consistently decorated with horizontal or wavy incised combed patterns applied to the outer face below the rim and on the middle part of the body. As mentioned above, this ware and type represent the most commonly attested pottery, and is found in the following structures: UZ007, UZ008, UZ010+UZ011, UZ012, UZ013, UZ014, UZ016, UZ018, UZ019, UZ020, UZ021, UZ022, UZ023, UZ027, UZ030, UZ045, UZ133, UZ136, UZ138, and UZ142.

Ø 11 cm UZ007\_P01



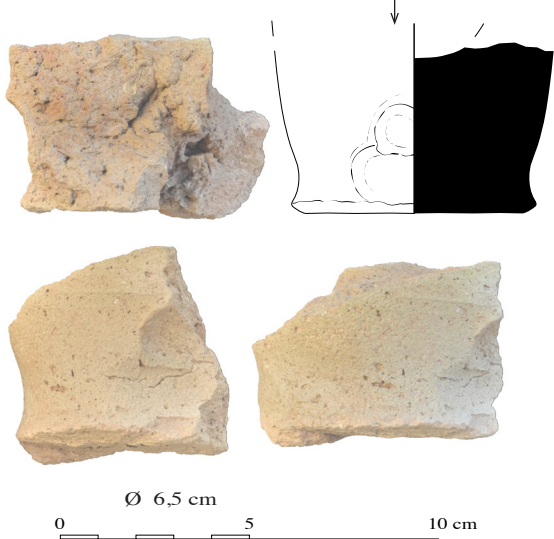
Ø 8 cm UZ008\_P02



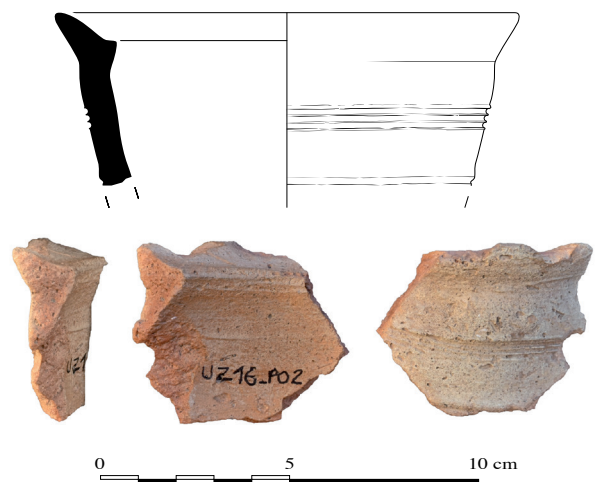
Ø 11 cm UZ013\_P01

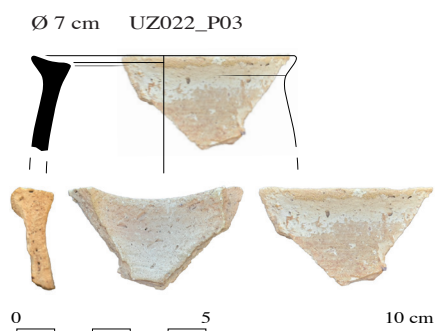
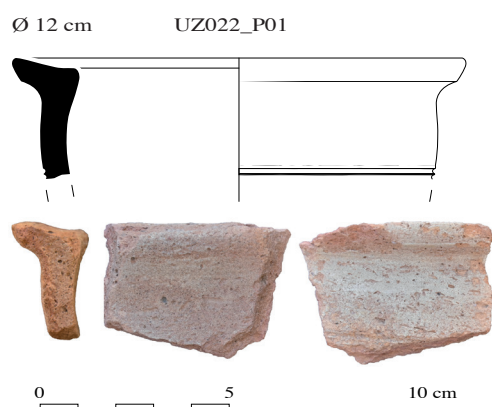
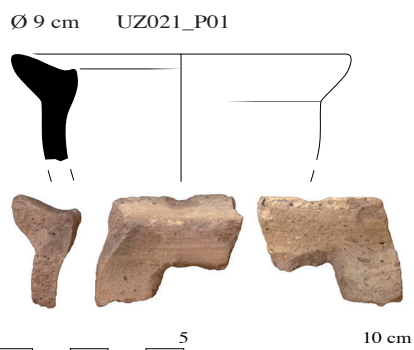
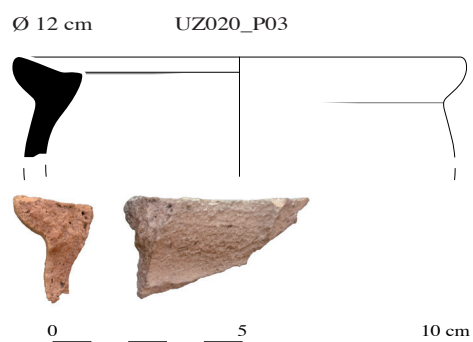
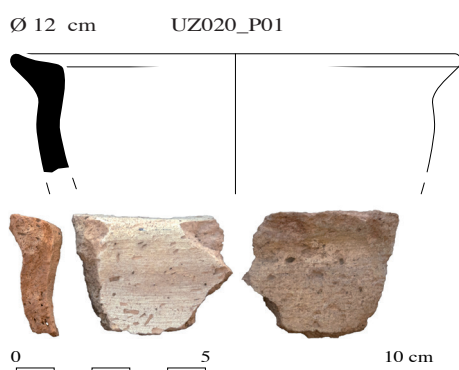
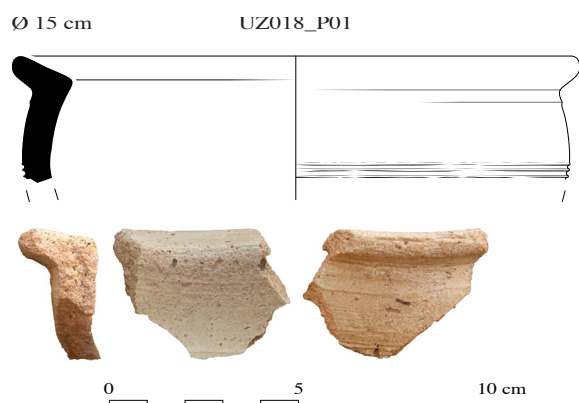


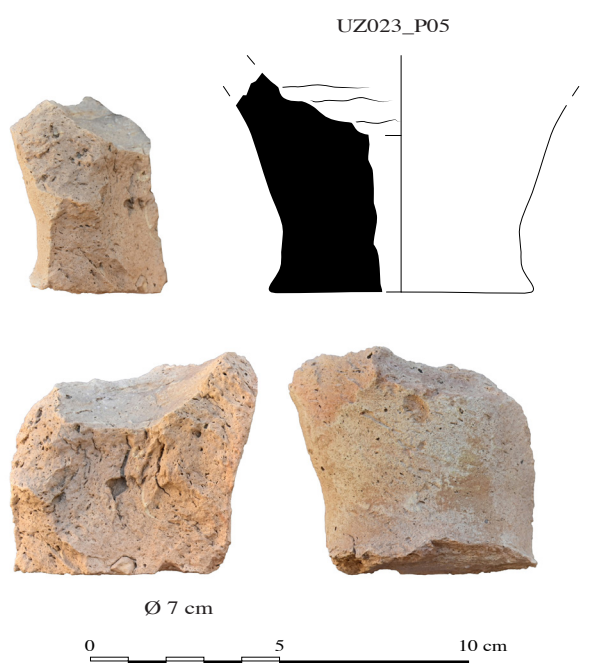
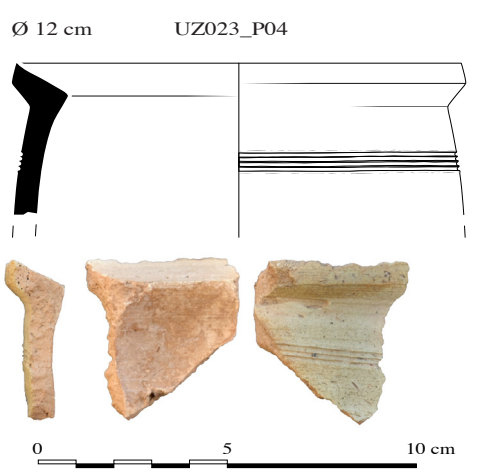
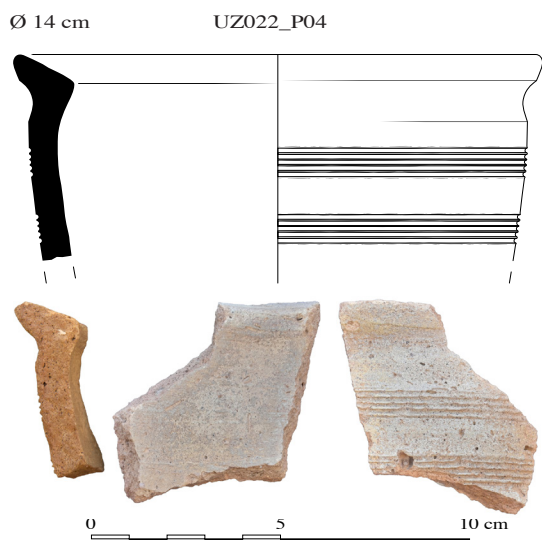
UZ016\_P01  
finger prints

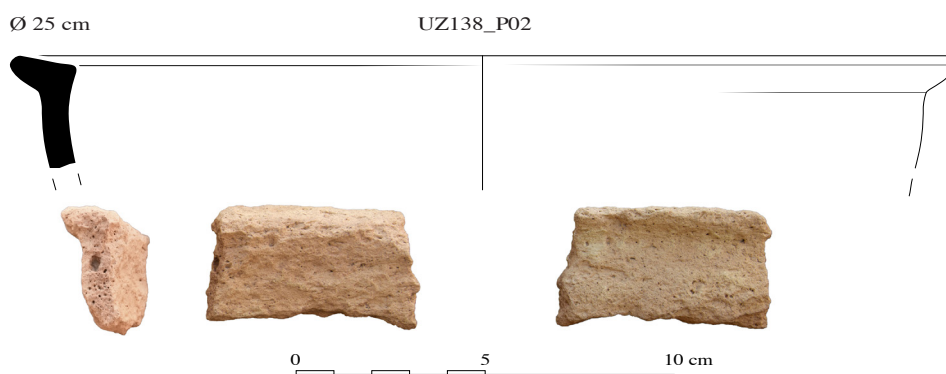
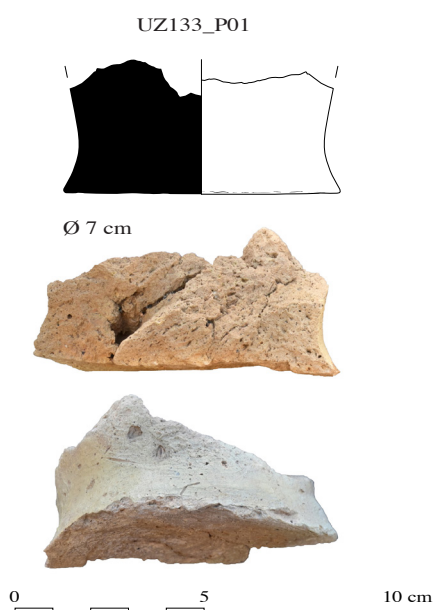
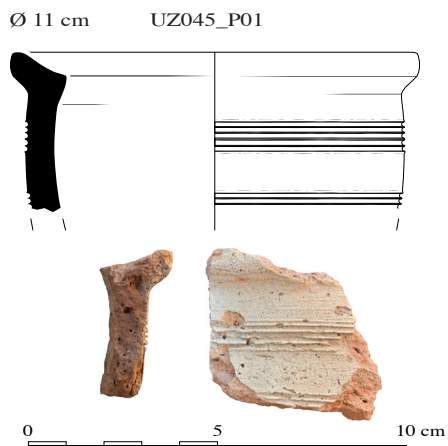


Ø 13 cm UZ016\_P02

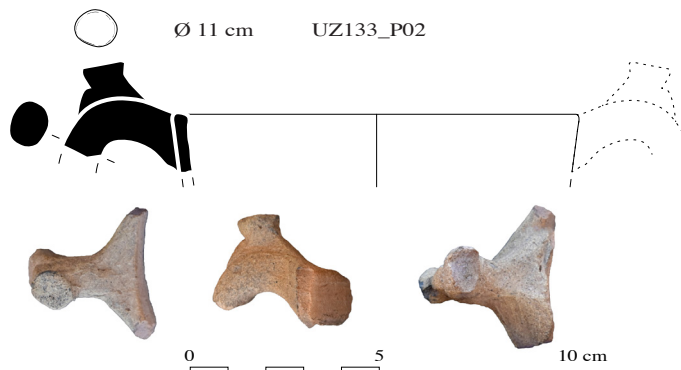








Finer common ware was also identified in the form of jugs. The fabric of these jugs is finer than that of the jars but they are made from common ware fabrics and they do not belong to fine ware pottery. The collected sherds of this type feature plain rounded rims and round-section handles with thumb-stops. Examples of these jug were found in structures UZ010+UZ011, UZ030, and UZ133.



## B. Glazed wares

### *Opaque white glazed ware*

Only two sherds of this ware were identified in the pottery assemblage. One is part of a base, possibly of a bowl (UZ020\_sherd\_1), and the second (UZ045\_sherd\_1) is a small body sherd. Both sherds have a buff fabric colour.



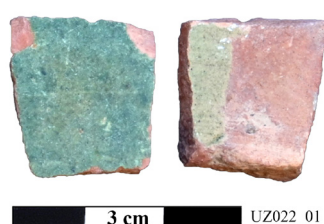
### *Opaque white glazed ware with golden lustre*

Three lustre glazed sherds are attested in the collected pottery. One (UZ017\_sherd\_1) is part of the rim of a bowl, the second (UZ018\_sherd\_1) is a small fragment of a base, possibly from a bowl, and the third (UZ134\_sherd\_1) is a body sherd. The fabric of the sherds is a yellowish buff fabric colour. The texture of the glaze and the type of the fabric are characteristic of Iraqi production pottery.



### Green glazed ware

This refers to a monochrome green glazed pottery. Two sherds of this ware are attested in the pottery collections. The first (UZ022\_sherd\_1) has a matt green colour glaze on the outer face and a light greenish transparent glaze on the inner face. The fabric has a reddish orange colour with very fine black and white inclusions. The second (UZ142\_sherd\_1) has a shiny green colour glaze on the outer face and a very thin transparent colour glaze on the inner face. This type of ware is produced locally.<sup>1</sup>



Scale missing UZ142\_01

### Transparent glazed ware

This type of glaze is transparent but has a greenish or a yellowish colour tone. It can be decorated with black decorations under the glaze. The fabric of this ware is characterised by its reddish colour and is fine sandy based.

Few sherds of this ware were collected. They were found in the following structures:

- UZ008\_sherd\_1, decorated with a black stripe under a transparent greenish glaze;
- UZ010+UZ011\_sherd\_1, decorated with a black stripe under a transparent yellowish glaze with green splashes;
- UZ014\_sherd\_1, yellowish glaze colour, thick in texture;
- UZ021\_sherd\_1, transparent greenish glaze colour;
- UZ027\_P01, rim of a jar, transparent greenish glaze colour.

This pottery is produced locally.

1. Personal observation based on comparisons with materials from the region, particularly with the pottery from Qurḥ/Al-Mābiyāt (ca 100 km north of Umm Zarb).

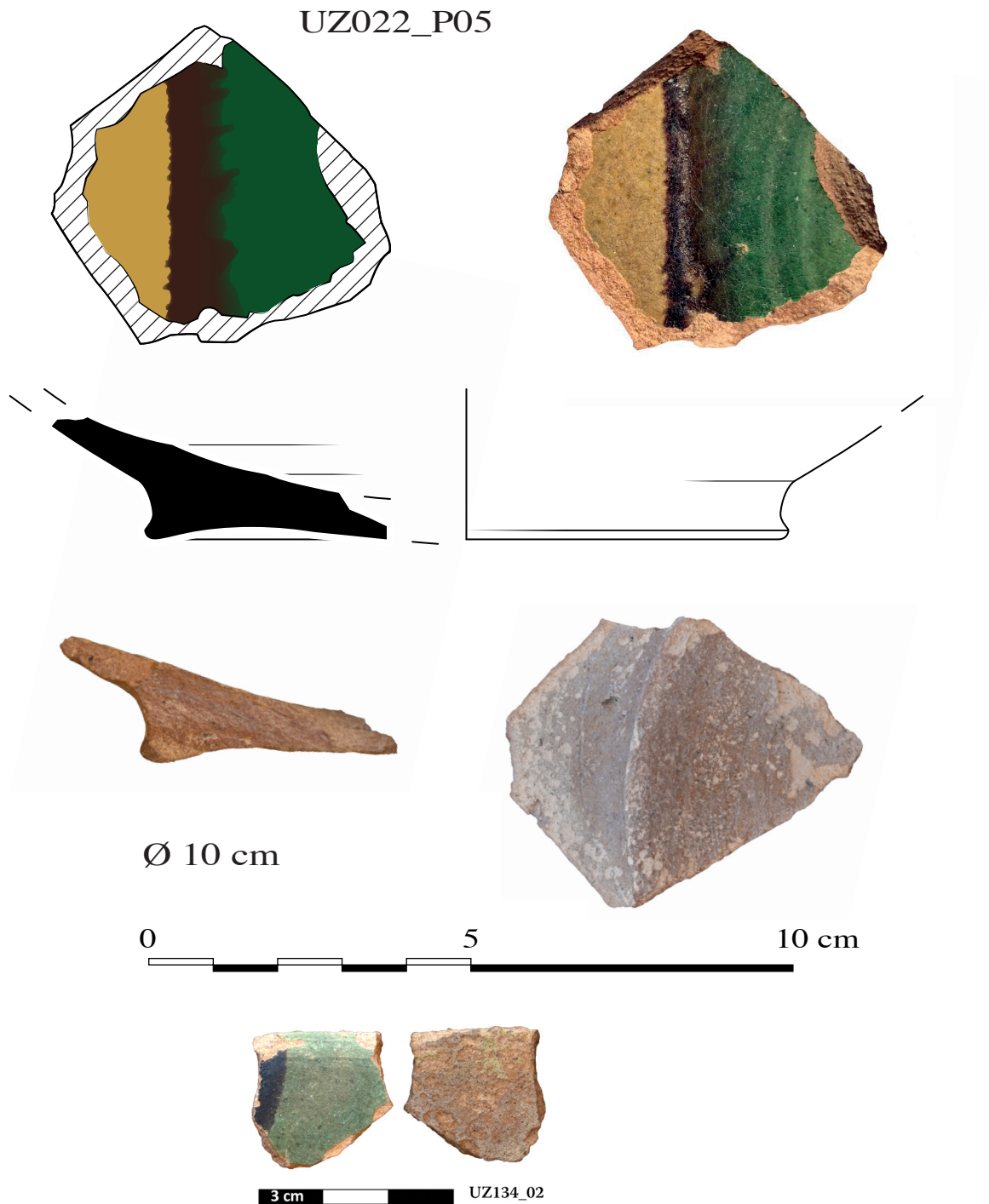


Ø 6,5 cm UZ027\_P01



### Polychrome glazed ware

This ware characterised by the application of different glaze colours on a reddish sandy fabric. Two sherds of this ware are attested. The first (UZ022\_P05) is the base of a possible bowl with green, black, and yellow glaze colours on the inner face, while the outer face is covered by a thin transparent glaze (here eroded). The second (UZ134\_sherd\_2) has green and black glaze colours on the inner face of the sherd and a transparent glaze colour on the outer face.



## Typology

Considering the small number of diagnostic sherds collected, it is challenging to establish a detailed typology of the pottery at this stage. However, among the diagnostic sherds, a notable quantity of a specific type of common ware small jar has been identified. This jar features a sharply out-turned rim, a slightly ovoid body decorated with combed decorations, and a solid flat base. Additionally, unglazed materials include jugs with a plain rounded rim and a handle of round section with a thumb-stop. In contrast, glazed ware materials include bowls, small jars, and large jars.

## Chronology

The collected materials represent a homogeneous assemblage, even though they originate from different contexts or structures. They can be dated to the **10th century with a possible extension into the 11th century**. The dating is based on comparisons with similar materials from the region, particularly those from Qurḥ/AI-Mābiyāt.

## Conclusion

Islamic ceramics recovered at Umm Zarb provide important information about the socioeconomic and cultural dynamics of the area, especially in the tenth and eleventh centuries. The fact that the ceramics of Umm Zarb are stylistically and technologically similar to those produced at other significant sites in the region such as Qurḥ/AI-Mābiyāt emphasises the existence of interrelated networks for production and distribution. These networks most likely served the requirements of the people living along significant trade and pilgrimage routes in Wādī al-Qurā, which connected Medina, Mecca, and other major cities.

The ties of Umm Zarb to larger trade networks are further demonstrated by the finding of imported pottery, including a few sherds of lustre ware likely to have been imported from southern Iraq. This implies that the settlement was integrated into a broader cultural and economic system that made it easier to trade goods over long distances. The local community had access to luxury products and its involvement in regional and interregional trade is indicated by the existence of high-value objects such as lustre ware.

However, the majority of the pottery at Umm Zarb, whether glazed or unglazed, are of regional production. The prevalence of locally/regionally made pottery demonstrates how Umm Zarb was incorporated into the material culture of the region, reflecting common customs and traditions. Taken together, these discoveries shed light on Umm Zarb's dual character as a player in the local production network as well as a (small?) node in the Islamic world trade network.

# Conclusion

Laïla Nehmé (CNRS, UMR 8167)

A team from the Madâ'in Sâlih Archaeological Project (MSAP) undertook explorations and surveys at Umm Zarb in 2019, 2022, and more extensively in 2024, this last season being the object of the present report. As suggested by H. al-Jāsir, followed by others,<sup>1</sup> Umm Zarb—sometimes spelled Umm Darb or Umm Dharb—is equated with Dhū al-Marwah, a place-name mentioned in a number of Arabic sources.<sup>2</sup> Dhū al-Marwah was a halt on the Syrian pilgrimage road and is described by al-Muqaddasī, in the 11th century, as a “strongly fortified town”.<sup>3</sup> It also likely corresponds to ancient Mochura in Ptolemy’s *Geography*. Besides, Umm Zarb was long ago identified by A. de Maigret (1997: 322, fig. 4; 2003: 14) as being on the alleged itinerary of the Frankincense caravan route (**fig. 1**). De Maigret interpreted it as an important centre “as it was the starting point for the road that led to the sea, following the valley of W. al-Ḥamd to the West”. He added further: “the fact that that road is actually practicable and the probable identification of Karkumā (mouth of the *wādī* in the Red Sea) with Leuke Kome are both conducive to a confirmation of the hypothesis”.

The survey has shown that the site is composed of at least four groups of remains of various dates. From the earliest to the latest these are:

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1. al-Wohaibi 1973: 161; De Maigret 1997: 322; al-Kilābī 2010: 461 (“After al-Rahba, the route headed towards Dhu’l-Marwa, which was a celebrated town at the start of the Islamic era, and situated at the meeting point of Wadi al-Jazal and Wadi al-Hamd in the region of Umm Zarb, near Bada’i’ al-Zali’a”; al-Ghabban 2011: 103–104.

2. Al-Wohaibi 1973, s.v. Dhul-Marwah, p. 157–161.

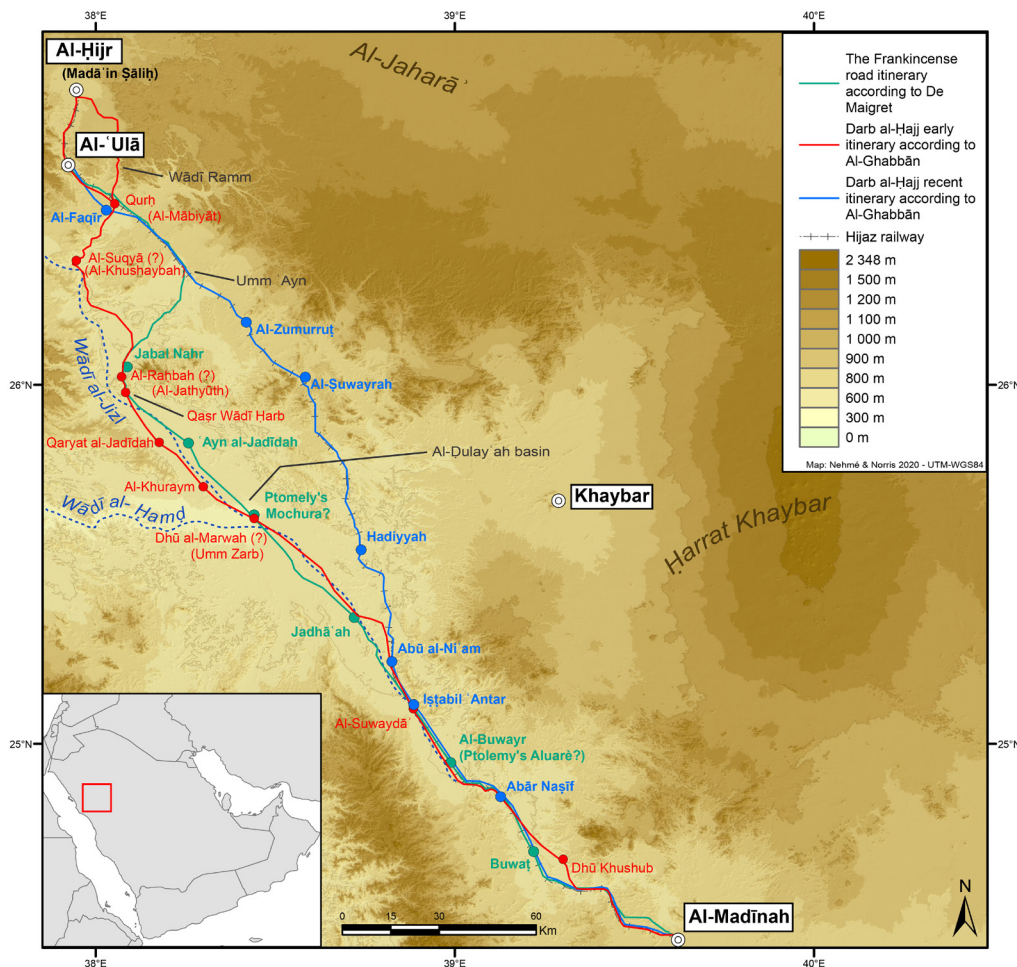
3. <https://al-maktaba.org/book/23696/84> viewed 18 December 2024:

[10] والمروة بلد حصين كثيرة النخيل جيّدة

[11] التمور سقياهم من قناة غزيرة

[12] عليها خندق وأبواب حديد وهي معدن المقل والبرديّ حازة في الصيف الغالب عليها بنو جعفر

English Translation in al-Wohaibi 1973: 159: “a strongly fortified town abounding in palm trees and excellent dates. A wide canal supplies it with drinking water. It is surrounded by a ditch and guarded by iron gates. It abounds in bdellium (*chamoerops humilis*) and an excellent variety of dates known as Burdi (Barni). The town is hot in summer. It is dominated by B. Ja’far”. Note that Arabic *muql* refers in this text to a variety of palm-tree, the Theban palm (*Hyphaene thebaica*), not to the *Commiphora muql* from which the resin known as bdellium is extracted.



**Fig. 1.** Map of the area between al-'Ulā and al-Madīnah showing the hypothetical stops given by A. de Maigret (in green) and A. al-Ghabban (in red and blue).

- two forts, UZ001 and UZ002, the plan of which can be compared to that of the 'En Rahel stronghold in the Negev, and which may date to the interval 230–50 BCE while the Nabataean Schmid Phase 2 sherd discovered in UZ001 indicates that one period of occupation at least may extend to the interval between 50 BCE and 20 CE;
  - the caravanserai UZ006 and adjacent building UZ006.2, the date of which remains unknown but the caravanserai has parallels in al-Ḥurḍah near Khaybar (early Abbasid) and in 'Aynūnah (late antique or early Islamic);
  - a relatively small 10th/11th century settlement;
  - two 20th century settlements, one installed around the first house built by the local shaykh on a promontary, and one built slightly later by his sons and other members of his community.
- The 'discovery' of two ancient forts at Umm Zarb is of considerable interest. It is indeed a strong argument in favour of the hypothesis that the ancient itinerary between Hegra and the Red Sea followed the Wādī al-Jizl (which runs southwards from al-'Ulā), then the Wādī al-Ḥamd (which runs from the south-east to the north-west between Medina and the Red Sea) down to al-Quṣayr, 40 km south-east of al-Wajh, on the left bank of the Wādī al-Ḥamd. This itinerary corresponds to the minimum energy expenditure least-cost path (Fiema et al. 2020a: pl. 6.2a). At al-Quṣayr, a monumental Nabataean *triclinium* was identified (Fiema et al. 2020: 85–89, with discussion and



**Fig. 2.** *The triclinium of al-Qusayr as photographed in 2005. © L. Nehmé.*

previous bibliography) (**fig. 2**). The site is now *ca* 5 km inland and may well have been the last settlement before reaching the Red Sea.

Considering the dates provided by the surface pottery and the  $^{14}\text{C}$ , the strategic position of Umm Zarb on the Hegra–Red Sea and Yathrib/Medina–Red Sea routes, building a fortification there in the first century BC makes perfect sense. This corresponds to the peak of the development of the Red Sea maritime routes (Schiettecatte 2012: 242–243; Seland 2009: 84),<sup>4</sup> to the arrival of the Nabataeans at Hegra, and, perhaps slightly later, to the early Nabataean inscriptions on the Darb al-Bakrah itinerary between Hegra and Petra (Nehmé 2021). This huge investment would result from their desire to control the caravan routes not only down to Hegra but further south, probably to continue playing a role in the transarabian trade by land at a time when the maritime route was gaining more and more importance, at least up to the latitude where navigation became too difficult, in the Northern Red Sea, because of the winds blowing from the north throughout the year.

If the above is correct, this also probably indicates that the Nabataeans extended their influence/control at least down to Umm Zarb, i.e. 136 km south-east of Hegra, and that, in turn, gives more weight to the hypothesis that they extended their influence as far south as Yathrib. It can finally be taken as an argument in favour of the harbour of Leuke Kome being located in the area of al-Wajh rather than at ‘Aynūnah, much further north (**fig. 3**).

4. Seland 2009: “By late Ptolemaic and early Roman times [...]. This does not mean that the risk of shipwreck disappeared or that the waters of the Red Sea became easier to navigate, but after centuries of accumulated practice, Red Sea navigation had become practical and traditional knowledge to the people involved, little different from Mediterranean navigation”.



Fig. 3. Map of North-West Arabia.

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