



Report on the 2020 Season of the Madâ'in Sâlih Archaeological Project

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► To cite this version:

Laïla Nehmé, Abdulrahman Arafa, J. Dentzer-Feydy, Caroline Durand, Florent Égal, et al.. Report on the 2020 Season of the Madâ'in Sâlih Archaeological Project. [Research Report] Orient et Méditerranée. 2021. hal-03131855

HAL Id: hal-03131855

<https://hal.science/hal-03131855>

Submitted on 4 Feb 2021

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Report on the 2020 Season of the **Madâ'in Sâlih** **Archaeological Project**

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Drawings by Ariadni ILIOGLOU and Jean HUMBERT



January 2021

Cover page photograph, L. Nehmé: *The rock-climbers and J. Norris preparing the work to copy the Dadanitic inscriptions.*
Next page photograph, L. Nehmé: *Pierre-Louis Gatier cleaning Latin inscription 61236_I01.*

Page set-up: P. and M. Balty art'air-éd.



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of the **Madâ'in Sâlih**
Archaeological Project



January 2021

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Introduction and Summary of Actions

Laïla NEHMÉ (CNRS, UMR 8167, Orient & Méditerranée)

Year 2020 was the second year of the five year research programme of the Madā'in Šāliḥ Archaeological Project, which was signed between the CNRS and the SCTH in March 2019. The field season took place from January 30th to March 1st.

The project was lucky enough to end up the season without being affected by the Covid-19 crisis, which started in both Saudi Arabia and France at the beginning of March. The disease affected some of the project's members but they all recovered.

List of participants to the 2020 season (fig. 1)



Fig. 1. Team photo, Madā'in Šāliḥ 2020 season.

1	ARAFA Abdulrahman	Archaeologist	Saudi Arabian	SCTH
2	BAUZOU Thomas	Numismatist	French	Orléans University
3	DURAND Caroline	Ceramicist	French	Afalula
4	ÉGAL Florent	Expedition advisor	French	Airbus (Riyadh)
5	AL-FAWWAZ Rasha	Archaeologist	Saudi Arabian	PhD student
6	GATIER Pierre-Louis	Epigraphist	French	CNRS

7	GAZAGNE Damien	Archaeologist	French	Evéha
8	GODET Tristan	Alpinist	French	Cordata
9	HUMBERT Jean	Draughtsman	French	Free lance
10	AL-MATHAMI Mohammed	Archaeologist	Saudi Arabian	SCTH
11	MORRISSEY Alan	Expedition advisor	Irish	Unpaid helper
12	AL-MUQBIL Saad	Archaeologist	Saudi Arabian	SCTH
13	AL-MUSA Maher	Archaeologist	Saudi Arabian	SCTH
14	AN-NAJM Zahir	Driver	Saudi Arabian	SCTH
15	NEHMÉ Laïla	Archaeologist, director	French	CNRS
16	NORRIS Jérôme	Epigraphist	British	PhD Student
17	PEIGNOT Paul	Archaeologist	French	Master student
18	PEILLET Marie	Restorer	French	Free lance
19	PIERRE Alain	Intendant	French	Retired
20	AL-SABHAN Ibrahim	Archaeologist, director	Saudi Arabian	SCTH
21	STROLIN Laura	Archaeozoologist	Italian	PhD Student
22	STUDER Jacqueline	Archaeozoologist	Swiss	Conservator

Two alpinists from the Cordata company (<http://cordata.fr/>), specialised in helping scientists access places difficult to reach without special equipment and skill, accompanied the team for the first time. Their participation was organised by both the Madā'in Šāliḥ and the Dadan Archaeological Projects, who shared the cost of their work.

Three PhD students joined the team: one archaeozoologist (Italian), one epigraphist (British but studying in France), and one archaeologist (Saudi). The latter has just started a PhD on the building techniques throughout the ages in the residential area of ancient Hegra under the supervision of Abdulrahman Alsuhailbani from King Saud University in Riyadh.

The actions undertaken in 2020 can be divided into three parts: **excavation**, **survey** and **laboratory work**.

Excavations

In 2020, the excavations focused on the outcrop numbered IGN 132, in the central part of the residential area, around which was built the main Nabataean sanctuary of the ancient city, first excavated in 2010 (**fig. 2**).

The sanctuary area, IGN 132

The six archaeologists available this season, one French and six Saudi Arabian, worked in this area. For the location of the working areas mentioned below, **see D. Gazagne's report, fig. 1**.

Clearance and surface scraping.

1. Final clearance of rock-cut chamber IGN 132a (*loci* 66000), half of which had been cleared in 2010. The 2020 clearance put to light a homogeneous level (66005) which may give an indication on the date when the chamber was abandoned (see the report by I. al-Sabhan *et al.*);
2. Clearance of the two long north-south walls 64402 and 64412. These border the street which formed the main access to the sanctuary from the south in the Roman period (2nd-3rd century)



Fig. 2. Outcrop IGN 132 from the north-west during the 2020 excavations.

and allowed to connect the latter with the domestic quarters of the city further south.¹ The walls are now about 15 m long and the clearance did not evidence any walls perpendicular to them. This was done by supervised workmen.

3. Surface scraping of parts of the lower terrace where walls showed on the surface, particularly in its northeastern corner (D. Gazagne).

Soundings

1. Soundings along various sections of the temenos wall (Maher al-Musa and Saad al-Muqbil): *loci* 67000: in the middle of the southern section of the temenos wall (60849), where it showed a gap. The sounding showed that the wall has been retrieved, as evidenced by the existence of a retrieval trench, the filling of which contained small blocks originally coming from the wall and forming what the retrievers did not intend to reuse;

loci 68000 and 68100: in the south-east corner of the lower terrace of the sanctuary, where two questions were still pending: the connection of wall 60823 with the earlier structures in the southeast corner of the lower terrace, and the existence or not of a wall closing the three peripheral rooms built in the Nabataean period outside the eastern limit of the terrace (a parallel to the wall that encloses the peripheral rooms on the northern side of the terrace in the Roman period).

loci 68200 and 68300: outside the northern temenos wall (60880), on the west side of the gate which gave access to the lower terrace in the Roman period (for which see Gazagne's report). The objective was to confirm the presence of Nabataean peripheral rooms along this part of the wall, which had been restituted in 2019. A wall belonging to one of them appeared and there is enough space for at least two rooms.

2. Large sounding in front of rock-cut chamber IGN 132a (*loci* 66000), down to the limit of the outcrop (**fig. 3**). This area probably formed the main access to the sanctuary in one of the Nabataean phases. This sounding yielded the first two standing columns ever found *in situ* at Hegra (see the report by I. al-Sabhan, M. al-Mathami, and A. Arafa).

1. See general phase 2 defined by D. Gazagne in his report.



Fig. 3. The area in front of chamber IGN 132a at the end of the excavations.

3. Two 5 x 5 m soundings, numbered 10 and 11 and placed diagonally to one another (*loci* 61000), were opened in the centre of the lower terrace and put to light elements of Roman houses with courtyards which occupied the lower terrace from the mid-third century onwards (D. Gazagne).

4. Two soundings, numbered 12 and 13, in line with each other (*loci* 61000), were opened across the central part of the northern temenos wall (60880), where a possible gate was identified in 2019. The soundings are bordered on each side by the walls flanking the corridor which led from the gate to the courtyard of the sanctuary (D. Gazagne).

Well no. 132

In order to start emptying the well dug at the foot of the eastern side of outcrop IGN 132, the two rock climbers from Cordata installed a lifting jack and a secured access to the well (**fig. 4**). Three



Fig. 4. The lifting jack installed over well 132 in order to empty it.



Fig. 5. The bottom of the well with the column drums at the end of the 2020 season.



Fig. 6. Notches cut in staggered rows in the well.

workmen and archaeologist A. Arafa were in charge of conducting the clearance for two weeks. The total depth of the well now reaches 7.40 m. Seven arbitrary layers (*loci* 69000), the first 10 cm high and the following 50 cm high, were distinguished. They yielded a large number of stone blocks—about one hundred—some of which, very heavy, were difficult to lift up. They are now all arranged south of the lower terrace, outside the sanctuary. At the bottom of the last layer, 69007, three column drums were left *in situ* (**fig. 5**).² The depth reached and the presence of seven lines of notches cut in staggered rows in the part of the well cut in the rock (**fig. 6**) confirm that this was a well and not a cistern.

The top of IGN 131

The drone aerial images taken by Falconviz for the project in 2017 have revealed the presence, on top of outcrop IGN 131, of archaeological structures (**fig. 7**). IGN 131 is divided into three outcrops: one small on the west, one larger and relatively high in the

2. 69008, 69009, and 69010.



Fig. 7. Falconviz aerial image of IGN 131, 2017. The middle outcrop shows archaeological structures on its summit.

middle, and one even larger but lower, on the east. Only the two western ones present archaeological remains. Two empty niches are cut side by side at the foot of the small isolated one and two niches, one with two betyls in relief and one with one betyl, are cut close to each other at a certain height on the northeastern face of the middle one (**fig. 8**). Above these two niches is



Fig. 8. Two niches with betyls on IGN 131 and Nabataean inscription (epigr. pt. 148.1).



Fig. 9. Worn staircase leading to the top of IGN 131.

carved a Nabataean name, epigraphic point no. 148.1: 'ydw, 'Aydū. The same side of the outcrop also bears a quarry front and its top was originally accessible by a now broken rock-cut staircase the worn remains of which are still visible (**fig. 9**).

Access to the top was, for the first time, secured through ropes by the Cordata team and a quick clearing was undertaken by L. Nehmé. The summit of the outcrop is a relatively flat platform occupied by two pit tombs (0.75 x 2.70 m and 0.75-0.80 x 2.40 m) between which is a larger structure, 1.65 x 2.70 m (**fig. 10**). Two isolated slabs (0.22 x 0.72 m), lying on the ground in the

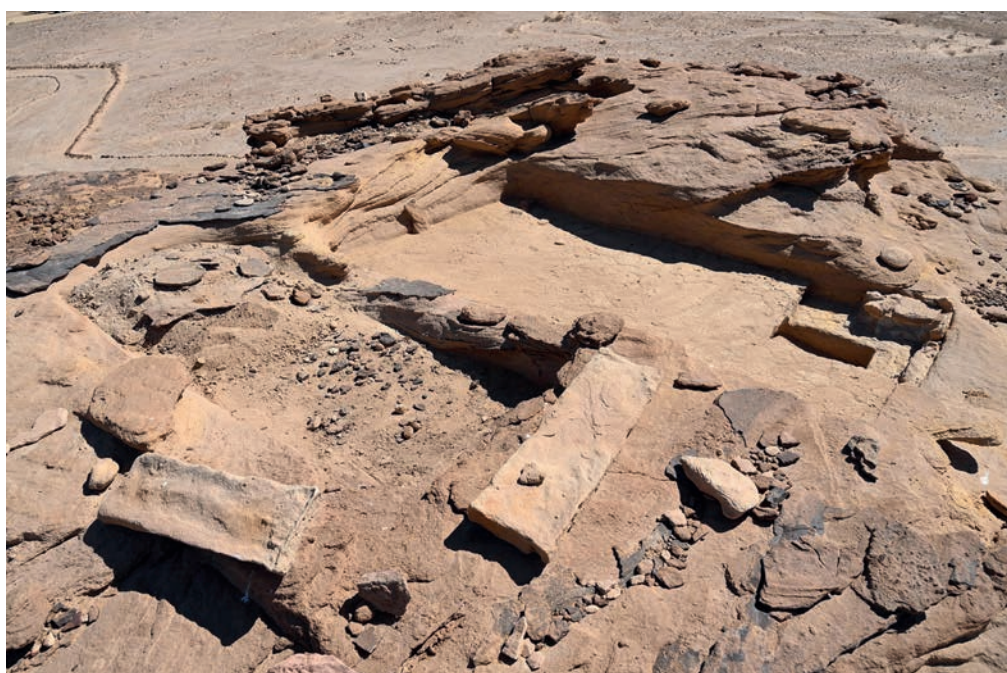


Fig. 10. General view of the top of IGN 131. The two isolated slabs are visible.



Fig. 11. The larger structure on top of IGN 131 and one of the pit tombs.

vicinity, were probably used as covering slabs for the tombs. One corner of the larger structure was cleared and turned out to be probably a small *triclinium* (**fig. 11**). A preliminary study of the collected pottery showed that it is first century AD and that it is characteristic of the Nabataean banqueting tableware which can be associated with Nabataean *triclinia* (see the report by C. Durand in this volume).

Only two funerary elements were found so far in the residential area of ancient Hegra: the mushroom-like small outcrop Marbaṭ al-Ḥiṣān, on top of which two pit tombs were dug, and IGN 131, which bears two more.

Jabal Ithlib, the tomb and tower-tomb (?) near epigraphic point 94.1

In 2017, during the second visit we made to epigraphic point no. 94.1, on top of Jabal Ithlib, two structures were identified in the vicinity: a funerary cairn built under a rock overhang and a structure which was then interpreted as a watch post (in fact possibly a tower-tomb, see below).³ A human bone, collected in 2017 inside the tomb, could be dated thanks to the efforts of A. Zazzo (CNRS, UMR 7209) to 2335 ± 25 BP. The AMS measurement was calibrated using Oxcal software v4.3.2 and the calibration curve IntCal19, providing a calibrated interval between 471 and 366 Cal BC (2 sigma).⁴

It is however only in 2020 that a secured access to this high part of the Jabal Ithlib was given to the team by the Cordata rock climbers, allowing to bring up excavating tools and to examine in detail the Dadanitic inscriptions carved on the main inscribed panel and its surroundings (**fig. 12**),

3. See the 2016 report, p. 125–126 and the 2017 report, p. 203–207.

4. Sample ECHO2409. The dating was performed on bone collagen, extracted by A. Zazzo at the radiocarbon laboratory of the MNHN, converted into graphite using AGE 3 and measured using the ECHOmicadas Compact AMS facility at the LSCE (UMR 8212 CEA/CNRS).



Fig. 12. Jérôme Norris recording securely the Dadanitic inscriptions on top of the Jabal Ithlib.

see J. Norris' report. Both the tomb (*locus* 45000) and the watch post/tower-tomb (*locus* 46000) were excavated by A. Ilioglou and L. Nehmé.

The tomb: all the collapsed stones were removed, thus making the structure of the tomb appear (**fig. 13–16**). Among the stones were four fragments of an incomplete Dadanitic inscription, visible on **fig. 14** (see J. Norris's report, inscription 45001_I01). Unfortunately, the tomb did not yield a single pottery sherd and only a few human and animal bones were collected. The human bones, including a skull (**fig. 17**), seem to belong to a single individual, possibly an adolescent. Two humeri, one femur, one femur head, one fibula and a pelvis bone were also collected (**fig. 18**), as well as coprolites from canidae.



Fig. 13. Tomb 45000 before clearance.



Fig. 14. Tomb 45000 during clearance. In the foreground, broken parts of a Dadanitic inscription.



Fig. 15. Tomb 45000 at the end of clearance.



Fig. 16. Inside of tomb 45000 with some of the bones still visible.



Fig. 17. Lateral view of the skull found in tomb 45000.



Fig. 18. The bones retrieved from tomb 45000.

The watch post/tower-tomb: this structure is built on an isolated platform between the main inscribed panel and the tomb (**fig. 19**). It was interpreted as a watch post in 2017 because one has from it a wide open view to the north and to the south-west) and because several Dadanitic inscriptions of the nearby inscribed panel contain the expression *nṯr ddn*, “the guard from Dadan”. The structure was completely cleared in 2020. It is roughly circular, with a diameter between 3.10 and 3.36 m, with an additional section of wall on the southern side (**fig. 20–22**). It did not yield any pottery sherd but it unexpectedly yielded a few human bones, possibly belonging to a hand, as well as two petrous bones, one of which will hopefully be dated. A bead made of a gastropod shell, 46000_Sh01 (**fig. 23**), was put to light, perhaps a conus shell according to J. Studer who also identified bird bones. Because of the presence of human bones, it is likely that the structure was used, at some point, as a tomb. It is however impossible to say whether this funerary use was primary or secondary, i.e. whether the structure was initially a watch post surrounded by a relatively low wall, possibly associated with the nearby Dadanitic inscriptions, later turned into



Fig. 19. Watch post/
tower-tomb 46000 when
the excavators started the
clearance.



Fig. 20. Aerial view of
structure 46000 at the end
of the clearance.



Fig. 21. Drawing of structure
46000 (A. Ilioglou).



Fig. 22. General ground view of structure 46000 from the north-west.



Fig. 23. Pierced shell 46000_Sh01.

a tomb, or whether it was a tomb from the start (**fig. 24**).⁵ The additional section of wall on the southern side reminded Wael Abu-Azizeh of three examples of rectangular tower tombs with a lateral enclosure, but this would be the first one ever identified on a circular structure (see the 2011 report, Abu-Azizeh, § I.d. on the rectangular tower tombs with enclosure, and sketch 5).

Field surveys or studies

Systematic recording of the Dadanitic inscriptions at epigraphic point no. 94.1 in Jabal Ithlib

With the help of the two rock climbers from Cordata, a safe but movable access was secured to the rock face where most of the Dadanitic inscriptions belonging to epigraphic point no. 94.1 are

5. We would like to thank Wael Abu-Azizeh for his comments on the structure.



Fig. 24. General view of structure 46000 from north-east to south-west.

carved (see fig. 12). This allowed Jérôme Norris (see his report in this volume) to examine carefully the inscriptions carved on this rock panel, most of which were published by H. Abū al-Ḥassan in 2002 and quickly examined by the project's members in 2017 (see the 2017 report, p. 203–207). Other inscriptions, written on the ground on the way to the rock face, were also examined *in situ*. Finally, new inscriptions were discovered by the rock climbers themselves on neighbouring summits and are to be included in the corpus of Dadanitic inscriptions from this area.

Survey of Greek and Latin inscriptions

Pierre-Louis Gatier had joined the team in 2018 to undertake a systematic recording of the mostly Greek graffiti carved in the areas of Madā'in Šāliḥ and Qubūr al-Jundī, a site located 7 km south of Hegra towards al-'Ulā. The results of his work were fully presented in French in the 2018 report and translated into English in the combined 2018–2019 English report prepared in 2020, link <https://hal.archives-ouvertes.fr/hal-02869017>). He joined again the team in 2020 for a little more than a week to undertake the following (see his report in this volume):

- check the reading of some of the inscriptions already examined in 2018;
- try to find and examine *in situ* a Greek inscription discovered by our colleague Ahmad al-Aboodi in a place called Umm Misk, which had been surveyed by the Madā'in Šāliḥ Project in 2004 and numbered B4-01 (but the inscriptions had not been seen then). Note that in 2004, the fence surrounding the site did not enclose this outcrop yet, it was extended beyond it at a later date as part of a buffer zone. Not only one but three Greek inscriptions were photographed by L. Nehmé who managed to climb up to the terrace above which they are carved (**fig. 25**). The same cliff contains also several Thamudic (D?) and Arabic inscriptions as well as four Nabataeo-Arabic ones and many rock-drawings.
- examine carefully and record the Greek texts carved on the Mabrak an-Nāqah huge cliff, 15 km north-west of the ancient city of Hegra, along the modern road to Tabūk. About 10 of the 18 texts identified are unpublished and some of them contain Christian names;



Fig. 25. The terrace above above which are carved many inscriptions, including three Greek.

- examine two fragments of Greek inscriptions discovered by the Madā'in Šāliḥ project and stored in the AlUla museum, Surface_I03, found in 2002 near well no. 16, already mentioned in the 2015 report, and 34530_I01, put to light in 2019 in the Roman camp;
- examine two new Latin inscriptions, 61236_I02 and 61279_I01, put to light in 2020 in sounding 12 of the Nabataean sanctuary, IGN 132;
- finally examine *in situ* an eleven line Greek inscription discovered during the surveys undertaken north of Mabrak an-Nāqah by the Royal Commission for AlUla. This inscription will hopefully be ultimately published by P.-L. Gatier;

Following his participation in the 2018 and 2020 seasons, P.-L. Gatier will provide two contributions to the project: one article collecting all the inscriptions related, one way or the other, to the Romans, including the texts put to light during the excavations; one article focusing on the inscriptions from Mabrak an-Nāqah, which are of a later date.

With these two articles, added to the publication, in the 2020 issue of the *Zeitschrift für Papyrologie und Epigraphik*, of the Greek and Latin inscriptions from the so-called South-East gate of the rampart and of the Roman camp, all the known Greek and Latin inscriptions from ancient Hegra, Qubūr al-Jundī and Makrak an-Nāqah will have been published.

Analysis of carving techniques

Seventeen tombs of ancient Hegra belong to a type of tomb which has long been recognised as being earlier than the Nabataean tombs with a monumental facade.⁶ This conclusion is based on the fact that two of them at least, IGN 26.1 and 30.1, were partly destroyed and integrated within Nabataean tombs IGN 26 and IGN 30. Since all seventeen tombs share a certain number of characteristics, it has been assumed that they are earlier than the Nabataean ones. The charac-

6. See Nehmé 2015: 56–58.



Fig. 26. *Inside of tomb IGN 125 in Hegra.*



Fig. 27. *Inside of a tomb in Dadan.*

teristics they share are the following: they are carved at a certain height above ground level, they contain exclusively pit tombs, they often have a cross shape plan and their opening usually has a square rather than a rectangular form. Two of these tombs, IGN 125 and IGN 103, were excavated in 2008 and 2014 respectively. IGN 125 did not yield any diagnostic material and IGN 103 yielded pottery from the Nabataean period as well as bones dated by C¹⁴ to the interval between 54 BC and AD 71.⁷ It has been suggested that these tombs were either Lihyanite, i.e. dated to the period which preceded the arrival of the Nabataeans in the first century BC, or Nabataean, in which case they would be associated with the first Nabataean occupation, before monumental tombs started to be carved at the turn of the Christian era.

Since the issue remained unsolved and since there was little hope of solving it through excavation, it was decided to explore another line of research, based on the analysis of the carving techniques used in these tombs and their comparison with the techniques used in the tombs

7. It is always possible that the tomb has been reused.

of ancient Dadan, at the site of Khuraybah which have, to my knowledge, never been analysed (fig. 26–27). Permission to examine the tombs of Khuraybah was granted by the directors of the Dadan Archaeological Project, Abdulrahman Alsuhaibani and Jérôme Rohmer. Paul Peignot, a master student at the University of Paris 1, undertook a two week systematic analysis, including a photogrammetric survey, of the Madā'in Šāliḥ and Khuraybah tombs (see his report in this volume).

Al-'Ulā to Medina Survey, second season

Following the first survey season in 2019, which went from al-'Ulā to Medina along the ḥajj and Ḥijāz railway roads, the team undertook, in 2020, the exploration of another possible way south, starting from the site known as as-Sīj, slightly south-east of Hegra and going further south-east in the direction of Khaybar. The team undertook a five days exploration, camping on the way (fig. 28). The team was composed of four persons: two experienced off-road drivers from the Riyadh Rovers, Florent Égal and Alan Morrissey, who have already undertaken many explorations in the Arabian Peninsula with an archaeological or epigraphic perspective, accompanied by Jérôme Norris and Laïla Nehmé. In five days, the party reached Khaybar before turning back to al-'Ulā. Many Ancient North Arabian and rock-drawings, as well as a hundred Nabataean inscriptions, were recorded on the way but the survey was perhaps not as successful as expected (see the team's report in this volume).



Fig. 28. One of the camping sites during the al-'Ulā-Medina survey.

Exhibitions and museums

Hegra museum

At the request of the Afalula, the French Agency for the Development of AlUla, the project's director, Laïla Nehmé was asked, in April 2020, to write a proposal for a Hegra site museum. In agreement with Afalula, this proposal took the form of answers to a series of questions, each of which was accompanied by precise suggestions for museography. Fourteen questions were thus prepared and a 32 page document, along with more than 150 illustrations, were delivered in May 2020.

The suggested questions are the following:

1. What is Hegra?
2. Was Hegra installed in a suitable environment for humans?
3. Who were the Nabataeans?
4. Why did the Nabataeans settle in Hegra?
5. How was Hegra discovered?
6. Did the Nabataeans have a religion of their own?
7. What do the Nabataean monumental tombs look like?
8. Who were the owners of the tombs?
9. How were the tombs made and who made them?
10. How did the Nabataeans bury the dead?
11. What was daily life like in Hegra?
12. Did the Nabataeans have their own language and script?
13. Were there Romans in Hegra?
14. Was Hegra a trade hub?

AlUla exhibition

The AlUla, Wonder of Arabia exhibition, at the Arab World Institute (IMA) in Paris, closed its doors on March 8th. Like many museums and temporary exhibitions, it suffered from the autumn strikes in the Paris transport system. The exhibition was nevertheless a success and received 110,000 visitors. Many VIPs requested visits with Laïla Nehmé, the co-curator of the exhibition. These include representatives of the Ministry for Foreign Affairs, the French Minister of Defense, Florence Parly, members of the Culture, education and communication Commission of the French Senate, members of the *Académie des Inscriptions et Belles-Lettres*, etc. The Paris-Centre CNRS delegation also organised its annual gathering at IMA and was given a tour of the exhibition. A complete press review was prepared by the Claudine Colin communication company. One of the most complete and most interesting articles on Hegra is the double page written by Pierre Barthélémy for *Le Monde* (see **Appendix 1**).

The exhibition, which displays many objects put to light during the excavations of the Saudi-French team (estimation about 70), is due to travel to the Hermitage Museum in Saint Petersburg, with an opening scheduled in March 2021.

Publications

English and Arabic versions of the Guide to Hegra

The preparation of the English and Arabic versions of the *Guide to Hegra*⁸ published in French in September 2019, more than 1,000 copies of which were sold, started almost immediately after the writing of the French version was finished. The translations into English and Arabic were done by Helen Knox and Chadi Hatoum respectively and their cost was borne by the Royal Commission

8. L. Nehmé 2019. *Archéologie au pays des Nabatéens d'Arabie. Guide de Hégra*. Paris: Maisonneuve & Larose Nouvelles éditions / Hémisphères.

science & médecine

Le Monde



Vestige de la cité nabatéenne d'Hégra, dans le nord-ouest de l'Arabie saoudite. YANN ARTHUS-BERTHOUD

Hégra, perle dévoilée d'Arabie

Ce site archéologique est à l'Arabie saoudite ce que Pétra est à la Jordanie : un témoignage creusé dans les falaises de la civilisation nabatéenne, qui rayonna sur la région pendant deux siècles. A l'occasion d'une exposition à l'Institut du monde arabe, visite de vestiges sublimes, qui fascinent toujours les scientifiques

PIERRE BARTHÉLÉMY
MADAIN SALIH (ARABIE SAOUDITE) - envoyé spécial

On va faire une minute de silence. La femme tout en dynamisme qui parle, Laila Nehmé, directrice de recherche au CNRS, est de ces personnes déterminées qui emportent beaucoup sur leur passage. Alors, quand elle demande le silence à la petite troupe de journalistes conviés sur le site antique d'Hégra par l'Institut du monde arabe (IMA) à l'occasion de son exposition sur la région d'Al-Ula, tout le monde s'assied à même la roche et se tait. Nous sommes dans le mahrameta, un lieu très particulier du site antique, un cirque naturel ceint de montagnes gréseuses qui, selon l'inclinaison des rayons du soleil, prennent des teintes jaunes, abricot, voire rougeâtres, comme partout à Hégra. L'endroit est presque clos. Partant du diwan – impressionnante salle taillée dans le rocher où, il y a deux mille ans, les membres d'une ou de plusieurs confréries religieuses se réunissaient –, seul un étroit défilé au sol recouvert de sable blond y conduit. Face à nous, une ouverture rectangulaire donne sur une citerne creusée dans la falaise. Lorsque se déclenchent les rares grosses pluies qui frappent en hiver cette région aride du nord-ouest de l'Arabie saoudite, deux canalisations elles aussi

découpées dans le roc recueillent l'eau dégoulinant de la montagne, la déversent dans la citerne et peuvent la remplir en une poignée d'heures.

Une atmosphère quasiment mystique
« On va faire une minute de silence », répète Laila Nehmé, sur un ton volontaire qui ne souffre pas la contestation, à l'adresse des retardataires qui flânaient dans le défilé. Le silence se fait, pour qu'on l'écoute. Une brise infime entre dans nos oreilles, quelques mouches vrissent, un oiseau s'envole quelque part au fond du cirque ; on ne bouge plus pour ne pas entendre ses vêtements se froisser ; on se retient de déglutir et presque de respirer ; on finit par percevoir l'atmosphère quasiment mystique du mahrameta, littéralement le « lieu sacré ». Le temps est comme suspendu.

Il faut le remonter par l'imagination pour comprendre Hégra et retourner au début de notre ère. Cela fait quelques décennies seulement que les Nabatéens s'y sont installés. Au départ, il s'agit d'un peuple de nomades. Au 1^{er} siècle av. J.-C., l'historien grec Diodore de Sicile, se référant à des sources bien plus anciennes, écrit d'eux qu'ils aiment passionnément la liberté et qu'ils ont pour coutume de ne pas semer de grains, de ne pas planter d'arbres fruitiers, de ne pas boire de vin et de ne pas construire de maisons ».

Même si leur origine géographique n'est toujours pas connue, il ne fait pas de doute pour Laila Nehmé qu'il s'agit d'un peuple arabe. « On peut l'affirmer pour plusieurs raisons. Tout d'abord, c'est ainsi que les présentent les sources anciennes et, pour elles, ce n'est pas une question de mode de vie mais plutôt une question de langue », souligne celle qui est à la fois archéologue et épigraphiste. Les Nabatéens écrivent en araméen, qui est la langue de communication internationale dans la région, mais parlent probablement un ancêtre de l'arabe actuel.

Plusieurs indices en témoignent, selon la chercheuse : « On retrouve fréquemment, dans leurs textes, l'utilisation de l'article arabe al, et ils empruntent aussi des mots à l'arabe, comme jabal, qui signifie "montagne". Même phénomène avec les noms propres, qui ont souvent une étymologie arabe. Sur-tout, on voit dans les documents juridiques que les termes légaux écrits en araméen sont suivis d'une traduction en arabe, pour que les gens comprennent bien les contrats qu'ils sont en train de signer ! » Dernier élément qui incite à planter les racines de ce peuple dans la péninsule, « dans la manière dont les défunts sont traités à travers leurs monuments funéraires, il y a des parallèles assez forts avec ce que l'on trouve en Arabie orientale. »

➔ LIRE LA SUITE PAGES 4-5

Nobel : de l'oxygène, juste assez, pour les cellules

En physiologie et médecine, deux Américains et un Britannique sont récompensés pour leurs travaux sur les mécanismes de régulation cellulaire de l'oxygénation des tissus.

PAGE 3



A Narbonne, la plèbe romaine avait sa nécropole

Des fouilles archéologiques mettent actuellement au jour un vaste complexe funéraire datant du 1^{er} au III^e siècle, qui accueillait les restes des défunts après incinération.

PAGE 2



Portrait Un « bibliste » à la tête du Collège de France

Thomas Römer, spécialiste de l'Ancien Testament, vient d'être élu administrateur de la prestigieuse institution.

PAGE 8

4 ÉVÉNEMENT

LE MONDE • SCIENCE & MÉDECINE
MERCREDI 9 OCTOBRE 2019



L'oasis d'Al-Ula et le sanctuaire de l'ancienne capitale du royaume de Dadan. Aujourd'hui, l'oasis est au centre d'un vaste projet multidisciplinaire auquel s'adjoint le développement touristique. (www.artsandsciences.org)

Sur les traces de la civilisation nabatéenne

► SUITE DE LA PREMIÈRE PAGE

Les Nabatéens ont gagné l'opulence grâce au commerce de l'encens et de la myrrhe, gommes aromatiques de luxe produites à partir de la résine d'arbres poussant dans ce que le monde antique appelait « l'Arabie heureuse », un territoire qui correspond au Yémen d'aujourd'hui. Sédentarisés au IV^e av. J.-C., ils contrôlèrent la route caravanière reliant le sud de la péninsule Arabique jusqu'à Pétra, dans l'actuelle Jordanie, dont ils ont fait la capitale de leur royaume. La route se poursuit au nord vers le port de Gaza, qui donne accès à tous leurs clients méditerranéens, notamment romains. « Les Nabatéens vivent en marge des grands royaumes », explique Laila Nehmé. Ils restent indépendants, développent l'agriculture, se diversifient, installent des comptoirs. Ils ne sont pas au centre des pouvoirs mais naviguent entre les uns et les autres, en offrant leur aide à certains, en concluant des alliances. »

Devenus riches et puissants, les Nabatéens poursuivent leur expansion vers le sud et s'ins-

talent sur le site d'Hégra au milieu du I^{er} siècle av. J.-C. Pourquoi ici ? L'emplacement est idéal à plusieurs points de vue. Géographique d'abord : la cité d'Hégra est sise dans une plaine au débouché nord de ce qui est aujourd'hui la vallée d'Al-Ula et de son oasis. La nappe phréatique contient d'abondantes réserves d'eau aisément accessibles grâce aux puits que les Nabatéens creusent par dizaines – on en dénombre plus de 130. L'autre intérêt du site est stratégique et commercial : Hégra constitue un passage obligatoire pour les caravanes des aromates.

Mais Laila Nehmé subodore une raison supplémentaire pour expliquer l'implantation de la ville à cet endroit : « C'est une hypothèse liée au développement du transport maritime en mer Rouge. Les bateaux qui la remontent en partant du sud de l'Arabie finissent par rencontrer des vents de nord-ouest et des courants contraires. Ils sont obligés de décharger leur cargaison dans un port dont on connaît le nom grec, *Leuké Komé* – "le village blanc" –, mais qui n'est toujours pas identifié avec certitude. On sait simplement que, dans ce port, les Nabatéens ont à leur service un centurion qui prélève une taxe de 25 %

sur les marchandises... » Une fois déchargées, celles-ci traversent la montagne côtière à dos de dromadaire jusqu'à retrouver la traditionnelle piste caravanière... du côté d'Hégra.

À la table des Nabatéens

Grâce à l'aqueduc dans lequel ils puisent, les Nabatéens créent leur propre oasis. L'archéobotaniste Charlène Bouchaud a analysé des milliers de restes végétaux retrouvés dans les sédiments prélevés par la mission archéologique franco-saoudienne qui travaille sur le site depuis 2002. Elle a ainsi reconstitué le système agricole de la cité et, sans surprise, c'est le palmier-dattier qui domine le paysage. Rien de lui n'est perdu : ses fruits sont consommés, tandis que son tronc et ses palmes servent de combustible. En revanche, les fragments de bois retrouvés dans des tombeaux, que ce soient des planches ou des chevilles pour les cercueils, des éléments de décor ou bien des objets tels que des bols ou des peignes, proviennent des essences poussant naturellement dans la région, notamment le tamaris. D'autres arbres fruitiers sont cultivés à Hégra : Charlène Bouchaud a ainsi identifié des graines

de figue et de grenade, des pépins de raisin et des noyaux d'olive. À la table des Nabatéens, on mange des produits céréaliers à base de blé ou d'orge et des légumineuses (pois, lentilles). Les habitants d'Hégra réussissent même à cultiver du coton, plante pourtant gourmande en eau.

Dans le livre qu'elle vient de consacrer au site, *Archéologie au pays des Nabatéens d'Arabie* (Maisonneuve & Larose/Hémisphères Éditions, 224 p., 26 euros), Laila Nehmé atteste : « Les zones habitées elles-mêmes, la vie quotidienne des habitants, leurs déplacements, leurs tâches et les objets qu'ils utilisaient pour vivre se laissent difficilement appréhender. » De la ville antique, rien ne subsiste en surface. Pourtant, sous le sable, elle est bien là. Il faut, par la pensée, concevoir une cité qui occupe une cinquantaine d'hectares, entourée par un rempart de 3 kilomètres de long. Il faut imaginer des îlots d'habitation, des maisons de brique pour la plupart, au sol généralement en terre battue. Et il faut compléter le tout par un grand sanctuaire inscrit dans la ville.

Le monde des vivants se laisse à peine deviner. Celui des défunts en impose. Tout autour de la ville ont fleuri des nécropoles, une centaine de tombeaux de prestige avec des façades monumentales taillées dans les montagnes ou dans les grandes chioches de grès qui, ayant résisté à l'érosion, émergent encore du désert. Dans la mort, celui ou celle qui comptait dans la vie de la cité laisse sa marque pour l'éternité.

UN CORRIDOR AUX 7 000 ANS D'HISTOIRE

Dans la grande campagne de promotion que vient de lancer l'Arabie saoudite pour accompagner l'ouverture du pays au tourisme, le site nabatéen d'Hégra joue les fers de lance, avec le côté « perle du désert » que lui confèrent son cortège de tombeaux monumentaux et son inscription, en 2008, sur la liste du Patrimoine mondial de l'Unesco. Pourtant, comme le rappelle l'exposition « Al-Ula, merveille d'Arabie », qui ouvre ses portes à l'Institut du monde arabe, la région d'Hégra est riche d'un héritage culturel qui va au-delà des deux petits siècles où les Nabatéens ont dominé le secteur, et l'on y trouve d'autres joyaux, plus anciens pour nombre d'entre eux. Ainsi, avant même que la péninsule Arabique n'entre dans l'histoire, bien avant aussi que son animal totem, le dromadaire, ne soit domestiqué, des groupes humains nomades empruntaient le corridor naturel où trône aujourd'hui la ville moderne d'Al-Ula, passage obligé entre deux massifs montagneux. C'était il y a au moins 7 000 ans. Comme à Hégra, le témoignage de ces peuples du néolithique

est essentiellement funéraire. Construits avec soin, plusieurs centaines de cairns se retrouvent souvent sur les points culminants. Comme l'écrit dans le catalogue de l'exposition, Wael Abu-Azizeh, du laboratoire Archéorient, « ils forment des nécropoles qui semblent être une manière d'exprimer une revendication accrue sur un territoire et, ainsi, son contrôle, voire son appropriation ».

Exposés pour la première fois Plus tard, au I^{er} millénaire av. J.-C., les royaumes de Dadan puis de Lihyan prennent possession du corridor d'Al-Ula. Même si elles n'ont pour le moment concerné qu'une petite partie du site, les fouilles menées à Dadan ont déjà mis au jour des éléments sculptés, dont plusieurs sont exposés pour la première fois hors d'Arabie : des statues d'hommes plus grandes que nature, où la musculature s'avère imposante si ce n'est exagérée, mais aussi l'étonnant bas-relief d'une lionne allatant un de ses petits ou encore une multitude de petits ex-voto.

Dans le parcours chronologique qui a été retenu par les commissaires de

l'exposition, les archéologues Laila Nehmé et Abdulrahman Alsulhailani, c'est logiquement Hégra qui succède à Dadan. L'accent est mis sur les pratiques funéraires des Nabatéens, notamment grâce à deux animations pédagogiques, la première montrant comment, en moins d'un an et avec peu d'hommes, les tombeaux étaient réalisés : partant du haut de l'édifice, les ouvriers et les sculpteurs aménageaient une plate-forme sous leurs pieds, qui descendait avec eux au fur et à mesure qu'ils dégagaient la façade de la montagne, ce qui éparpillait la construction d'un échafaudage. La seconde animation montre la préparation du corps des défunts.

La chronologie fait ensuite défiler les époques romaine, islamique, ottomane, pour en arriver à l'ère contemporaine, avec les témoignages des habitants actuels, que ce soit celui d'un apiculteur de la vallée ou celui d'Ahmed Alimam, dont les parents ont vécu dans la vieille ville d'Al-Ula avant son abandon définitif en 1980, et qui met un point d'honneur à en transmettre l'histoire, les us et les coutumes. Il explique ainsi comment, dans

les temps anciens, une sorte de fronton, la *tantoura*, en projetant son ombre jusqu'à un caillou planté dans le sol, signalait le solstice d'hiver et le début de certains travaux agricoles dans l'oasis.

Parmi les nombreux films tournés par le réalisateur et photographe Yann Arthus-Bertrand, qui restituent l'ambiance des sites, et en particulier la solennité naturelle des montagnes et du désert, il faut signaler un « time-lapse », film qui déroule en accéléré une journée au bord de l'oasis, de la nuit qui précède l'aube à celle qui suit le crépuscule. Sans doute les humains s'y agitent-ils comme des fourmis au rythme de leur vie, mais quatre couleurs, quatre bandes horizontales, restent intangibles et disent, mieux que tout discours, la vérité d'Al-Ula : le blanc du sable, le vert de la palmeraie, le rouge des montagnes, le bleu du ciel. ■

P. B.

« Al-Ula, merveille d'Arabie. L'oasis aux 7 000 ans d'histoire ». Jusqu'au 19 janvier 2020, à l'Institut du monde arabe, Paris 5^e. marabe.org





APRÈS LE DÉPART DES ROMAINS, L'ÉCRITURE NABATÉENNE ÉVOLUE, AU IV^e SIÈCLE, POUR DONNER NAISSANCE À L'ÉCRITURE ARABE

tape-à-l'œil, sont moins « fréquentées ». L'une d'elles, découverte à la toute fin de la campagne de fouilles 2014, était même inviolée, cas unique à Hégra. Au départ, c'était juste une dune un peu trop proéminente... Une fois le sable dégagé, la nature du lieu n'a plus fait de doute, mais le temps manquait pour l'explorer. Alors l'équipe a refermé et la tombe et les bouches. Secret total sur la trouvaille. La sépulture, qui contenait vingt-sept squelettes, a été fouillée l'année suivante.

Le désert d'Arabie est bon pour qui s'intéresse aux morts. Le climat d'Hégra, nettement plus aride que celui de Pétra, conserve les tendons, les cheveux, voire la peau. Surtout, tout ce qui entoure le corps est préservé, ce qui a permis aux archéologues de reconstituer le rituel funéraire des Nabatéens. « Le corps est préparé chez le défunt, explique Laila Nehmé. Il est déshabillé puis enduit d'une substance qui est un mélange de résines et de corps gras. C'est une sorte d'embaumement sans éviscération, qui a pour but de retarder la décomposition. Le corps est ensuite enveloppé dans un premier linceul en laine très fine teinte en rouge. On applique une nouvelle couche d'onguent et on enveloppe le corps dans deux autres linceuls, en lin cette fois. Plus on s'éloigne du corps, plus le textile est grossier. Le quatrième linceul est en cuir, qui était parfois

décoré de coquillages. Enfin, le mort est placé dans un linceul de transport, lui aussi en pièces de cuir, qui est muni de poignées. Ce qui permet à quatre porteurs d'emmener le défunt jusqu'à sa tombe. »

En 106 de notre ère, Rome annexe la riche nabatéenne, apparemment sans grande opposition. Comme le précise Laila Nehmé dans son livre, « Les Romains ont attendu cinq ans avant d'annoncer l'annexion, et les monnaies qu'ils ont frappées pour commémorer l'événement portent la légende « acquise » et non « conquise » pour parler de la nouvelle province, ce qui plaide en faveur d'une annexion dans des circonstances relativement pacifiques. » Un fort romain est construit dans la ville, qui accueille la III^e légion cyrénéenne. Et c'est tout.

Ainsi que l'écrit, dans le catalogue de l'exposition de l'IMA, François Villeneuve, professeur à l'université Paris-1 et codirecteur de la mission archéologique à Hégra avec Laila Nehmé, « Il n'y a pas de trace de romanisation – ni voies pavées, ni plan régulier, théâtre ou forum, ni institutions romaines. (...) La qualité des maisons baisse et le décor de pierre des bâtiments nabatéens est progressivement recyclé, en désordre, comme matériau de construction. » Hégra devient une simple ville de garnison au bout du bout de l'Empire romain. Au IV^e siècle, des chefs arabes prennent le relais. C'est le moment où l'écriture nabatéenne évolue pour donner naissance à l'écriture arabe, ainsi que l'a démontré Laila Nehmé. Quelque temps après, au début du V^e siècle, la ville perd ses derniers habitants et capitule face au désert, à son vent, à son sable, aux mouches qui vrombissent, aux tamaris et aux acacias qui résistent à tout, au soleil couchant qui fait rougeoier les façades des tombeaux.

Dans le mahrameta, la minute de silence est terminée. Il est temps de revenir au moment présent. ■

PIERRE BAKTHÉLÉMY



A gauche : le « diwan », où se réunissaient des confréries religieuses, est situé à l'entrée du passage conduisant à un lieu sacré.
HUBERT RAUJET

En haut : les linceuls en cuir étaient munis de lanières tressées, qui permettaient de transporter le mort jusqu'à son tombeau.
MUSÉE D'ARCHÉOLOGIE ET DE PATRIMOINE POPULAIRE

En bas : inscription nabatéenne dans un sanctuaire : « Ceci est le tombeau qu'ont fait Kamkam (...) et Kulaybat, sa fille, pour elles-mêmes et leur descendance. »
LAILA NEHMÉ

LES SCIENTIFIQUES À LA CONQUÊTE DE L'OASIS D'AL-ULA

En 1326, sur la route de son premier pèlerinage vers Médine et La Mecque, reprenant l'antique route caravanière de la myrrhe et de l'encens, l'explorateur Ibn Battûta fait halte dans l'oasis d'Al-Ula. Il la décrit comme « un grand et beau village pourvu de palmeraies et bénéficiant d'une eau particulière, où les pèlerins résident quatre nuits, s'approvisionnent, lavent leur linge, déposent le surplus de nourriture et emmènent ce qui leur suffit ». Installée à l'endroit le plus étroit de la vallée, posée sur une nappe phréatique précieuse dans ce décor aride digne d'un western spaghetti, la bourgade est connue dans le monde arabe depuis des siècles. En réalité, l'occupation de l'oasis est beaucoup plus ancienne. À moins de 3 kilomètres au nord de la ville actuelle se trouvent les vestiges de la cité de Dadan, capitale du royaume du même nom entre le IX^e et la fin du VI^e siècle av. J.-C., puis du royaume de Lihyan, du V^e au I^{er} siècle av. J.-C.

Mise en valeur touristique

Ce sont ces trois millénaires d'histoire que vont, au cours des prochaines années, étudier une demi-douzaine de missions scientifiques lancées par la France, dans le cadre du partenariat franco-saoudien signé en avril 2018 par le président Emmanuel Macron et le prince héritier saoudien Mohammed ben Salmane. La structure née de cet accord, l'Agence française pour le développement d'Al-Ula (Afula), a certes pour objectif premier la mise en valeur touristique des sites de la région, mais elle s'est aussi donné comme but une meilleure connaissance de l'héritage naturel et culturel de la région. Cela commencera donc par « un projet de fouilles complet de Dadan », assure Jean-François Charnier, directeur scientifique de l'Afula.

« On veut mieux comprendre ce qui s'y passe au cours du I^{er} millénaire av. J.-C., explique-t-il. Quelles écritures ? Quelles dynasties ? Comment la transition entre les civilisations dadanite et lihyante s'effectue-t-elle ? Il y en a pour cent ans, car le site

n'a quasiment pas été fouillé ! » Les recherches pourraient même durer plus longtemps si l'on prend en considération que les travaux menés depuis 2004 n'ont exploré que 4 % de Dadan...

Autre point à élucider, souligne Jean-François Charnier : « On ne sait pas qui habitait dans l'oasis à l'époque où les Nabatéens, avec Hégra, quelques kilomètres plus au nord, dominaient la région », entre le I^{er} siècle avant et le I^{er} siècle après J.-C. « La fin du royaume de Lihyan a plus ou moins coïncidé avec l'apparition des Nabatéens, confirme Abdulrahman Alsubaibani, consultant pour l'archéologie et la préservation du patrimoine culturel à la Commission royale pour Al-Ula. Mais il est étonnant de constater qu'il n'y a aucune mention des Lihyanites dans les nombreuses inscriptions des Nabatéens qui, pourtant, parlaient de tout... »

L'oasis d'Al-Ula, grâce à laquelle tout existe dans le secteur, est quant à elle au centre d'un projet multidisciplinaire. « Il faut la comprendre pour la sauver, résume Jean-François Charnier. On ne peut pas envisager de développer le tourisme, de mettre de l'hôtellerie de luxe autour de l'oasis si elle dépérit. À l'heure actuelle, ce n'est plus vraiment une oasis, car elle fonctionne avec des pompes. Il faut rapidement acquérir des données pour savoir quelle est la consommation d'eau, qui préleve, où en est la nappe phréatique, comment elle se recharge... Parce que l'eau sera le vecteur essentiel du développement de la région. »

Tout va donc y passer : étude précise de la géomorphologie, des sédiments, de l'hydrologie. Mais aussi de la manière dont la structure agricole s'est mise en place dans la vallée, avec quelles plantes, quels systèmes d'irrigation. Sans oublier un volet anthropologique, car sans les hommes qui ont travaillé pendant trois mille ans à l'ombre des palmiers-dattiers, il n'y aurait pas aujourd'hui de grand projet touristique, il n'y aurait pas de jardin dans ce désert. ■

P. B. (AL-ULA, ARABIE SAOUDITE, ENVOYÉ SPÉCIAL)

for AlUla. Priority was given to the English version because the Arabic one, the most complicated to produce, will take more time. The translation was carefully checked and the page set up was done in spring 2020 by Art'air-éd. (<http://www.artair-edition.fr/>), the cost of the latter being borne by Afalula who also helped finding a publisher. The aim is to have the volume ready before the next Winter at Tantoora AlUla festival. As for the Arabic version, the first attempts of page set up started in May 2020 but the volume will not be published before the course of 2021.

English versions of the 2018 and 2019 reports

The decision to produce a volume combining the reports of the 2018 and 2019 seasons of the Madā'in Šālīḥ Project was taken, in the autumn 2019, in order to make all the contributions available in English, which is the project's working language. Indeed, some important contributions included in these two reports, which offer syntheses on particular kinds of material (Greek inscriptions, leather) or on the excavation of important monuments (the Nabataean temple in the residential area, IGN 132), had been initially written in French and were therefore not easily accessible to colleagues from Arabic countries and particularly from Saudi Arabia. Despite its relatively high cost, it is important to make scientific data available to as large a public as possible. Some of the texts were updated, the translation into English was done by Helen Knox, carefully checked, and a complete 210 page volume was produced and put online.

Pottery volume

Thanks to the help of Afalula, who agreed to provide her with a three year contract starting from June 2019, Caroline Durand, the project's pottery specialist, has started to work on the publication of the pottery from Hegra.

Other

Abu-Azizeh W., Delhopital N., Durand C., Fiema Z., Gerber Y., Nehmé L., al-Talhi D., al-Sabhan I., al-Hajri M., al-Musa M., al-Hariti K., al-Mothamy M., and Villeneuve F. 2020. "Report on the 2014 and 2015 Excavation Seasons in Some Areas at Madā'in Šālīḥ", *Atlat* 28: 745, pl. 1.1-1.14.

Fiema Z.T., Villeneuve F., and Bauzou T. 2020. "New Latin and Greek Inscriptions from Ancient Hegra", *Zeitschrift für Papyrologie und Epigraphik* 214: 179-202.

Three contributions to the proceedings of the Red Sea 9 conference were also submitted in 2020:
Nehmé L. "Land (and Maritime ?) Routes in and between the Egyptian and Arabian Shores of the Northern Red Sea in the Roman period".

Milon J., Bouchaud C., Lemoine M., Cucchi T., Millet M., Zazzo A., and Ruas M.-P. "Diffusion of Cotton in Northeastern Africa and Arabia: New Morphometric and Chronological Data".

Tourtet F., Intilia A., Gerber Y., and Durand C. "North-West Arabian trade networks in the 1st millennium BCE".

Analyses

On objects

The Madā'in Šālīḥ Archaeological Project is presently undertaking analyses on several groups of objects.

– The DNA analysis of the **40 human petrous bones** sent to prof. David Reich at Harvard in 2019 has yielded the first results. Unfortunately, the first 10 bones analysed did not contain any ancient DNA, which was disappointing.

– A project on the beginnings of date palm cultivation in the region of al-‘Ulā and on the evolution of date palm agrobiodiversity through time and its circulation from and to this region was launched in 2019 by Vincent Battesti (CNRS Paris) and Muriel Gros-Balthazard (NYUAD) with a grant from Afalula. In the framework of this project, permission was obtained from SCTH to analyse a **date** (a complete desiccated fruit) which had fallen from the date necklace 50240_L02, discovered among the burials in tomb IGN 117. This analysis will provide a glimpse into the 2,000 years old date palm diversity. The extraction of the DNA will be undertaken by Dr. Nathan Wales, at the University of York, UK. DNA sequencing and further analyses will be carried out by Muriel Gros-Balthazard at NYUAD.

– The bottom of six complete **pottery jars** was sent for analysis to the laboratoire Nicolas Garnier (<http://www.labonicolasgarnier.eu/actu.html>) in March 2020. These jars were put to light in front of tomb IGN 116.1, excavated in 2015. They all belong to the same type, which is characteristic of the local production of Hegra in the first century AD. They were part of the funerary offerings associated with the tomb. Since the tomb was not reused after the 1st century AD, the jars form a very homogenous collection. The results, which arrived in June 2020, show that some of them were made waterproof with pitch. They contained different kinds of products, both vegetal and animal (possibly date juice—to be confirmed through experimental archaeology, fermented fruit, and an animal fatty substance). Unfortunately, the analyses were polluted by the treatment applied to the jars after excavation (washing, storage into plastic, restoration) and this pollution interferes with the results. The analysis was initiated by C. Durand and funded by Afalula.

– A fragment of **alabaster vessel**, put to light in 2019, was also sent to the laboratoire Nicolas Garnier. It belongs to a small probably imported container which was perhaps used for aromatic products. It can be added to the group of alabaster fragments which have been analysed at the end of 2018 and which have yielded traces of resins of conifer but not much else.⁹ The 2018 results were not very successful, perhaps because they had been stored in plastic bags for too long. The 2019 one was put in aluminium foil immediately after having been unearthed. Despite this precaution, it was apparently polluted and yielded only very limited traces of resin of conifer, as did the previously analysed alabaster fragments. The analysis was initiated by C. Durand and funded by Afalula.

– The bottom of two **stone basins**, 61243 and 61244, were also sent to the laboratoire Nicolas Garnier. They were put to light in 2020 in the courtyard of a 3rd or 4th century house built inside the temenos of the Nabataean sanctuary IGN 132 (see Gazagne’s report fig. 44), at a time when the area was no longer used for religious ceremonies but for domestic or craft activities. The basins were used to store solid or liquid products. The results of the analyses show again the presence of a resin of conifer as well as traces of beeswax, traces of fermented fruit, and a strongly

9. Report by N. Garnier, *Analyse biochimique du contenu de six vases en albâtre*, February 2019.

heated fatty substance from a non-ruminant animal, perhaps used for waterproofing. The traces of beeswax may refer either to beeswax itself, to non or badly filtered honey or to comb honey.

– Finally, eight **C¹⁴ dates** were requested from the Centre for Radiocarbon dating in Lyon (UMR 5138, Archéométrie et Archéologie), from *loci* 46000, 61230, 61262, 61265, 61299, 61308, 66017 (plus 61267). Sample 46000 is a petrous bone found in the watch-post/tower tomb on top of Jabal Ithlib.

Soil analysis

Finally, a cooperation between Marc Ducouso, from the French Agricultural Research and International Cooperation Organization (CIRAD), and the Madā'in Šālīḥ Project was launched in 2020.¹⁰ The CIRAD is presently undertaking, with a funding from Afalula, a cartography of the soils in the region of al-'Ulā. A little more than 1000 points are being or planned to be measured, 27 of which are located within the Madā'in Šālīḥ site fence. These points are of particular interest because they correspond to places which have not witnessed any human activity for several decades. They will therefore make it be possible to compare the microbial environment of areas which have been exploited for both agriculture and pasture with others where no such activities took place in the last fifty years or so. In the framework of this cartography of the soils, which is a CIRAD initiative, the Madā'in Šālīḥ project examined the possibility of taking a series of **XRF measures at regular intervals along the southern wall of the Roman camp**, on the outside. These XRF measures aim at trying to find the **location of the dump** of the camp and/or of the city, which is likely to be located not far from the gate. The XRF measures the presence of 72 chemical elements from Mg to U, including phosphate. The latter being a relatively light element, the measures can be disturbed by air and water, which means that the samples have to be dried and pressed. A protocol was established and 80 stakes were placed at 5 m interval all along the southern wall of the camp



Fig. 29. Stakes placed at regular intervals south of the Roman camp.

10. I am grateful to Marc Ducouso for the information which follows.

(**fig. 29**), reduced to a 2.5 m interval on each side of the camp's main gate, in preparation for the measures due to be taken in March 2020. Unfortunately, due to the Covid-19 crisis, the March CIRAD fieldwork was cancelled but will hopefully take place in the autumn 2020 or later.

Other

Consultancy

Laïla Nehmé continued, over the year 2020, to provide expertise for various projects. These include:

- The **Ateliers Jean Nouvel** villas and resort project in the Wadi Shar'ān (for matters linked to water collection and storage, decorative patterns, and names);
- the **facial restitution** project launched by the Royal Commission for AlUla on the basis of the three skulls selected and examined by the project's anthropologist, Nathalie Delhopital;
- the one week long workshop organised by Afalula and RCU in November 2019 for the members of the **UNITWIN Network** "Culture, Tourism, Development", of Paris 1 Panthéon-Sorbonne University/Unesco.

Visits

As usual, the team received many visits, which are given below in chronological order:

- Former French president **Nicolas Sarkozy**, with Carla Bruni, Jean-Charles Decaut and other friends (**fig. 30**);
- Participants to the "**Hegra Nobel conference**" (**fig. 31**);
- **Audrey Azoulay**, Unesco general director;
- **Pierre Buhler**, President of the French Institute, ambassador in charge of France's cultural action abroad;
- **Afalula Board of directors**;



Fig. 30. Nicolas Sarkozy, Carla Bruni and friends visiting Madā'in Šālīḥ.



Fig. 31. Group photograph of the participants to the Hegra Nobel conference.



Fig. 32. French minister of finance, Bruno Lemaire, with members of his cabinet and Gérard Mestrallet, president of Afalula, visiting Madā'in Šālīḥ.

- Group of **French senators**, including the president of the finance commission, Vincent Eblé;
- French Minister of finance, **Bruno Lemaire** accompanied by members of his cabinet (**fig. 32**).

Difficulties faced by the project

Upon arrival, the team had to move from the Ḥijāz railway station buildings it used to occupy to other buildings in the station because the former were turned into either accommodation for police forces or offices for the Royal Commission for AlUla. The working, eating, and accommodation spaces of the team had therefore to be reorganised in emergency.

Due to the touristic development al-ʿUlā, prices increased considerably. This is particularly the case for the car rentals, which costed the project more than 6,000 € for one month.

Finally, at the end of the season, the project was informed that the Ḥijāz railway buildings would not be available any longer and that the team would have to move somewhere else. At the end of the season, all the project's equipment was loaded on two trucks to be stored in one of RCU's storage facilities. Considering the pressure on the real estate market and the prices now practiced in and around the city, it is not certain whether the project will be able to find a place to stay in at an acceptable price.

References

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Nehmé L. (ed.) 2015: *Les tombeaux nabatéens de Hégra*. Paris: Académie des Inscriptions et Belles-Lettres (Épigraphie & Archéologie, 2).

Reports of the Madā'in Ṣāliḥ project, downloadable:

2011: <http://halshs.archives-ouvertes.fr/>

2016: <https://hal.archives-ouvertes.fr/hal-01518460>

2017: <https://hal.archives-ouvertes.fr/hal-01804965>

2018–2019: <https://hal.archives-ouvertes.fr/hal-02869017>

The Sanctuary IGN 132

Damien GAZAGNE (Éveha)



Fig. 1. General plan at the end of the 2020 season, showing the location of the trenches and the areas that were surface-scraped.

Excavations in the area of outcrop IGN 132 began in 2010 under the supervision of L. Nehmé and were continued from 2016 by D. Gazagne. The aim of the fieldwork undertaken during the 2020 season was threefold:

- to expose the whole of the temenos wall and find the various access gateways;
- to expose the archaeological levels located in the centre of the sanctuary courtyard;

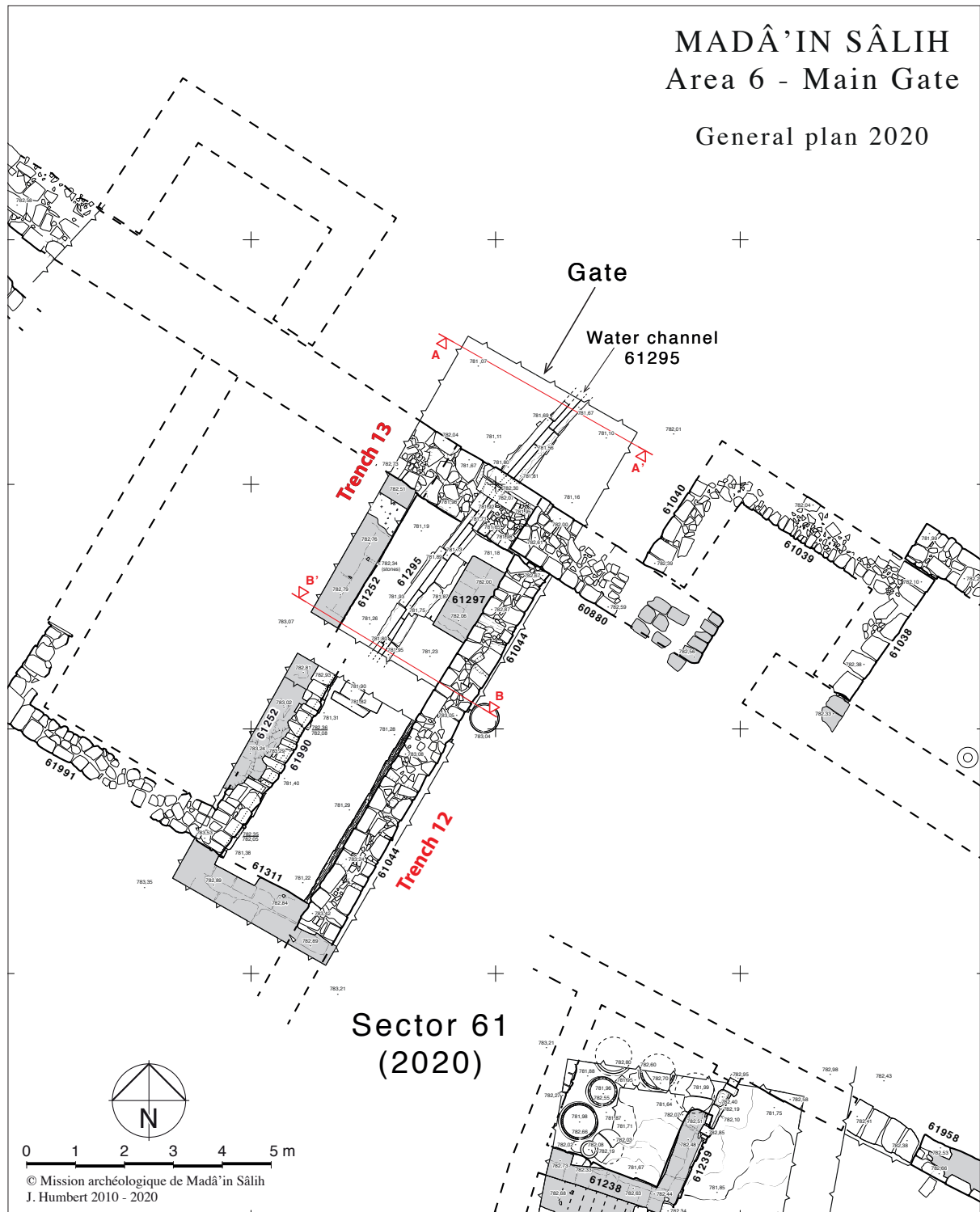


Fig. 2. Plan of Trenches 12 and 13 (including the first state of the water channel) and the location of the sections.



Fig. 3. *Trench 12: view of the north section.*

– to obtain a clearer and broader picture of the second and third architectural phases in order to understand their function and organization.

In order to reach these aims, the team was strengthened by five Saudi archaeologists.¹ Their contributions follow the present report.

For our part, the following trenches were opened:

– two deep trenches (Trenches 12 and 13) on the north side of the temenos wall, at the supposed location of the gate (**fig. 1**);

– two trenches (Trenches 10 and 11) in the centre of the courtyard of the lower terrace, after which surface scraping was carried out in the courtyard on the last wall lines visible on the surface. For their part, our Saudi colleagues opened three trenches at places where the temenos wall is interrupted (sectors 67 and 68), while a fourth trench (sector 66) was opened north-west of outcrop IGN 132, the suspected location of an entrance. Finally, excavation of well no. 132 was begun and two areas were subjected to surface scraping.

Trench 12

Trench 12 was opened in the southern half of the corridor that links the entrance to the courtyard. The relatively narrow space (2 x 4 m) is demarcated by two walls forming a corridor which links the entrance to the sanctuary courtyard (**fig. 2**). To the north, a 0.8 m-wide baulk was left to preserve evidence of the stratigraphic sequence. In total, a stratigraphic sequence measuring 1.80 m in depth was recorded (**fig. 3**). It can be divided into four main phases (**fig. 4**), described here from the most recent to the oldest.

Phase 4

The levels corresponding to the most recent phase, phase 4, range from 0.40 to 0.50 m in depth. They can be broken down into natural deposits, essentially aeolian in origin, with a sandy, light-

1. Ibrahim N. al-Sabhan, Abdulrahman Arafah, Mohammed al-Mathami, Saad A. al-Muqbil, and Maher K. al-Musa.

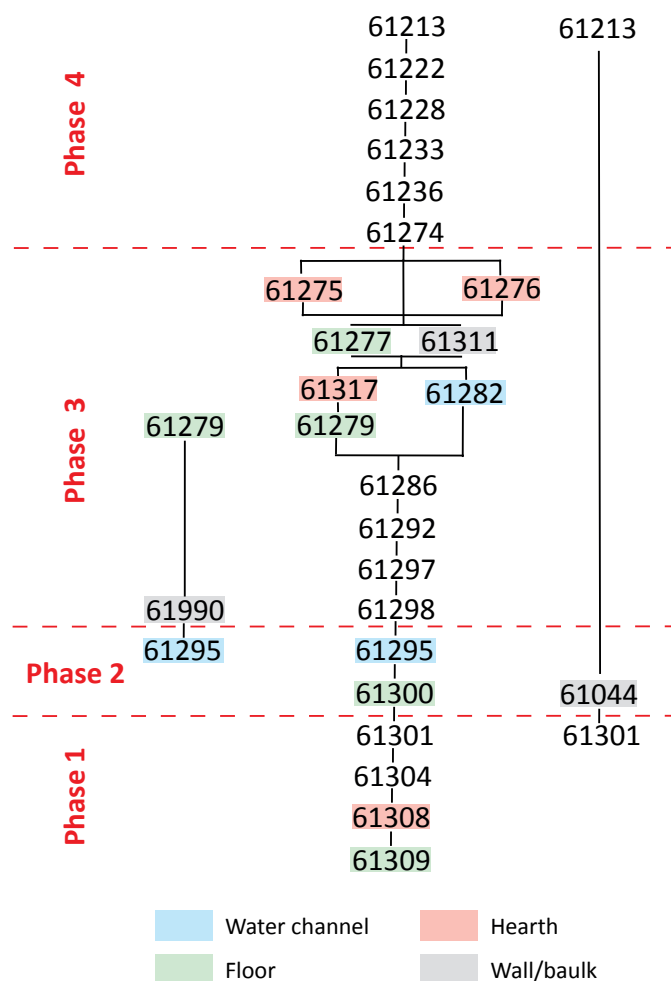


Fig. 4. Diagram of the stratigraphy of Trench 12.

beige matrix (contexts 61213 and 61222). They seal very indurated levels of abandonment and/or demolition containing disintegrated mud bricks, fallen carved stones, among which a lintel, and charred wood (contexts 61228, 61233, and 61274). A Latin inscription reused as mortar was discovered in level 61236 (fig. 5). According to P.-L. Gatier, inscription 61236_I01 concerns an offering to Jupiter Damascene made by soldiers originating from the Damascus region.² A comparison with the writing of one of the painted Latin inscriptions uncovered in the south-east gate of the city wall allows a dating between AD 161 and 211. Layer 61236 also yielded a Nabataean inscription, 61236_I02, inscribed on a broken block forming a mould at the back. The text reads *w'lw* (Wa'ilū) and on the second line, *----.ly{l}*.

Phase 3

Phase 3 corresponds to the final architectural and occupational phase of the corridor. In its most recent state, it is



Fig. 5. Level of abandonment 61236.

2. The publication of this inscription by P.-L. Gatier is in preparation.



Fig. 6. Occupation level 61277 and hearths 61275 and 61276.



Fig. 7. Fragments of a Latin inscription found lying flat on floor level 61279 (61279_I01).

first represented by occupation level 61277, a powdery floor, brown-ochre in colour. The latter has yielded important traces of occupation, namely two hearths, 61275 and 61276, as well as a significant group of finds comprising pottery and faunal remains (**fig. 6**). At this time, the water channel 61282 was already out of use and partially reused. It was probably dismantled after the installation of the small mud-brick platform 61311 which connects walls 61990 and 61044.

This is followed by levels associated with the water channel's second state (61282), namely, floor level 61279, a brown-ochre powdery layer, which has yielded significant traces of human occupation: pottery, faunal remains, and hearth 61317. Several fragments of a Latin inscription (61279_I01) were discovered lying flat on this level (**fig. 7**). According to P.-L. Gatier, it is a dedication addressed to a series of deities by soldiers or employees of the financial administration.³

3. See n. 2.



Fig. 8. Occupation level 61279 and the recovered southern part of the second state of the water channel 61282.



Fig. 9. East face of wall 61990.



Fig. 10. Phase 3: levelling backfill, wall 61252, and occupation level 61279.

Water channel 61282 was installed in level 61279. It is constructed of flat reused stones laid in a V shape. Given its poor construction, it was probably not covered. It allowed rainwater in the sanctuary courtyard to flow outside the temenos wall (**fig. 8**).

The construction of channel 61282 forms the final stage of the general redevelopment of the corridor which comprises several stages. It was preceded by the dismantling of the first state of channel, 61295, whose blocks are reused in the construction of the footing of wall 61990 (**fig. 9**). The latter was built in front of wall 61252, which it replaces. Its construction had the effect of reducing the width of the corridor to 1.80 m. A backfill of 0.30 to 0.40 m depth was then deposited over the whole of the surface of the corridor (contexts 61286, 61292, 61297, and 61298). This backfill covers both courses of the footing of wall 61252 and serves as a levelling for the installation of the occupation levels of phase 3 (**fig. 10**).

Phase 2

There are few preserved traces of levels belonging to phase 2, these having been destroyed during the redevelopment in phase 3. A few elements of channel 61295 were discovered in the northern part of the trench. These are lining blocks that were displaced and put to one side but not reused (**fig. 11**). The water channel is positioned on floor level 61300, a light-grey layer with a clayey-sandy matrix, which has yielded a lot of finds (pottery and faunal remains). Wall 61044 probably also belongs to this phase (**fig. 12**). A block, 61044_I01, bearing a Nabataean inscription and probably part of a funerary stela, has been reused (**fig. 13**). According to L. Nehmé, it reads *nmr{m/n?}*.

Phase 1

This phase is composed of a 0.20 m backfill homogeneously deposited all over the surface of the trench (contexts 61301 and 61304). It covers a floor or circulation level 10 cm deep, brown-grey in colour, lying directly on the rock (level 61309). A charcoal-filled hearth, *locus* 61308, was located in the north-east corner of the trench.⁴

Trench 13

Trench 13 was opened in the northern half of the corridor linking the entrance to the sanctuary's courtyard. The relatively narrow space (2 x 6.5 m) is demarcated by two walls forming a corridor leading to the sanctuary (see **fig. 2**). The total depth of the recorded stratigraphic sequence is 1.80 m (**fig. 14–16**). Identical to that of Trench 12, it can also be broken down into four main phases (**fig. 17**).

Phase 4

The phase 4 levels cover a depth of 0.40 to 0.60 m from north to south. The most recent layers comprise natural sand deposits of aeolian origin (contexts 61245 and 61249). They seal a 0.40 m-thick, very indurated abandonment or demolition level, consisting of disintegrated mud bricks (*locus* 61255). Three limestone slabs were found at the base of this level, lined up along

4. The radiocarbon date of a charcoal fragment from this *locus* is AD 132–340 (calibrated age, 2 sigma, 95,4% probability). All the samples from Madā'in Šālīḥ were analysed at the *Centre de Datation par le Radiocarbone*, Lyon-18164(Sac1-61795).



Fig. 11. Phase 2: displaced blocks from channel 61252 and occupation level 61300.



Fig. 12. West face of wall 61044.



Fig. 13. Nabataean funerary stela 61044_I01 reused in wall 61044.

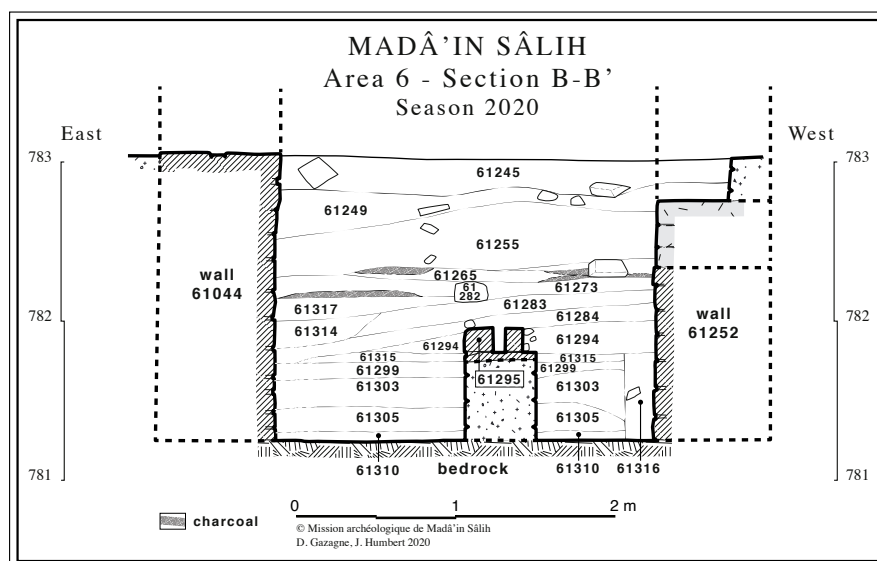


Fig. 14. Section B-B', southern end of Trench 13 (cf. fig. 2).



Fig. 15. Photograph of section B-B', southern end of Trench 13.

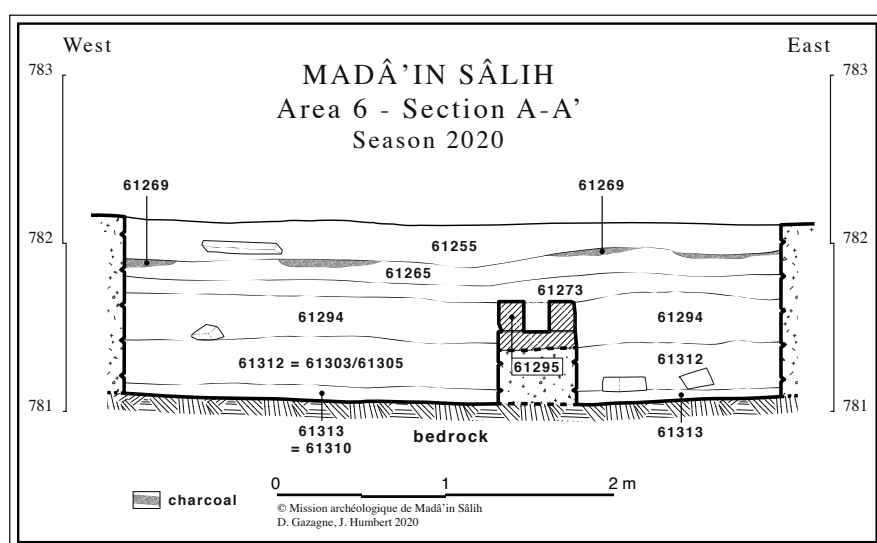


Fig. 16. Section A-A', northern end of Trench 13 (cf. fig. 2).

wall 61044 (fig. 18). They were not *in situ* but as one of them bears a pivot-hole (fig. 19) they may have belonged to a state of the gate's threshold.

North of the trench, the blocks of wall 60880 were subject to internal and external robbing by means of robber trench 61261. This trench stretches over a length of 1.8 m in a north-westerly

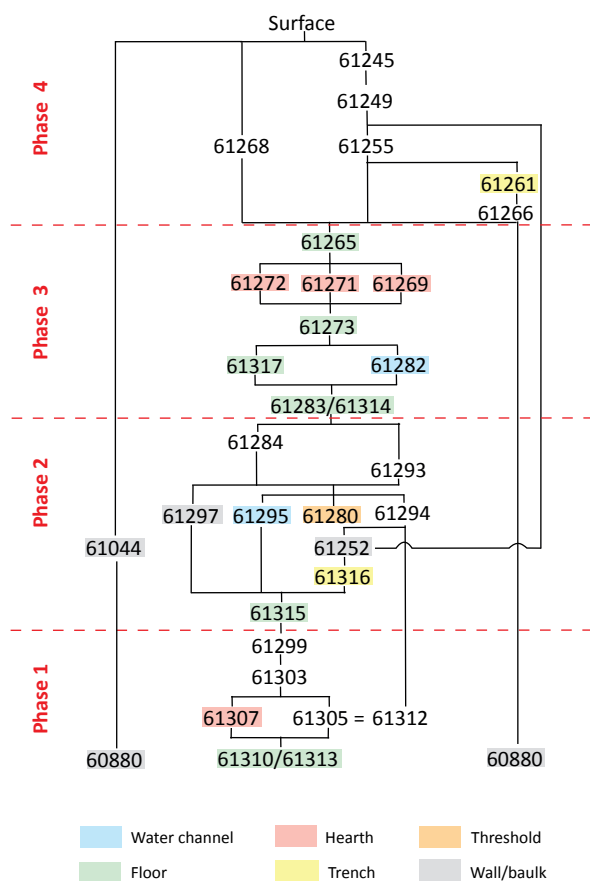


Fig. 17. Diagram of the stratigraphy of Trench 13.



Fig. 18. Stone slabs 61251.



Fig. 19. Pivot-hole in one of the slabs (61251).



Fig. 20. *Volutes of ionic capital.*

direction. Its fill (*locus* 61266) has yielded a fragment of volute from an ionic capital belonging to the doorframe (**fig. 20**).



Fig. 21. *Occupation level 61273 and the hearths or ashy residue.*

Phase 3

Phase 3 corresponds to the most recent occupation phase of the corridor. In its final state, it is represented by floor level 61265, which has a powdery texture and is brown-ochre in colour.⁵ This level corresponds to a refill of floor 61273/61317, 0.10 to 0.25 m thick, powdery, and brown-ochre in colour. The floor has yielded numerous traces of occupation: pottery, faunal remains as well as three hearths, or hearth waste (contexts 61269, 61271, and 61272; **fig. 21**).

This is followed by the occupation levels contemporaneous with the second state of the water channel (*locus* 61282). Preserved over its whole length, channel 61282 is built of small reused stones laid in a V shape. As in Trench 12, it was probably not covered. On reaching the gateway, duct 61282 meets the first state of the channel (61295) and merges with it. It is probably during this phase that threshold 61280 was slightly raised when the threshold stone was

5. The radiocarbon date of seeds from *locus* 61265 is AD 255–420 at 2 sigma.



Fig. 22. Channel 61282 and the doorway.



Fig. 23. Detail of the south section of Trench 13: foundation trench 61316 of wall 61252.



Fig. 24. East face of wall 61252.

rotated. The water channel rests on floor 61283/61314, an indurated level, light grey in colour with a clayey matrix (**fig. 22**).

Phase 2

The upper part of this phase is marked by a 0.10 m-thick refill between the two states of the water channel (contexts 61284 and 61293). The first state of the channel (61295) is positioned in level 61294 with which it functions. The channel is composed of reused carved stones (including several elements from a doorframe) laid in a U shape. A small mud-brick platform (61297) was built along wall 61044. The channel rests on floor 61315, a 5 cm-thick level, grey in colour with a sandy matrix. It is cut through by foundation trench 61316 of wall 61252 (**fig. 23**). This wall is composed of a stone base topped with mud bricks (**fig. 24**). The construction of wall 61044 should probably be linked to this phase, although the stratigraphy is less clear on this side because the section is difficult to interpret (**fig. 25**). It is also probably at this time that the gate was broken through in the temenos wall 60880. On the exterior face of wall 60880, there is a marked difference in construction in the second course, on either side of the entrance, which could indicate that the wall was rebuilt (**fig. 26**).



Fig. 25. West face of wall 61044.



Fig. 26. Exterior face of temenos wall 60880 near the gateway.

Phase 1

This phase, which dates before the gateway, is marked by a levelled refill 0.40 m in depth (contexts 61299,⁶ 61303, and 61305/61312), followed by a fine 0.10 m-thick floor level resting on the bedrock and found on either side of the temenos wall (contexts 61310 and 61313). Inside the sanctuary, this level has yielded significant traces of occupation: pottery, faunal remains, and hearth 61307.

Trench 10

Measuring 5 x 5 m, Trench 10 was opened in the courtyard of the sanctuary's lower terrace (fig. 27). A stratigraphic sequence measuring a total of 1.30 m in depth was recorded (fig. 28). It can be broken down into four main phases (fig. 29).

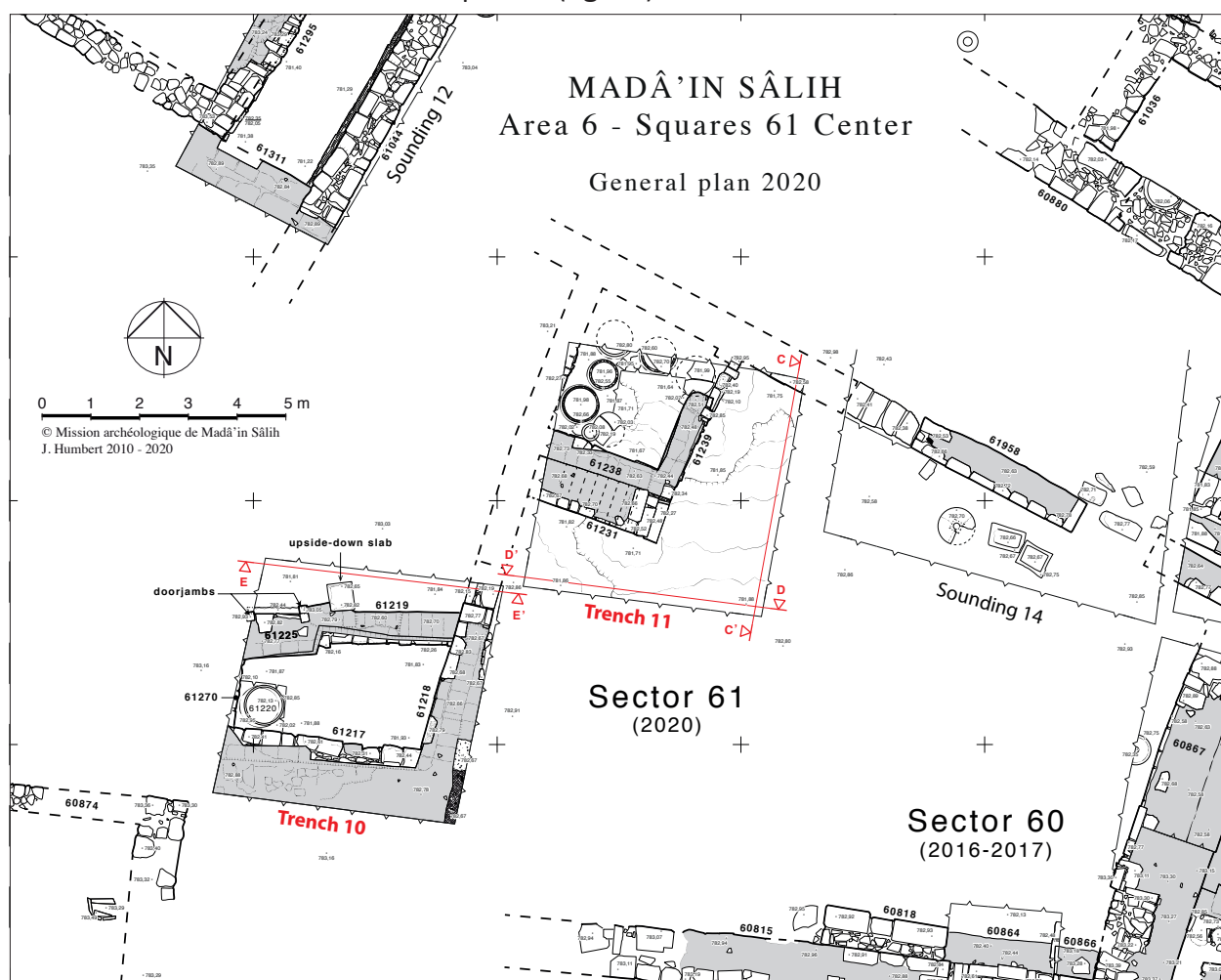


Fig. 27. Plan of Trenches 10 and 11 and location of the sections.

Phase 4

The final phase of Trench 10, phase 4, comprises levels of varying depths, from 0.2 m to the east to 0.5 m to the west. Context 61225, stretching over the western half of the trench, consists of disintegrated and indurated mud bricks caused by the distortion and collapse of the surrounding

6. The radiocarbon date of a charcoal fragment from *locus* 61299 is AD 210–353 at 2 sigma. One would have expected an earlier date since this *locus* is attributed to Phase 1. The date might however not be fully reliable, either because it falls in the 5% error of the ¹⁴C or because it comes from a refill.

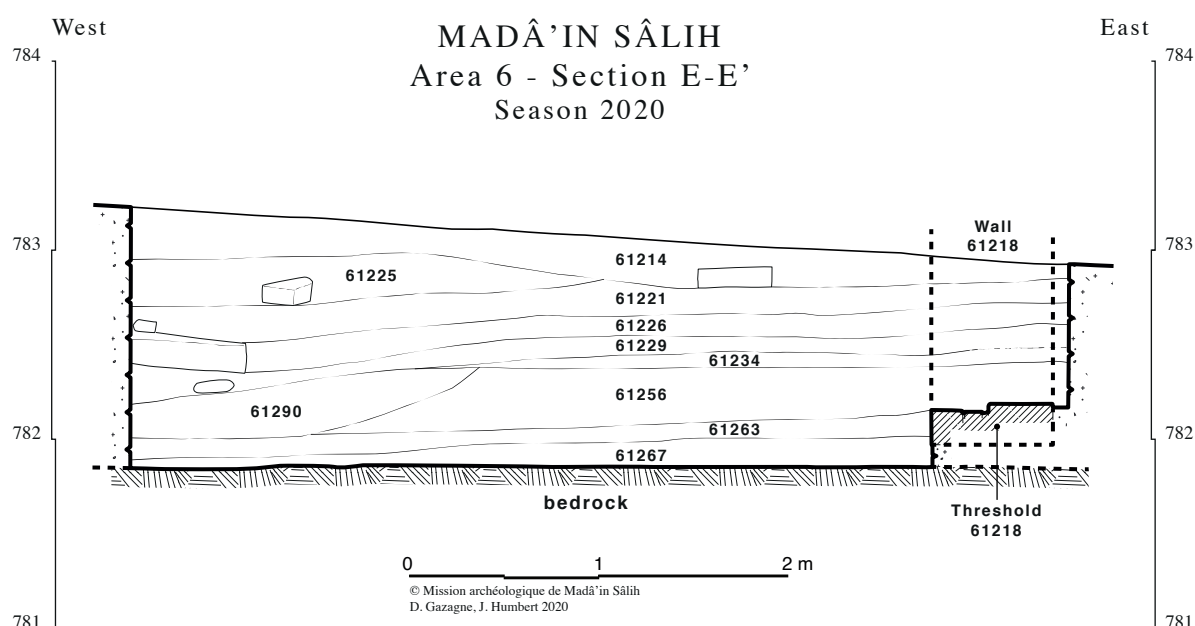


Fig. 28. Section E-E', northern end of Trench 10.

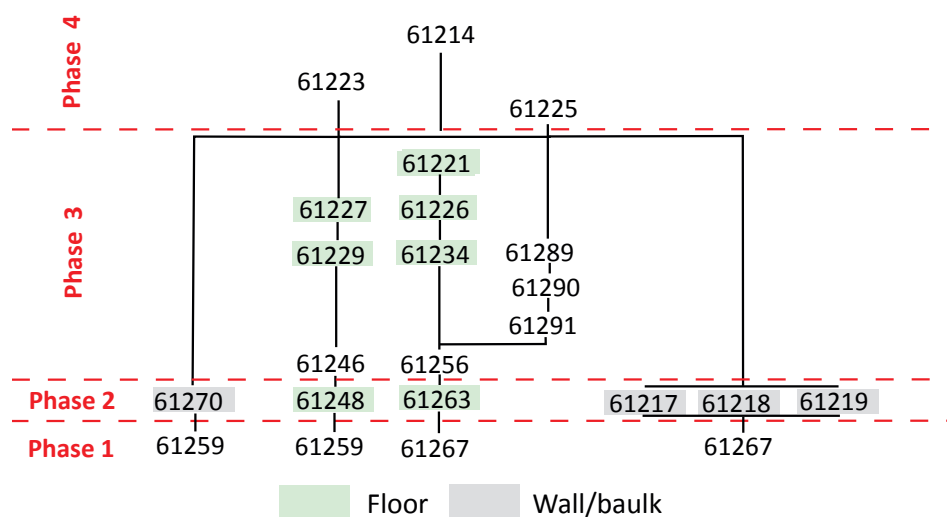


Fig. 29. Diagram of the stratigraphy of Trench 10.

masonry. It is sealed by level 61214, a level of abandonment composed of natural sand deposits, probably brought in by the wind.

Phase 3

This phase marks the final occupation of the area and is characterized by a succession of floor and occupation levels stretching over a depth of 0.40 m and connecting with pre-existing constructions (phase 2), namely a courtyard and a roofed room (fig. 30). The courtyard provides access to two, possibly three, rooms. The late courtyard levels (contexts 61227 and 61229) consist of layers of sand and dried mud, indicating exposure to adverse weather. There are no signs of clearing or cleaning attesting to a lack of maintenance. The occupants' constant movements created a rut in the centre of the courtyard, which helps to understand how the rooms were organized, to the north and east of the courtyard. Two doors opened in walls 61218 (east) and 61219 (north) confirm the layout. It is also clear that the courtyard's western wall (61270), where the stone



Fig. 30. Trench 10: occupation levels of phase 3.



Fig. 31. Trench 10: modification at the beginning of phase 3.



Fig. 32. Trench 10: the courtyard of phase 2 viewed from the east.



Fig. 33. South face of wall 61219.

basin is located, has no openings. There is still some doubt about wall 61217, which might have a blocked doorway. In the northern part of the trench, levels belonging to a roofed room were excavated over a small area. Floor levels 61221, 61226, and 61234, each 0.10 m thick, consist of a powdery, sandy matrix, brown-ochre in colour. They have yielded a significant amount of pottery and faunal remains.

The next sub-phase marks the modification of the sector between the two main occupation phases (phases 2 and 3). It is characterized by a levelling backfill, 0.20 to 0.30 m thick, laid over the levels of phase 2 (**fig. 31**). In the north of the trench, the backfill in the roofed room is labelled 61256. In the courtyard, it corresponds to level 61246 where fallen stone blocks and a broken basin belonging to the preceding phase can still be found.

Phase 2

This is the main architectural phase of the trench. It is characterized by the construction of four walls demarcating a small, rectangular atrium-type courtyard (**fig. 32**). The walls are all situated on the same level (contexts 61267 and 61259).⁷ The masonry consists of a projecting wall footing consisting of one to three stone courses topped with mud bricks (**fig. 33**). Wall 61218 contains a number of reused blocks (**fig. 34**). The south-east corner of the courtyard is occupied by a monolithic basin carved in sandstone and positioned on floor level 61248. Wall 61219 originally had a doorway in its western end; this is indicated by the stone doorjambes still *in situ* (**fig. 35**). It was blocked by the small platform 61225 during phase 3 and moved to the centre of wall 61219.⁸ A floor level is attested in the northern part of Trench 10. It runs along wall 61219 and abuts the threshold of the door in wall 61218 (context 61263).

7. The radiocarbon date of a charcoal fragment from *locus* 61267 is AD 245–402 at 2 sigma.

8. Levels 61289 and 61290, located in the north-west corner of trench 10, are probably associated with the blocking of the doorway.



Fig. 34. *East face of wall 61218.*



Fig. 35. *Wall 61219: blocked doorway.*

Phase 1

These levels, pre-dating the construction of the phase 2 building, consist of a backfill 0.10 to 0.25 m thick, beige in colour with a sandy-clayey matrix containing large (5 cm) pebbles. Identical levels can be found in the neighbouring trench (no. 11, see below), which also lack any construction. This could indicate that during the first phase, the central part of the sanctuary was occupied by a courtyard.

Trench 11

Measuring 5 x 5 m, Trench 11 was opened in the courtyard of the sanctuary's lower terrace, north-east of Trench 10 (see **fig. 27**). A total stratigraphic sequence of 1.30 m in depth was recorded, identical to that of Trench 10 (**fig. 36–39**). It can be broken down into four main phases (**fig. 40**).

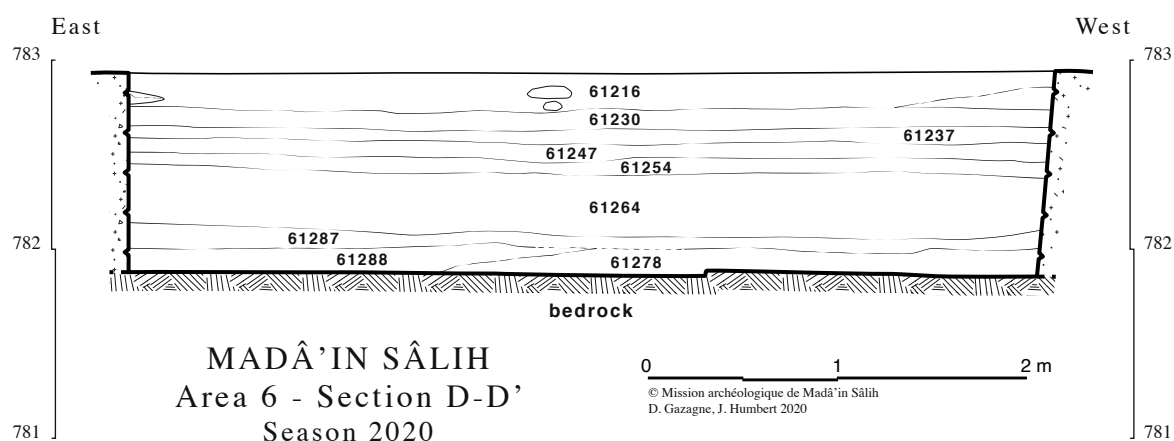


Fig. 36. Section D-D', southern end of Trench 11 (cf. fig. 27).



Fig. 37. Photograph of section D-D', southern end of Trench 11.

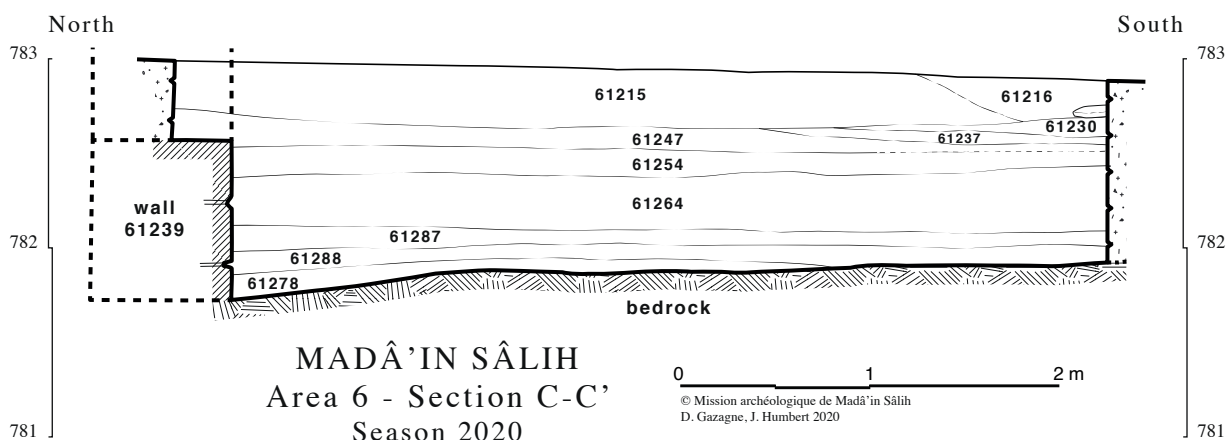


Fig. 38. Section C-C', eastern end of Trench 11 (cf. fig. 27).

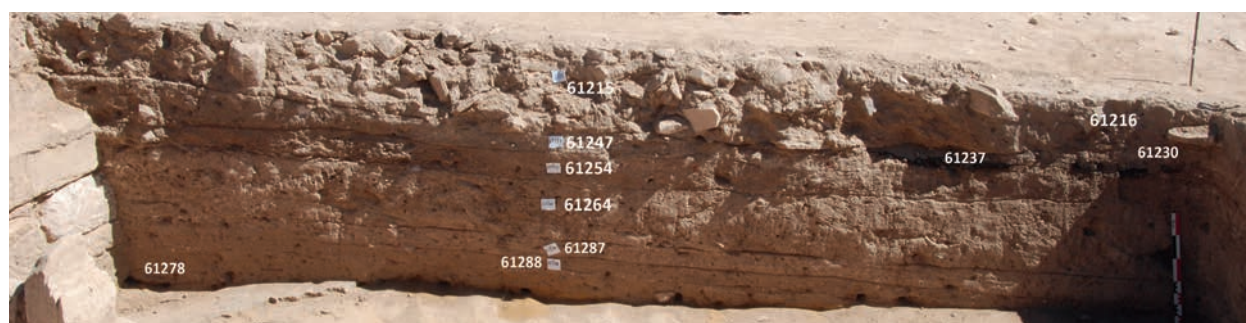


Fig. 39. Photograph of section C-C', eastern end of Trench 11.

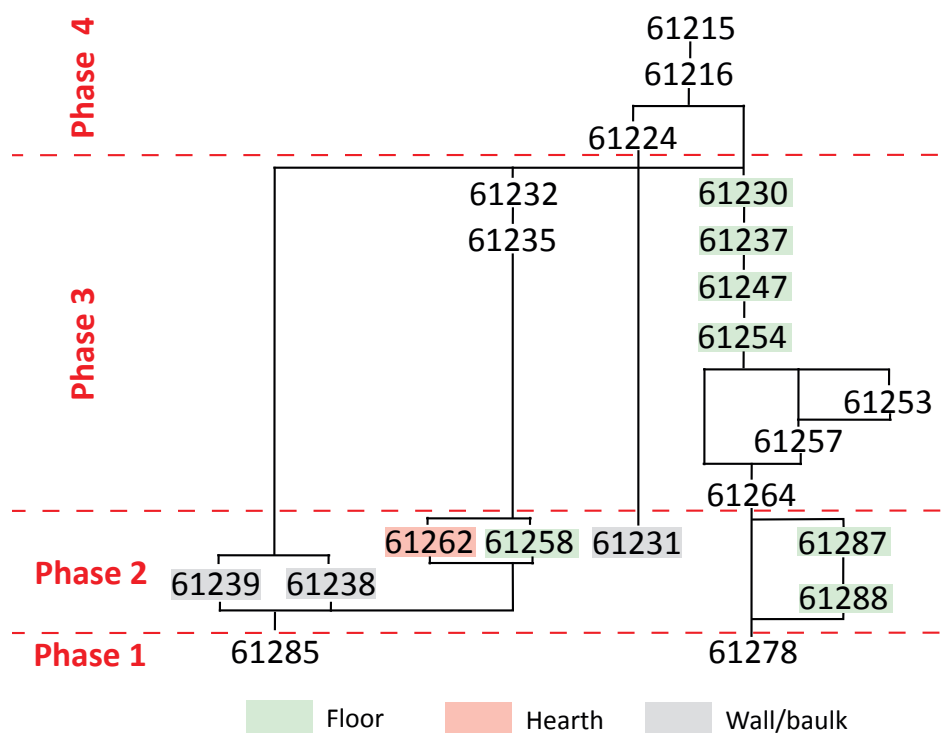


Fig. 40. Diagram of the stratigraphy of Trench 11.

Phase 4

This final phase comprises demolition and abandonment levels stretching over a depth of 0.20 to 0.40 m from west to east (contexts 61215, 61216, and 61224). The final occupation levels (belonging to the previous phase) are sealed by scree (61215) homogeneously covering the whole of the trench (**fig. 41**).

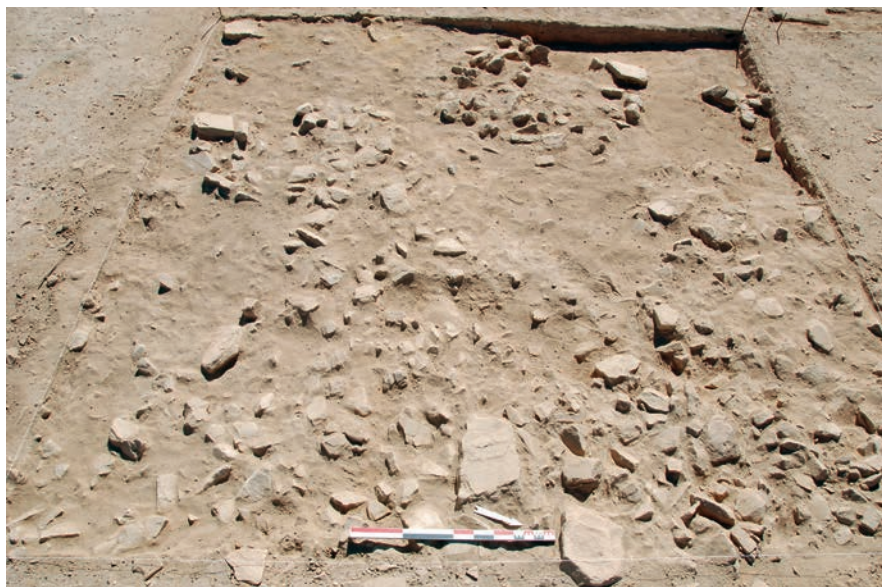


Fig. 41. Trench 11: scree sealing the late occupation levels.

Phase 3

The late occupation levels consist of a succession of floor and refill levels, stretching to a depth of 0.40 m over the whole area of the trench. As for Trench 10, differences in texture, colour, and



Fig. 42. Trench 11: backfill 61264 during excavation, exposing the levels of abandonment of phase 2.

density of the occupation levels are used to identify the living spaces. In the north-east quarter of the trench a small area, measuring 2 x 2 m and demarcated by walls 61238 and 61239, could be identified as a small, atrium-type courtyard. The late levels excavated here favour this hypothesis: there is a succession of thin layers alternating between a layer of sand and a layer of dried mud (context 61232). These layers would indicate that the area was exposed to periods of adverse



Fig. 43. Trench 11: quarter of a Nabataean capital found in situ in level 61257.

weather and was not regularly maintained (clearing and cleaning of the courtyard levels). The courtyard, however, does not appear to have been abandoned. There is a depression in the centre that could have been caused by the movement of the occupants of the space.

The rest of the trench is occupied by a succession of very homogeneous floor and occupation levels (contexts 61230, 61237, 61247, and 61254).⁹ The levels are brown-ochre in colour, with a sandy matrix and a powdery texture. They contain significant traces of domestic occupation, such as pottery, faunal remains, and charcoal debris from a hearth. They are not stratigraphically associated with construction elements in Trench 11. This is therefore a reoc-

cupation of older buildings belonging to phase 2.

The following sub-phase is characterized by the modification of the sector between two main occupation phases (phases 2 and 3). A 0.30 m-thick levelling backfill (contexts 61235, 61253, 61257, and 61264) is spread over the levels of the preceding phase (**fig. 42**). This is a compact layer consisting of crushed mud bricks. The backfill was spread directly over the level of aban-

9. The radiocarbon date of a charcoal fragment from *locus* 61230 is AD 127–325 at 2 sigma.



Fig. 44. Trench 11: the levels of phase 2.

donment of the earlier occupation levels, as attested by the presence of basin fragments and the quarter section of a Nabataean capital (**fig. 43**).

Phase 2

This phase corresponds to the main architectural state of Trench 11 (**fig. 44**). It is characterized by the construction of a small, square courtyard, demarcated to the south and east by mud-brick walls 61238 and 61239. The limits of the courtyard to the north and west are not known but the presence of sandstone basins positioned against the walls to free up space for circulation gives a good idea of the size. During this phase, it is clear that the courtyard served as a storage area (**fig. 45**), notably indicated by the four monolithic sandstone basins, one of which still has a stone slab used as an improvised cover (structures 61241, 61242, 61243, and 61244). Samples from the bottom of two of the basins (61243 and 61244) were taken for chemical analysis and content identification.¹⁰ A stone mortar was also found at the foot of the basins. All these finds rest on level 61258, an indurated floor with a silty-sandy matrix, grey-brown in colour. The small hearth 61262, measuring 0.30 m in diameter, is located near the doorway.¹¹

The south-facing face of platform 61231, measuring 0.80 m wide, is constructed of numerous reused stones (**fig. 46**). In contrast, the interior masonry is built of mud bricks. At its eastern end, there are three steps which probably form the start of a staircase, the rest of which would have been made of wood. All the masonry is positioned on the same level (contexts 61278 and 61285) (**fig. 47**). Occupation levels 61287 and 61288 are concentrated in the eastern part of the trench and do not directly abut platform 61231 and wall 61238. The stratigraphy and altitude, however, would indicate that they functioned together. The matrix of these levels is silty-sandy, brown to brown-grey, and loose.

10. The results of these analyses, undertaken by laboratory Nicolas Garnier thanks to funding by Afalula, were obtained in June 2020. They report the presence in the two basins of beeswax as well as traces of conifer resin, a very minimal amount in 61243 but in greater proportions in 61244. Both these products could have been used for waterproofing. According to N. Garnier, it would appear that the basins were waterproofed several times without leaving any visible traces, because the material used might have contained a substance, such as water, that does not leave organic traces.

11. A 10-litre sample was taken for carpological analysis. The radiocarbon date of a charcoal fragment from *locus* 61262 is AD 242–401 at 2 sigma.



Fig. 45. Trench 11: storage room of phase 2.



Fig. 46. Trench 11: south side of platform 61231 and start of staircase at its eastern end.



Fig. 47. Trench 11: wall 61238 and staircase 61231 viewed from the east.

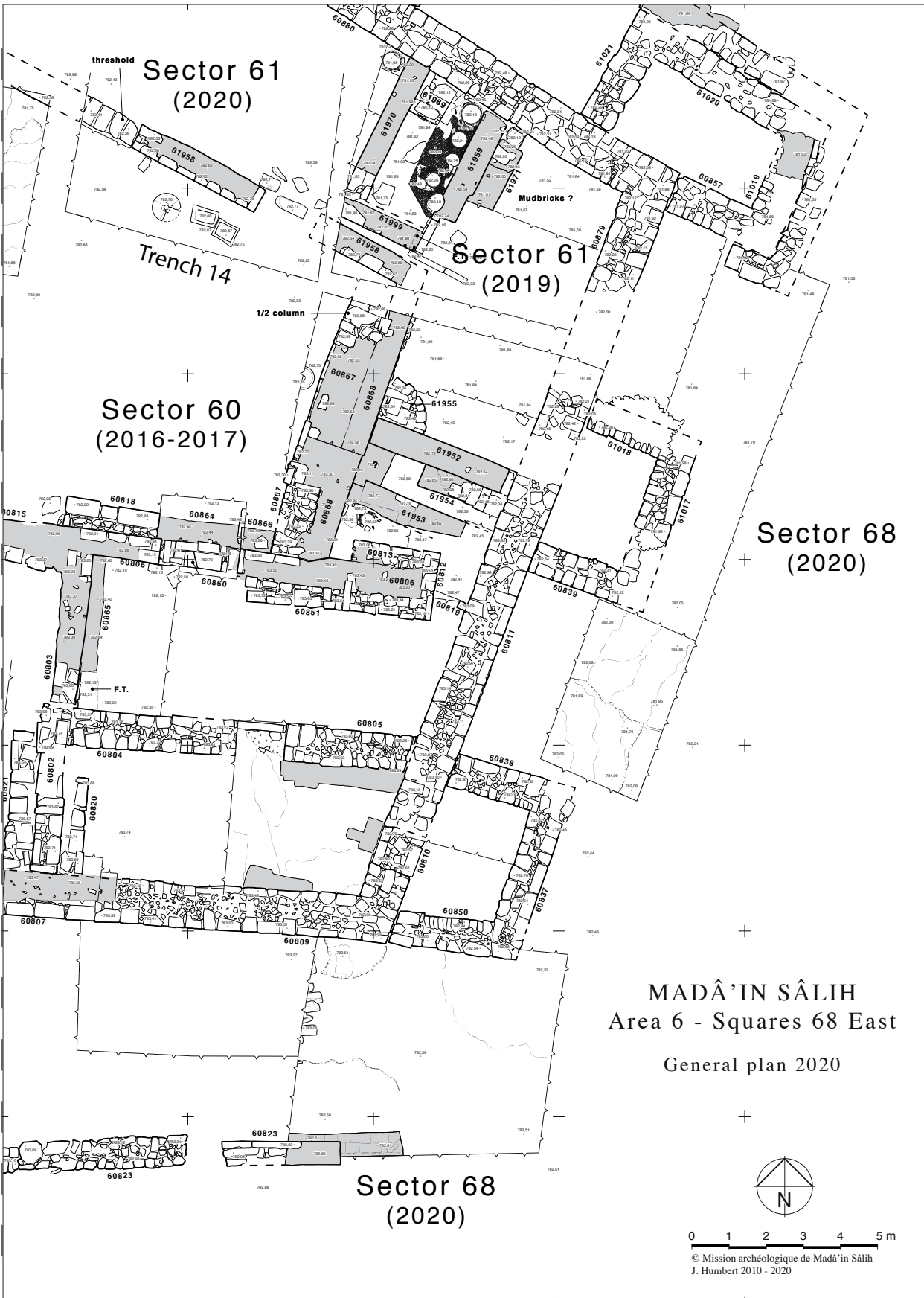


Fig. 48. *Plan of the remains exposed by surface scraping.*

Phase 1

The same observations can be made for this phase as for Trench 10. The first occupation levels of the sector consist of a backfill, 0.10 to 0.30 m thick, covering almost the whole of Trench 11 (contexts 61278 and 61285). In the south-east quarter of the latter, a rise in the level of the bedrock has caused its interruption. One can thus assume that it represents a levelling backfill used to smooth over the irregularities of the bedrock. The backfill consists of a grey sandy matrix, containing large (5 cm) pebbles. During phase 1 the area may have been a courtyard.

Surface scraping

Surface scraping covered an area measuring 50 m², located directly north-east of Trench 11. The proximity of this trench served as a guide during surface scraping and enabled us to speedily remove the final levels of abandonment and demolition in order to uncover the last levels of occupation (see **fig. 39**). Scraping has exposed a 7 m length of wall 61958 (**fig. 48–49**), which has a doorway recognizable by its threshold constructed of blocks laid as headers. A roller millstone, 0.85 m in diameter, was discovered in the final occupation levels (**fig. 50**). Its centre is pierced with a round millstone eye measuring 0.14 m in diameter. On one of the sides of the grinder the eye forms a square rabbet measuring 0.23 m on each side. This device enabled the sandstone grinder to be fixed to the wooden driving shaft around which it turned (**fig. 51**). Two stone trays discovered nearby collected the pulp from the grinder and delivered it to the processing and storage facilities.



Fig. 49. Sideways view from the south of the exposed remains.

According to Charlène Bouchaud, several oily plants found at Hegra could have undergone a grinding process: olives, cotton seeds, flax seeds, and grape seeds.¹² Several carpological samples taken since 2016 in the late occupation levels of the sanctuary will perhaps tell us which of them were ground.

12. Bouchaud 2015.



Fig. 50. View of the roller millstone.

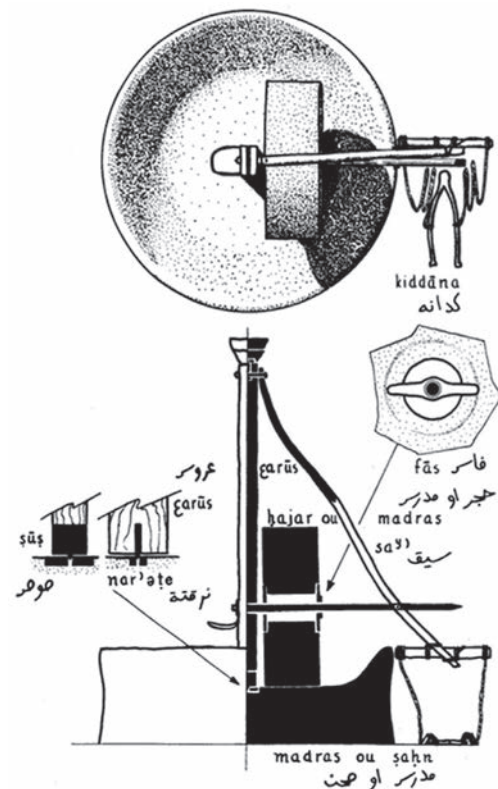


Fig. 51. Plan and sectional reconstruction of a grinder (Cresswell 1965: fig. 1).

The discovery of this grinder also sheds new light on the other craft facilities discovered in the sanctuary in previous years. The numerous monolithic sandstone basins distributed around outcrop IGN 132 could have been used for oil storage or processing. Water from the well might also have been utilized for oil processing. Chemical analyses were undertaken in 2020 on two storage basins (see n. 9).

The group of ovens discovered in 2019 in Trench 8 were probably fuelled by waste from the grinder. Carpological samples taken from the ovens and from their cooking chamber will perhaps provide an answer.

Conclusion

Fieldwork undertaken during the last four seasons has helped us to understand a significant section of the plan of the sanctuary and establish a solidly based chronology (**fig. 52**). At the completion of this fieldwork, it is possible to divide the history of the sanctuary into three main architectural phases followed by a general abandonment (**fig. 53**). These three main phases do not correspond exactly to the phasing we have observed in the trenches (some contain four phases) but we have deliberately chosen to keep the stratigraphic complexity and peculiarity of each trench.

Dating of each architectural phase is still in its preliminary stages and will need to be confirmed by the final results of the 2020 season pottery study and radiocarbon dating.

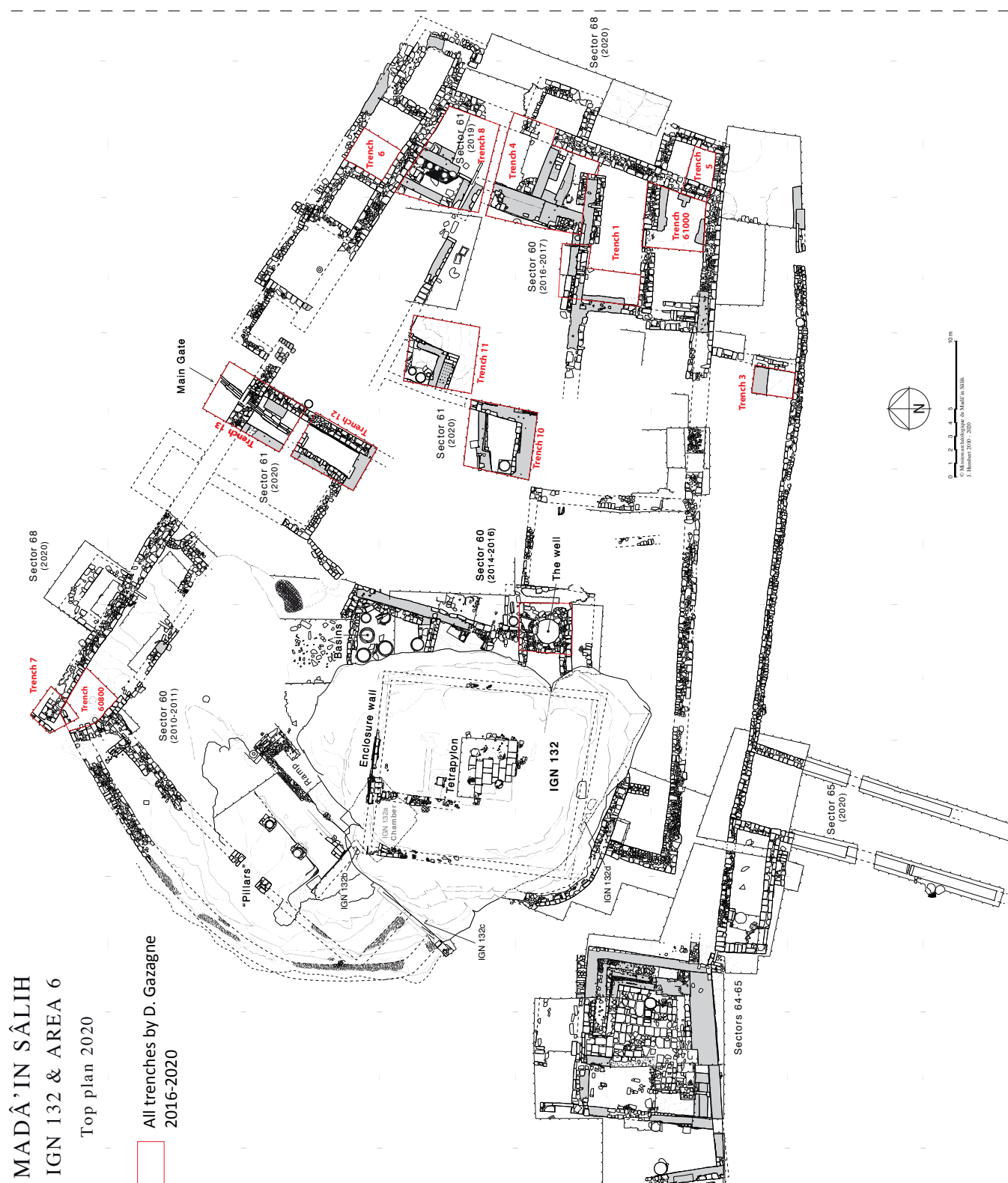
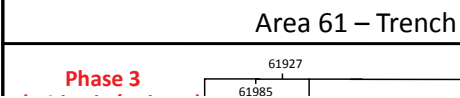
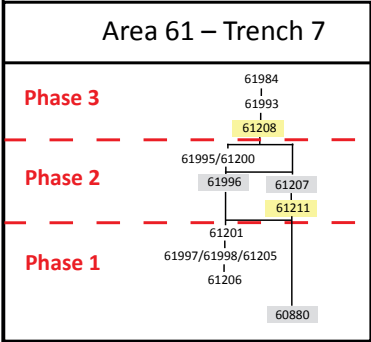
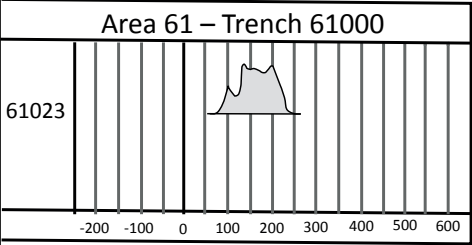
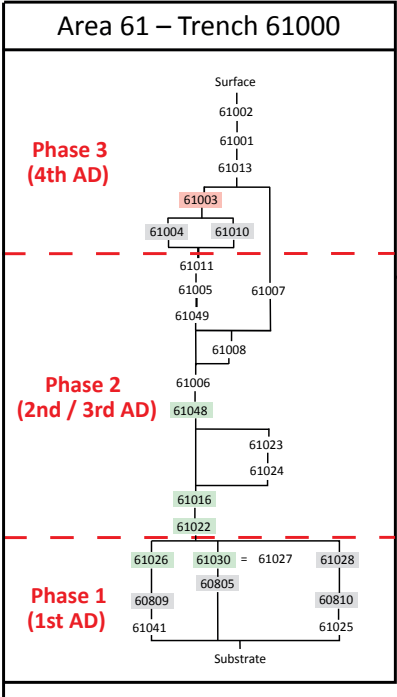
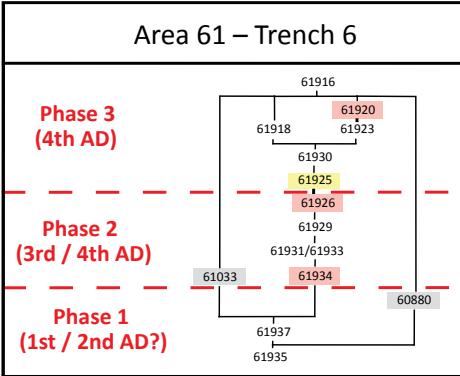
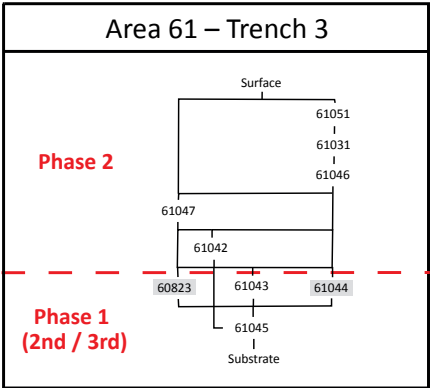
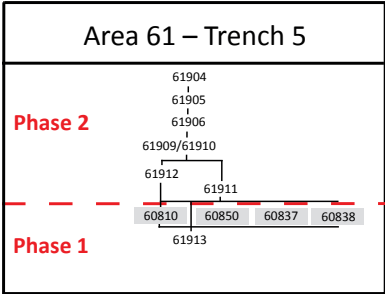
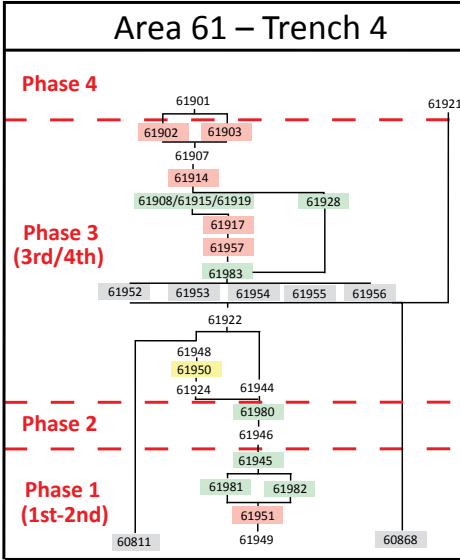
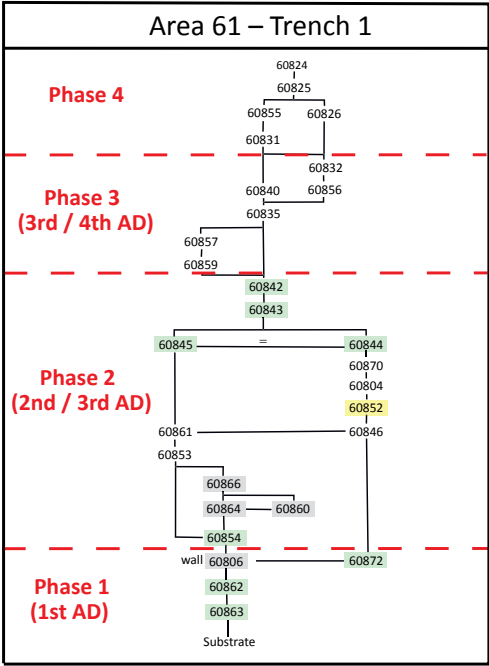
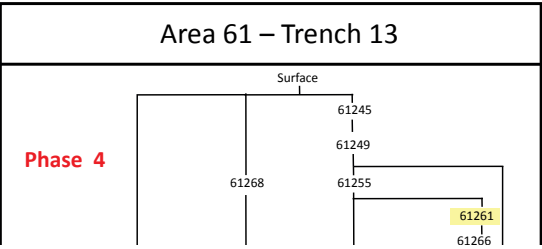
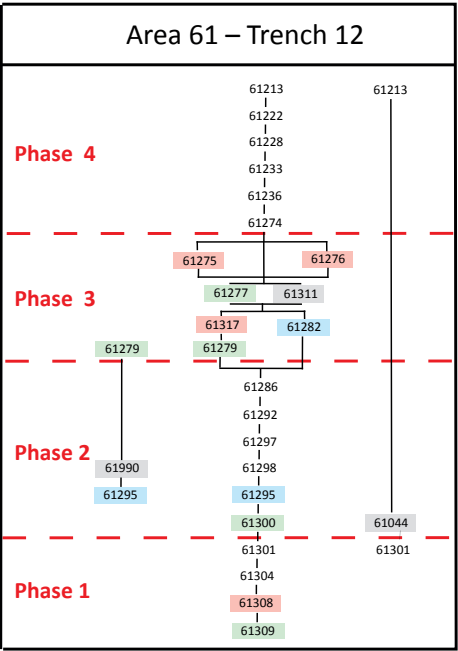
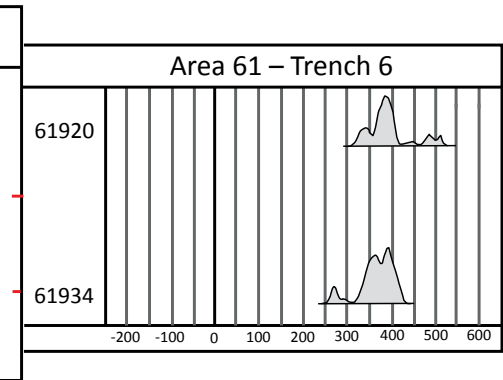
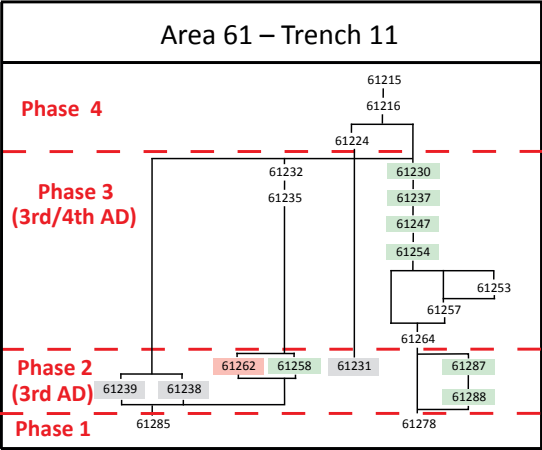
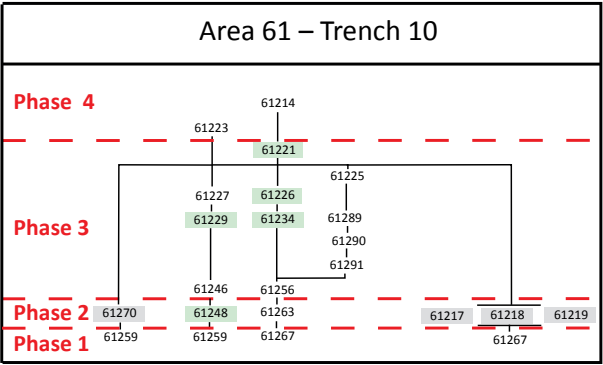
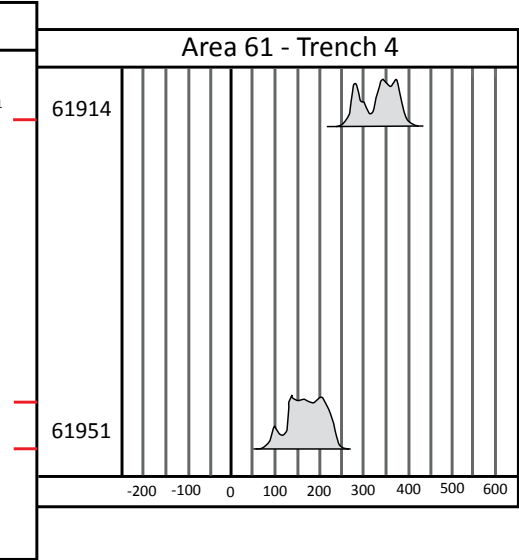


Fig. 52. Location of the trenches opened during the 2016–2020 seasons.





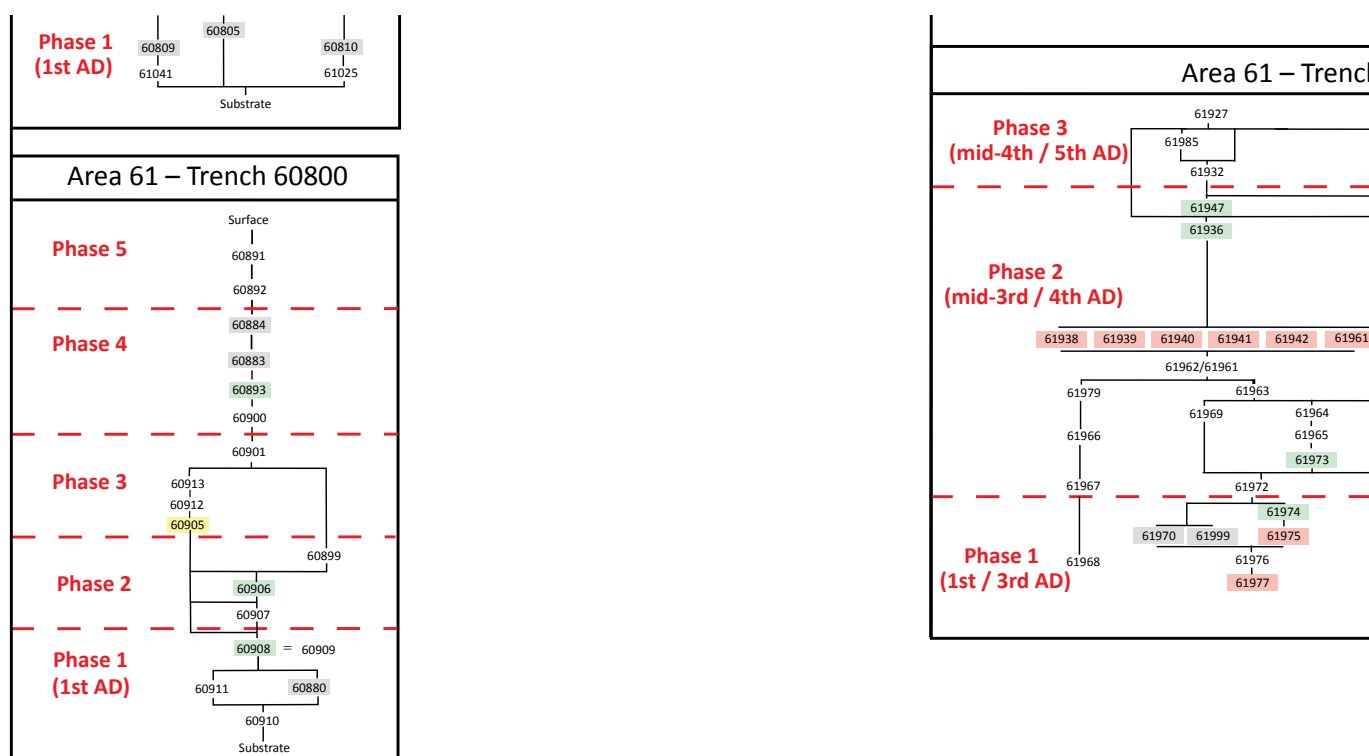


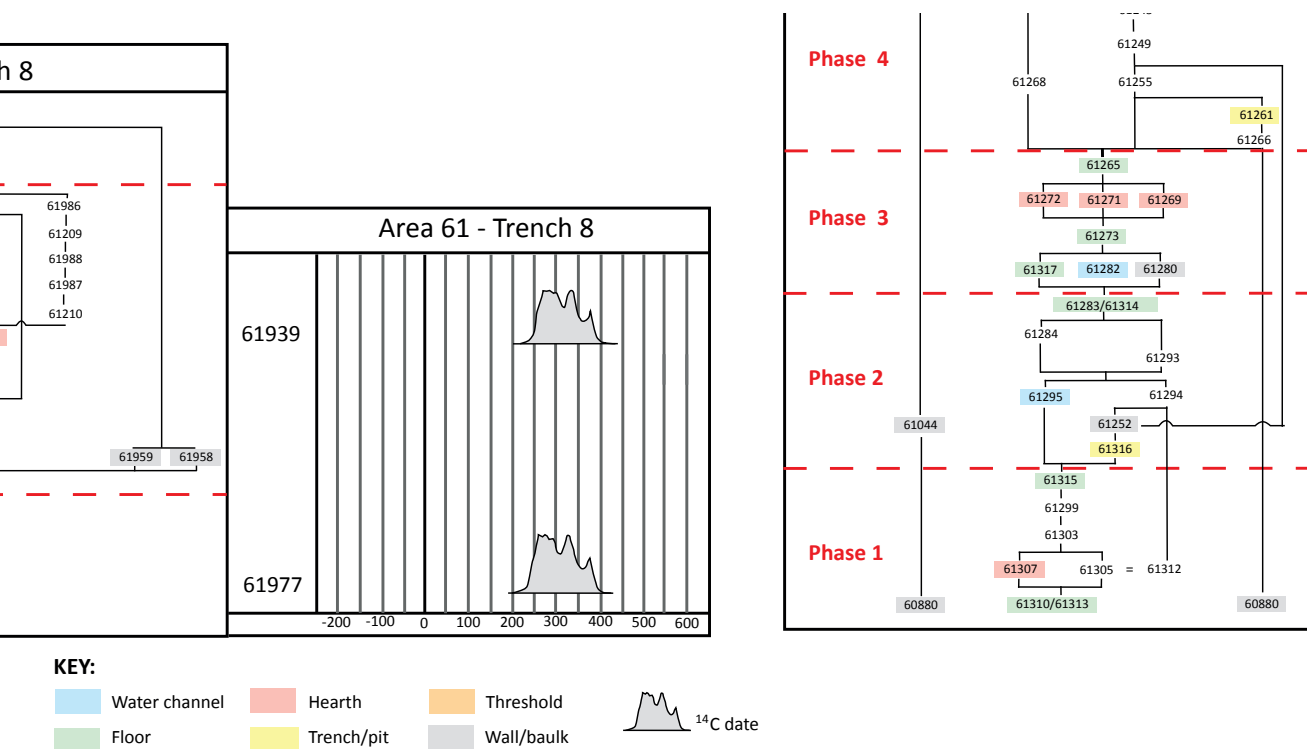
Fig. 53. Diagrams of the stratigraphy of the trenches opened during the 2016–2020 seasons.

Phase 1: extension of the sanctuary on the lower terrace (first century AD–first half of the second century AD)

This phase is characterized by the construction of the temenos wall on the eastern side of IGN 132 (fig. 54). The lower terrace presents features comparable with South Arabian sanctuaries, notably Almaqah at Širwāḥ, which has an oval-shaped temenos wall and side rooms built on the periphery of the wall.

As most of the archaeological levels that have yielded Nabataean finds are associated with the temenos wall, the latter was most certainly erected during the first century AD (trenches 60800 and 61000). All the Nabataean levels rest directly on the bedrock, which supports the theory that the lower terrace was an original foundation *ex nihilo*. The lower terrace had rooms at least in the south-east corner of the sanctuary (Trench 1, wall 60806). Here, the room excavated in 2016 in Trench 1 has yielded high-end, but mostly reused, architectural features: white sandstone slabs and a doorframe decorated with a Nabataean capital (first–second century AD).¹³ In the other trenches, the oldest levels are courtyard levels, thus giving the impression of an enormous unroofed space surrounded by a temenos wall. At the foot of outcrop IGN 132, the well gave pilgrims access to water.

13. Seigneuret 2017.



Phase 2: renovation of the sanctuary during the Roman period and its integration within the urban framework (second half of second century–middle of third century AD)

This phase is characterized by the transformation of all or part of the lower terrace into a worship area for the garrison. Several large modifications were undertaken during this period (**fig. 55**). Several walls were built inside the lower terrace, at the eastern end, although their function could not be determined.

A new entrance, which at that time was the main access to the sanctuary's lower terrace, was created on the north-eastern side. It is prolonged by a 2 m-wide corridor leading to the sanctuary's courtyard. Two Latin inscriptions were discovered there, indicating that this was an important access. A water channel installed in the centre of the corridor drained the rainwater from the courtyard and out of the sanctuary. A secondary gate was installed in the northern corner of the sanctuary.

According to P.-L. Gatier, 'the deities named in the inscriptions [...] belong to military forms of worship, and are venerated by soldiers, as is shown by the use of the Latin language [...] One must conclude that all or part of the sanctuary at Hegra was dedicated to the garrison's forms of worship'.¹⁴

The second monumental modification concerns the reorganization of the surroundings of the sanctuary, with the addition of a second temenos wall on the north and south sides of the

14. P.-L. Gatier, see note 2.

MADĀ'IN SĀLIH
IGN 132 & AREA 6
General plan 2020

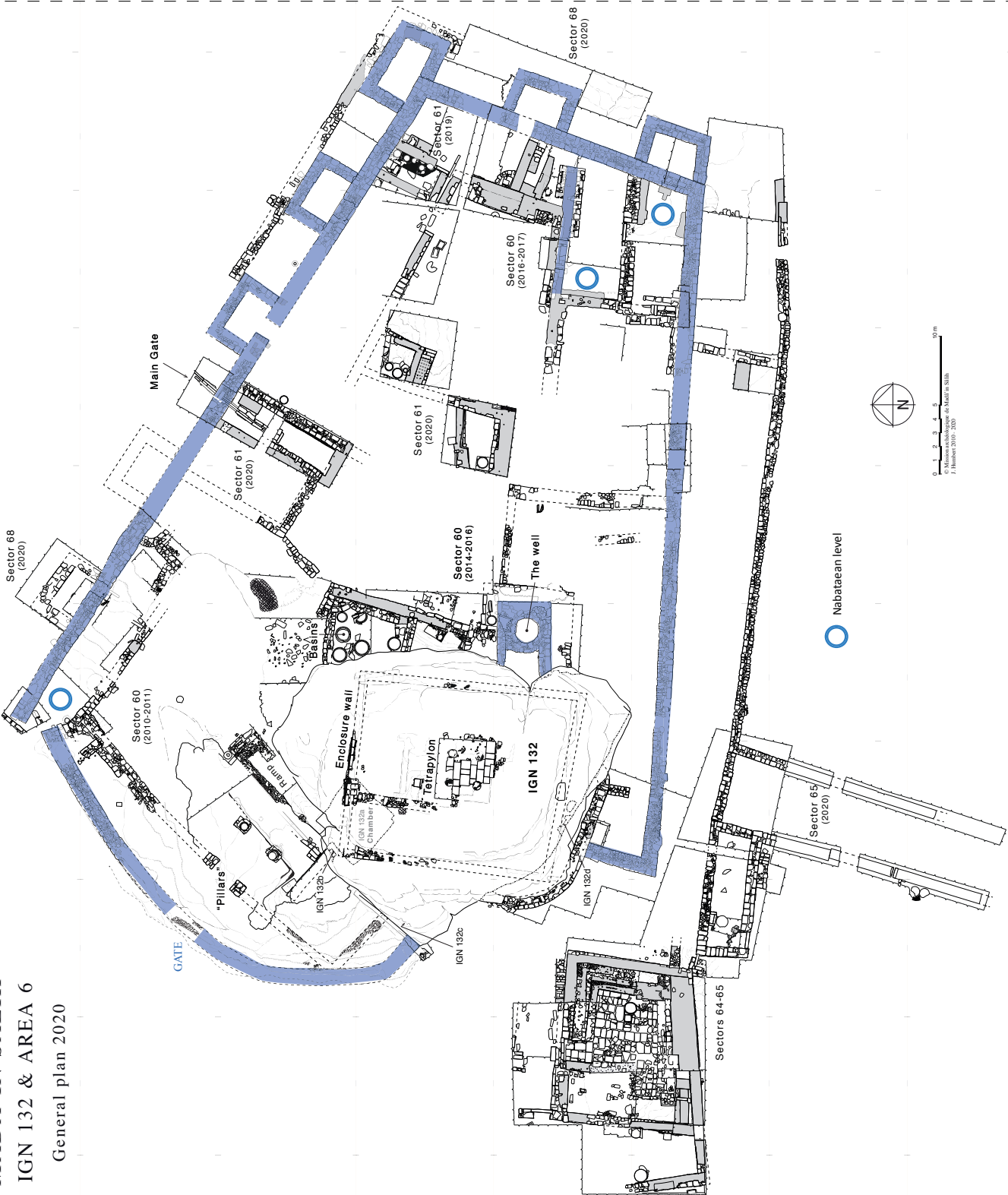


Fig. 54. Plan showing the phases of the Nabataean period.

MADÂ'IN SÂLIH
IGN 132 & AREA 6
General plan 2020

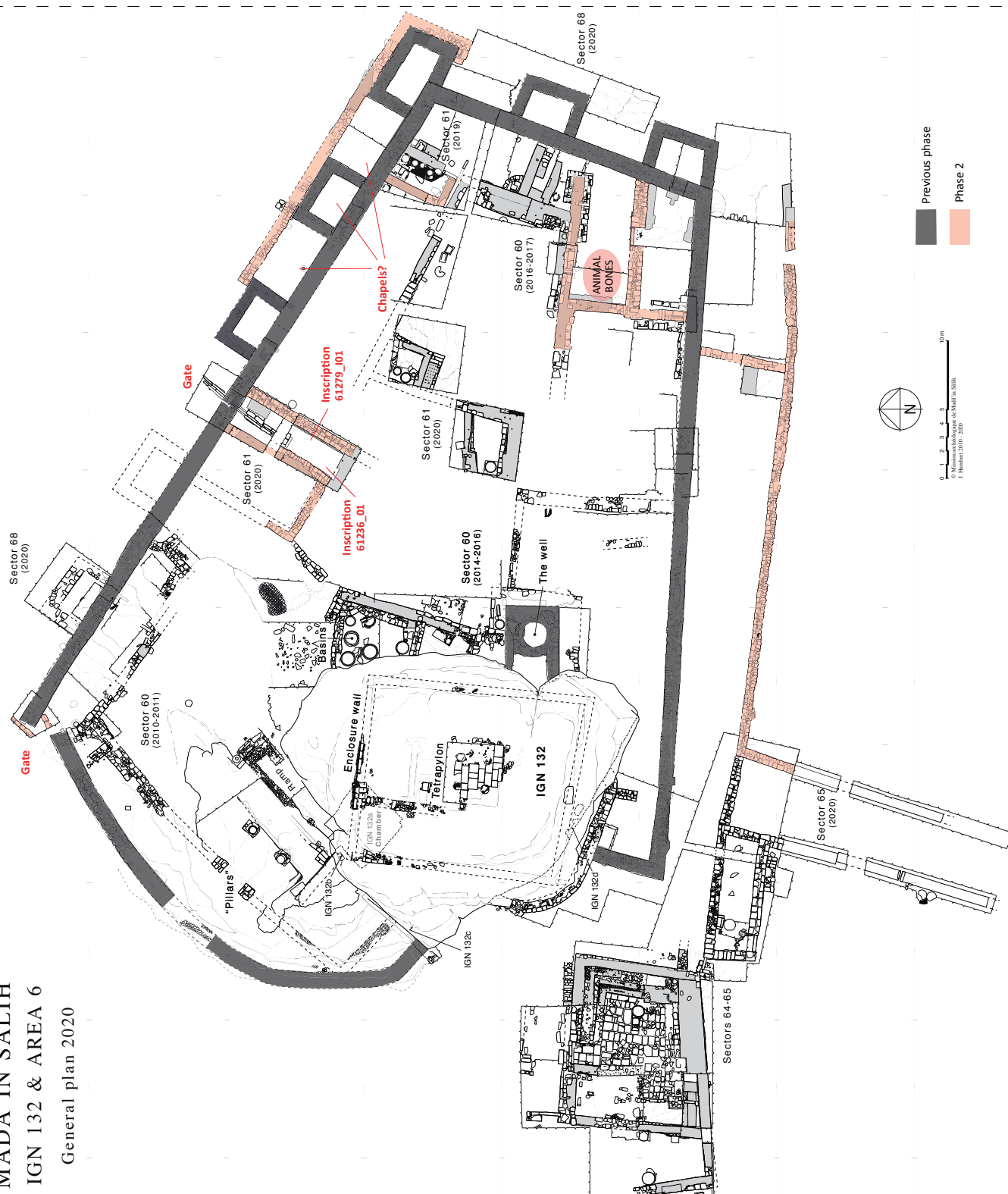


Fig. 55. Plan showing the phases of the Roman period.

sanctuary. In the north, the aim of the operation was to double the number of peripheral halls which are all accessible from inside the sanctuary. It might be possible to link this architectural programme to the inscriptions. Indeed, according to P.-L. Gatiér the text of inscription 61236_I01 'does not mean that the sanctuary at Hegra was dedicated to Jupiter of Damascus or a similar god, but rather that a group of soldiers originating from the territory of Damascus had a chapel or location there dedicated to this god'. One can assume, then, that the peripheral halls were chapels dedicated to different deities, other than the one to which the sanctuary was dedicated. In sum, there may have been two separate entrances, used according to the deities the pilgrims came to worship. The Roman gate installed in the north-east temenos wall provided the Roman soldiers direct access to the lower terrace, where the votive chapels dedicated to the military deities (Jupiter of Damascus, among others) were located.

The main entrance, located in the north-west, provided direct access to the tetrapylon housing the worship of the deity or deities to which the sanctuary was dedicated. A reused Nabataean inscription in the wall of the dwelling constructed south-west of the sanctuary (64114_I01) shows the signature of an individual who asks to be kept healthy and safe 'before the god of heaven'.¹⁵ South of the sanctuary, the addition of wall 60823 is more likely to represent the strengthening of a road network clearly organized as a layout of streets in an area whose buildings gradually increase in density (**fig. 56**). The main, north–south, axis is demarcated by walls 64402 and 64412 and ends on the rocky outcrop IGN 132, which is a guiding feature of the urban topography. This street opens onto an east–west axis at right angles to it and demarcated by the temenos wall (60848) and by wall 60823, thus allowing the sanctuary to be integrated within the urban network while also leading to the entrances situated to the north-east and north-west. The Roman entrance is located in the north-east because it provides direct access to the chapels.

There are no peripheral halls on the south side of the sanctuary but excavations in 2016 and 2017 (Trench 1 and trench 61000) have exposed a second- to third-century floor level which has yielded traces of domestic activity: numerous animal bones, a mortar *in situ*, and a water storage basin. This is therefore an area for cooking and meat consumption within a religious context.¹⁶

Phase 2 of the sanctuary has yielded reliable dating elements in clearly identified archaeological contexts. The north-east gate of the sanctuary (Trench 13) has yielded fragments of an ionic capital. The inscription found on floor 61236 of Trench 12 is dated between AD 161 and 211. Floor level 61023 excavated in the building located in the south-east corner of the sanctuary (trench 61000) has provided a radiocarbon date between AD 85 and 235. Further north (Trench 4) floor level 61951, associated with wall 60868, has provided a radiocarbon date between AD 85 and 239. Excavation of the peripheral hall (Trench 6) has provided a later radiocarbon date, between AD 258 and 425.

A Latin inscription discovered in 2003 reused in the residence south-west of IGN 132 and dated AD 175–177, mentions the restoration (*restitutio*) of a monument (*...lum*) undertaken with the

15. Nehmé 2017.

16. Trench 60800, in the northern corner of the sanctuary, has also yielded a significant amount of gazelle bones. However, in the absence of a complete pottery study of the trench, it is currently not possible to associate this discovery to a phase of the sanctuary.

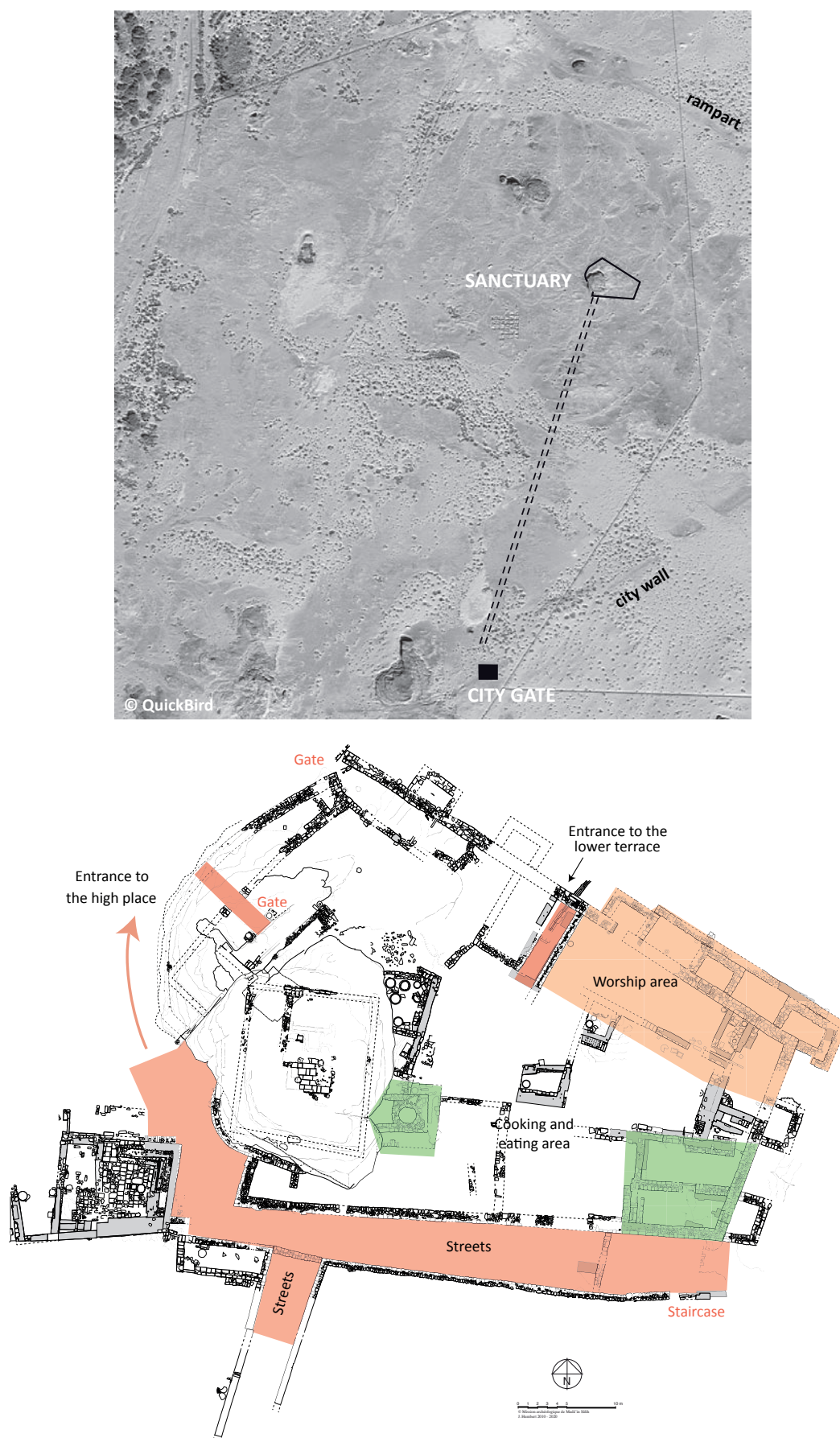


Fig. 56. Interpretation of the Roman sanctuary and its surroundings.

assistance of two centurions of the Legio III Cyrenaica.¹⁷ The monument in question could just as well be the city wall (*[val]lum*) as the sanctuary (*[temp]lum*).¹⁸ The Latin inscriptions discovered in 2020 would appear to show that the reconstruction of the word as *[temp]lum* is more likely. The end of the religious function of the lower terrace takes place in the middle of the third century, perhaps even a little later.¹⁹ Insofar as the lower terrace is a place of worship for the garrison, a parallel can be made with the chronology of the fort, which is absolutely identical.²⁰ Indeed, according to Z.T. Fiema the south gate of the fort was blocked in the middle of the third century and the camp wall was strengthened following a major event of an unknown nature. From this point, military occupation was maintained at the latest until the end of the third century, after which the fort was occupied by a civil population.

Phase 3: conversion of the lower terrace into a craft area (second half of the third–end of the fourth century AD)

This final architectural phase is the best documented because the remains are so well preserved (**fig. 57**). The temenos wall (60880) was reclaimed in three places. On its eastern side, the destruction of the wall was used to install an access ramp. The old sanctuary courtyard was accessible from there via a small quarter-circle staircase. On the southern side of the sanctuary, a 7 m-length of the temenos wall was reclaimed, enabling the creation of an access to the south, towards the town, while providing the construction materials to build the later house, which abuts the internal face of the temenos wall, in the south-east corner of the lower terrace. The area of the house is 120 m². It was accessed from the north, from the old sanctuary courtyard. There are two rectangular living rooms. At the north-eastern end, there is a doorway leading into a small side room which houses two tanoors and the start of a staircase giving access to the first floor. The walls of the house belong to the previous periods. Only the mud-brick walls, notably in the side room, were constructed in phase 3.

On the other side, in the north-east corner of the lower terrace, there is a group of ovens. They are separated from the house by the access ramp in order to avoid the inconvenience of smoke and the danger of fire. Several grinding tools, such as manual millstones and a basalt mortar, were found in the levels associated with oven use, which suggests they were destined for food preparation. The presence of such a concentration of ovens could also be explained by the availability of fuel provided by the processing of oil (branches, waste from the press).

Finally, numerous monolithic sandstone tanks were discovered in the sanctuary enclosure. Two storage rooms were found — one in 2011, the other in 2020 — containing several basins *in situ*. It is possible that these features were utilized in the processing and storage of oil. Water from the well could have been used for oil processing, unless it was already blocked at that time.

Phase 3 of the sanctuary has provided dating from reliable archaeological contexts. For the storage room located at the foot of IGN 132, a *terminus post quem* in the middle of the third

17. Al-Tahi and al-Daire 2005.

18. Fiema, Villeneuve, and Bauzou 2020.

19. See below the chronology of phase 3.

20. Fiema 2019.

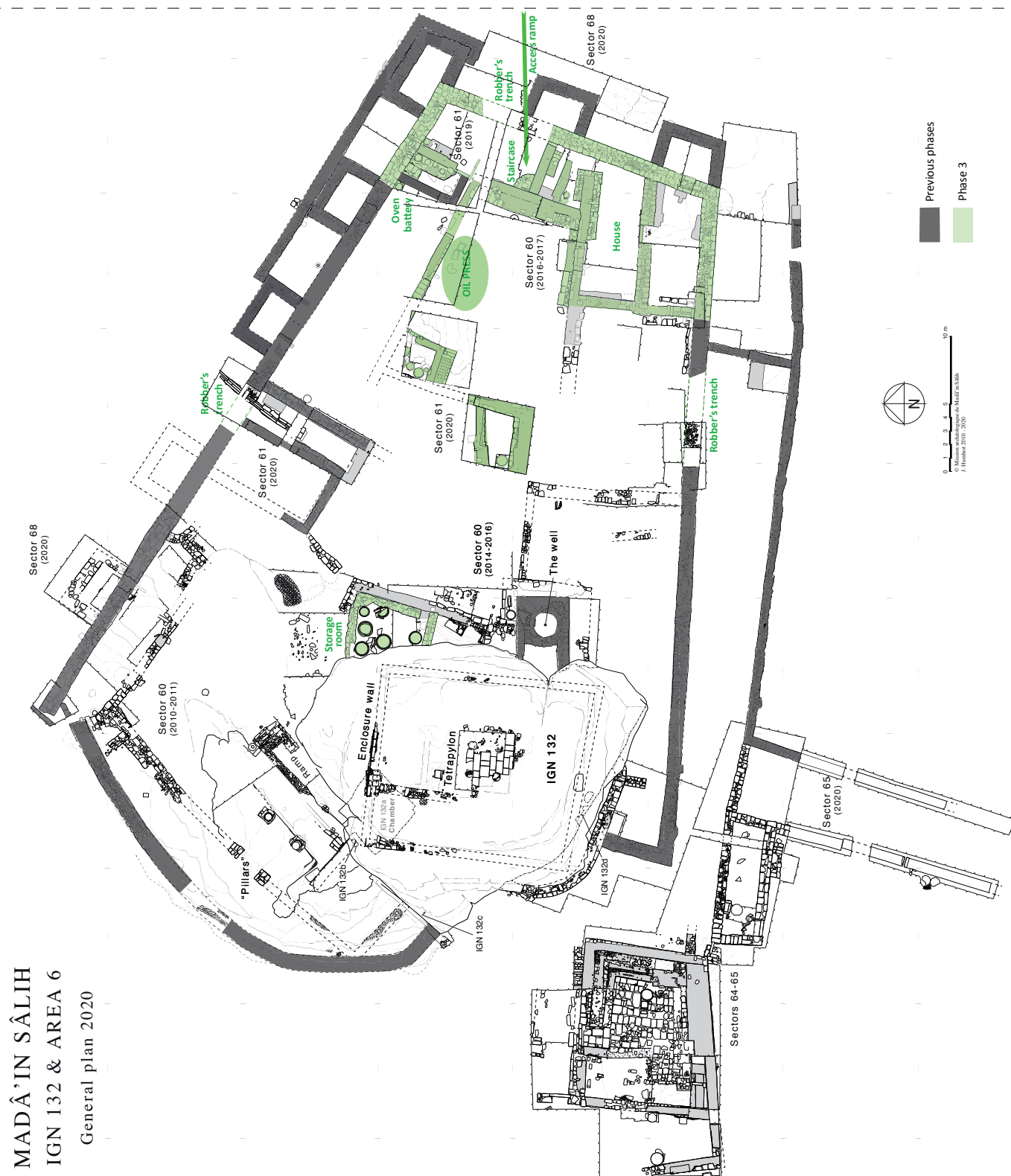


Fig. 57. Plan showing the late phases of the Roman period and the late period.

century AD has been provided by coin 60715_C01, found under a sandstone basin. For the group of ovens, a radiocarbon dating on oven 61939 provides a margin of use between AD 240 and 383. Finally, in the later house, a radiocarbon dating on tanoor 61914 provides a margin of use between AD 251 and 397. According to the pottery finds collected in all the final occupation levels, the general abandonment of the area took place at the beginning of the fifth century AD.

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IGN 132, Areas 66000, 69000, and Restoration

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and Abdulrahman ARAFA (Ministry of Tourism)

This report presents some of the excavations undertaken in areas related to IGN 132 (for location, see Gazagne's report fig. 1):

- inside rock-cut chamber IGN 132a (*loci* 66000);
- the open air area in front of rock-cut chamber IGN 132a (*loci* 66000);
- well no. 132 (*loci* 69000).

As for the restoration, it concerns mainly the two columns put to light during the excavations and the building of a staircase to access the top of the outcrop.

Rock-cut chamber IGN 132a, *loci* 66001–66006

This rock-cut chamber was perhaps used to store the material needed for the ceremonies performed in the sanctuary such as offerings and others. The chamber originally had a door but the front wall collapsed and it is now wide open. It is 4.50 x 4.10 m and 1.79 m high.

The excavation started in 2010 in the front part of the room. Two arbitrary layers, *loci* 60601 and 60602 were first distinguished and, in a limited area of the chamber (see fig. 46 of the 2010 report, <http://halshs.archives-ouvertes.fr/halshs-00542793/fr/>), three *loci*, the bottom two of which were numbered 60629 and 60632, were recognised. These yielded a few pot sherds, but no forms. The ware identified seems to belong to the latest phase of occupation of the site (4th-5th century?).

It was decided in 2020 to empty completely the room for aesthetic reasons and also to collect more material (**fig. 1–2**).

The following *loci* were distinguished:

- **66001**: sandy layer, thickness comprised between 20 and 27 cm;
- **66002**: stones of various dimensions put to light in the north-east of the sandy layer (thickness 15 cm);
- **66003**: stones dispersed in the southern part of the room (thickness 28 cm);
- **66004**: stone of average size found in the middle of the room, perhaps part of a millstone.
- **66005**: clayey layer (thickness 35 cm);
- **66006**: bedrock.



Fig. 1. Room IGN 132a before the 2020 excavation season.



Fig. 2. Room IGN 132a at the end of the 2020 season.



Fig. 3. General view of the sounding at the beginning of the excavations, before the extension.

The material includes pottery, bones, charcoal, metal (nail), shell, fragments of stone basins, fragment of a millstone. Only *loci* 66001, 66005 and 66006 yielded pottery.

Area in front of IGN 132a, *loci* 66007–66033

This is the area from which one can access the top of IGN 132. It slopes down towards the north-west. Before excavation, the area formed a small tell of earth mixed with small and large stones, which in places is more than 2 m high (**fig. 7**). There were also two large boulders of yellow sandstone which had fallen from above, visible on fig. 8. Finally, down the slope were the two square “pillars” put to light and restored during previous excavation seasons and considered to form the access to the sacred area and from there to the top of the outcrop where a tetrapylon was built. It was first decided to open a 6 x 6 m square, which was later extended two meters further to the east, thus forming a 6 x 8 sounding (**fig. 3–4, 8**). Many *loci* were distinguished and the first two columns *in situ* ever found at Hegra were put to light (**fig. 5**). They stand on a square base which does not rest directly on the bedrock but on a layer of earth. Several drums belonging to these columns were put to light, as well as a capital. The other finds include several stone basins (from the Roman period), a rock-cut basin cut in the bedrock, part of a staircase leading to the chamber IGN 132a, and walls.¹

List of loci:

66007: surface layer, altitude 790.35 m asl.

66008: rectangular stones found in the north-west part of the sounding, altitude 790.30 m. They were removed after having been documented.

66009: stones of average size found in the middle of the square, altitude 790.34 m.

66010: stones well organised and fragments of stone basins found 25 cm below the surface in the western part of the square, altitude 790.07 m. They were removed after having been documented.

66011: Nabataean column, circular, put to light in the middle of the sounding, near *locus* 66009 (**fig. 6, 19**).

Description of the column: It is 1.86 m high, and the diameter at the top is 56 cm. It is composed of three drums resting on a quadrangular base. The latter is made of two courses of stones under which is a levelling layer of sand and mortar. The first course of stones (from bottom to top) is 10 cm high and is 1.08 x 0.75 m. It is followed by a layer of mortar, 8 cm high. The second course of stones is 12 cm high and is 0.83 x 0.82 m. Then follows the moulded column base proper, 21 cm high, circumference 2.42 m at the bottom and 2.08 at the top. The first drum is 39 cm high and its circumference 1.85 m. It bears a sign which is possibly a mason’s mark representing the Nabataean letter *b* turned 90° to the right. The second drum is 40 cm high and its circumference 1.84 m. The third drum is 43 cm high and its circumference 1.82 m for a diameter of 55 cm.

66012: column drum found west of column 66011, altitude 789.55. It was later reused for the restoration of column 66022.

66013: clayey layer covering the sounding, 35 cm under the surface.

1. The elements of architectural decoration are studied by J. Dentzer-Feydy, see her report in this volume.

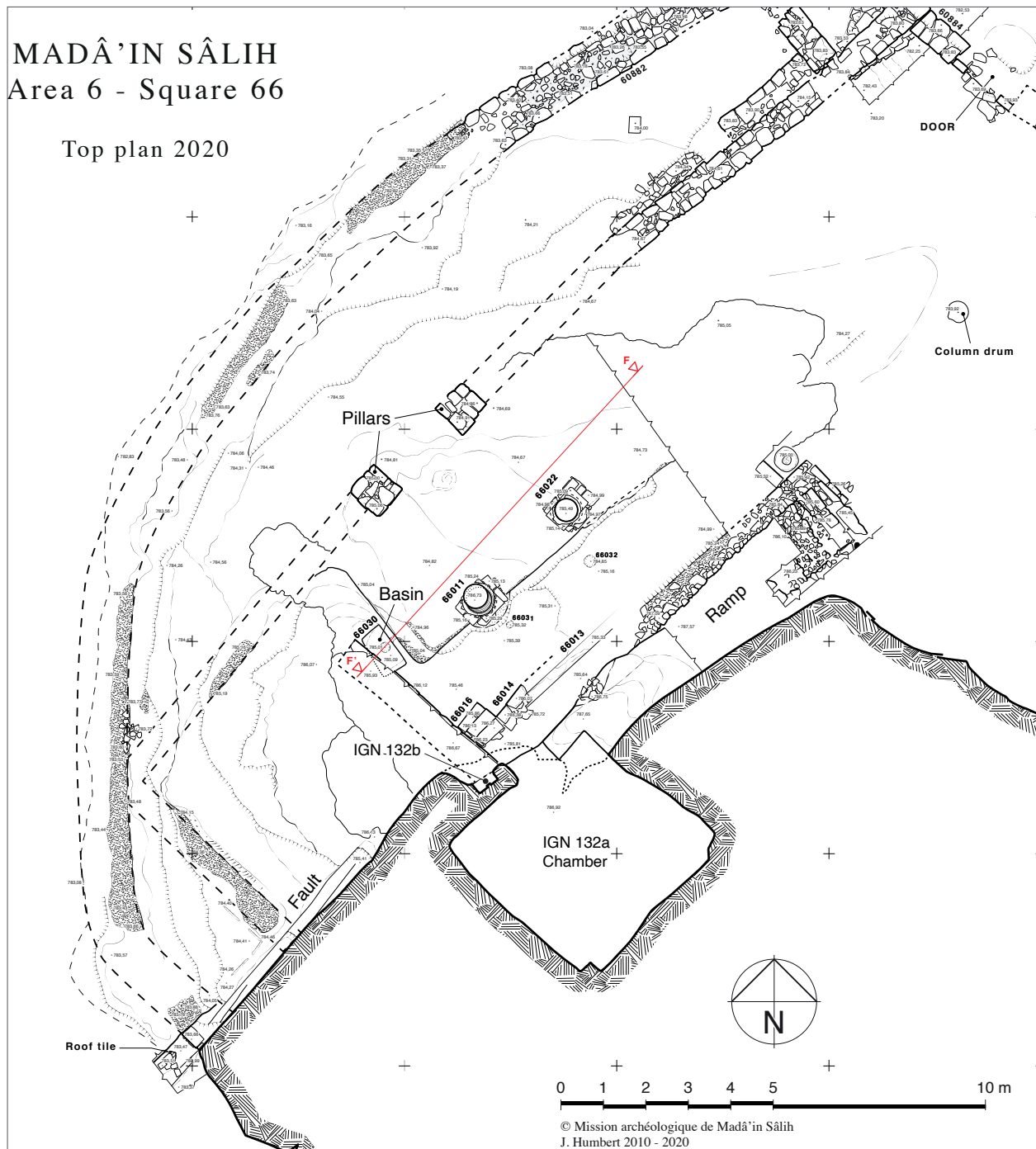


Fig. 4. Plan of the sounding at the end of the season.

66014: wall, from south-west of the sounding to the north-east. It is 1.74 m long, only 28 cm wide, and 86 cm high, altitude 789.79 m (fig. 9).

66015: east-west wall which abuts the rock of IGN 132, in the south-west baulk. It joins wall 66014. It is 4.66 m long and is composed of two courses of well arranged stones, altitude 789.64 m (fig. 9, 22).

66016: three steps of a staircase which leads to the entrance of rock-cut chamber IGN 132a. It merges with wall 66014 and is adjacent to wall 66015, altitude 789.59 m (fig. 9, 22).

66017: sandy layer which is adjacent to the south-western baulk, altitude 789.45 m (C¹⁴ requested on date seeds on June 2020).

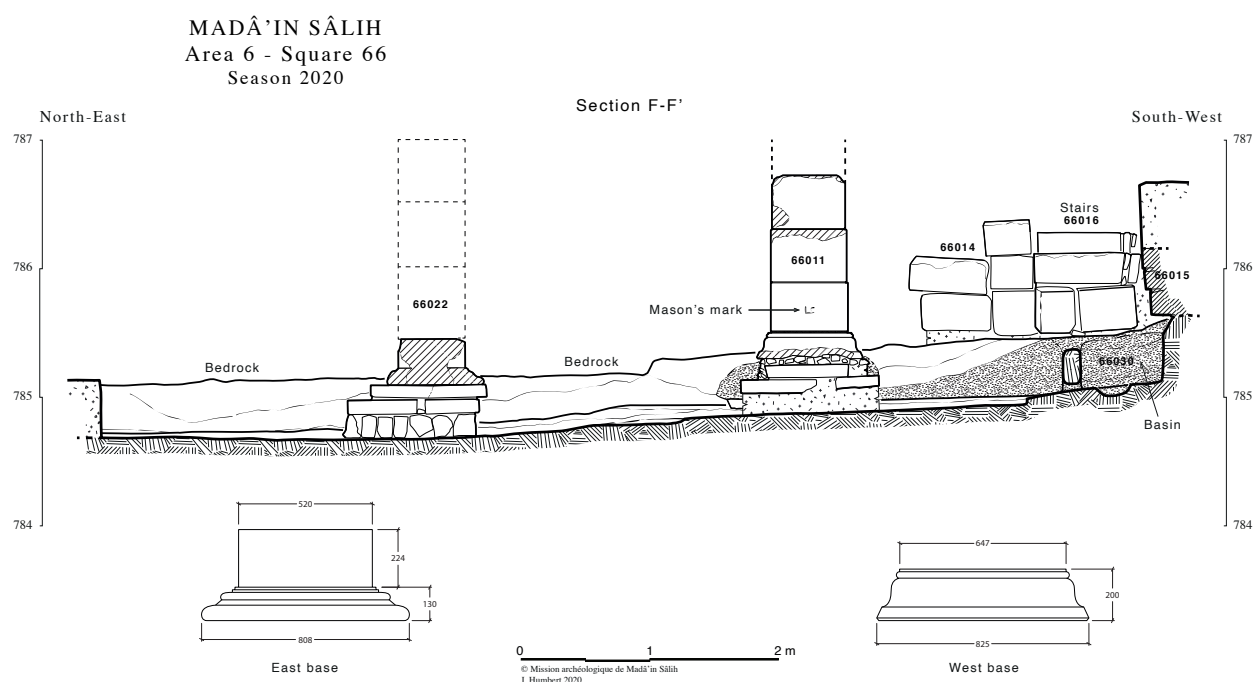


Fig. 5. East-west section of the sounding across the columns.

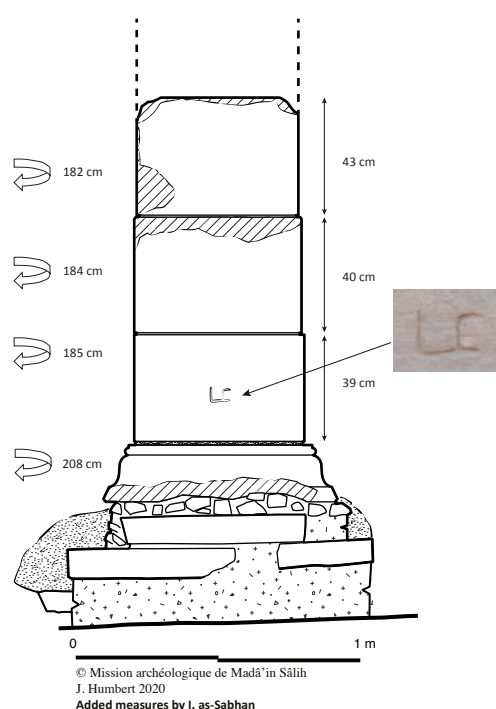


Fig. 6. Column 66011.

66018: bedrock, altitude 789.02 m.

66019: three column drums, diameter 56 cm, height from 40 to 43 cm, east of column 66011, altitude 789.57 m. They were later reused for the restoration of column 66022 (**fig. 16, 21**).

66020: square stone, 65 x 64 cm, thickness 7 cm, altitude 789 m. It was transported and left inside rock-cut chamber IGN 132a.

66021: small drum, hollowed on one side, diameter 34 cm, found east of column 66011, altitude 789.11.

66022: incomplete Nabataean column, composed of one drum resting on a base. It lies 2.42 m east of column 66011, altitude 788.99. It was restored with the fallen drums numbered 66012 and 66019 (**fig. 12–13**).

66023: stones, south of column 66022, altitude 789.14.

66024: large blocks found in the south-east corner of the sounding, altitude 788.98.

66025: complete Nabataean capital, diameter of the circular part 43 cm, length from 52 to 66 cm, altitude

789.18 m (**fig. 13, 20**).

66026: small column drum, top broken, diameter 34 cm, found north of capital 66025, altitude 789.15 (**fig. 13**).

66027: group of fallen stones, found south-east of capital 66025, altitude 789.13 m.

66028: stone block, adjacent to the south-western baulk, altitude 789.11 m, which may have been used as a mortar. Another block, a square basin, was also given this number (**fig. 14**).



Fig. 7. General view of the sounding before excavation, from the north-west.



Fig. 8. View of the sounding during excavation from above.



Fig. 9. Walls 66014 and 66015; staircase 66016.



Fig. 10. Part of a circular offering table?



Fig. 11. Fragments of moulded plaster found near the columns, 66017_PI01 and PI02.



Fig. 12. Column 66022.



Fig. 13. Capital 66025, column 66022 and drum 66026.



Fig. 14. Blocks numbered 66028: square stone basin and ashlar reused as mortar (?).



Fig. 15. General view of the sounding from the north-west.



Fig. 16. Fallen column drums 66019.



Fig. 17. Circular hole 66032 cut in the bedrock.



Fig. 18. Rectangular basin 66030 cut in the bedrock, with an evacuation hole on one side.



Fig. 19. Column 66011.

66029: ashy layer, starting in the middle of the sounding and expanding to the north-east. It goes then to the south-east and stops one meter before the end of the sounding, altitude 788.9 m.

66030: rectangular basin cut in the bedrock, in the north-west corner of the sounding, possibly used for sacrifice. It has a small evacuation hole on its east side, 13 cm wide (4 cm in the middle). A circular hollow is cut inside it, in the middle, diameter 26 cm and depth 5 cm. Depth of the basin inside between 24 and 33 cm, depth outside 38 cm. Dimensions 1.02 x 0.55-0,60 m. Found at altitude 789.09 m (**fig. 18, 22**).

66031: roughly circular hole cut in the bedrock, 32 cm south of the base of column 66011. Diameter between 15 and 19 cm, depth 7 cm, altitude 788.91 m.

66032: circular hole cut in the bedrock, 68 cm south of the base of column 66022, diameter 27 cm, depth between 16 and 32 cm, altitude 788.42 m (**fig. 17**).

66033: cavity cut in the bedrock, extending from wall 66014 to the east over 1.90 m. Width 18 to 27 cm, depth up to 51 cm, altitude 788.69 m.

The five circular stone basins, the rectangular basin, the capital and other stones were taken for storage into rock-cut chamber IGN 132a. The capital was consolidated by Marie Peillet.

List of stone basins:

1. broken, found in the south-west corner of the sounding, in *locus* 66007;
2. almost complete basin, diameter 97 cm, depth 1 m, found in the middle of the sounding, adjacent to column 66011, in *locus* 66013.
3. broken but almost complete, found in the south-west part of the sounding, adjacent to the baulk, in *locus* 66013.
4. fragments of a stone basin, found north of the sounding and north of column 66011, in *locus* 66013;
5. large basin, diameter 1 m, found north-west of column 66011, in *locus* 66017.



Fig. 20. Capital 66025 being consolidated by Marie Peillet.



Fig. 21. Column drums with their numbers, before restoration.



Fig. 22. The west side of the sounding, showing loci 66014, 66015, 66016, and 66030.



Fig. 23. Well no. 132, the two rock climbers finishing the installation of the lifting jack.

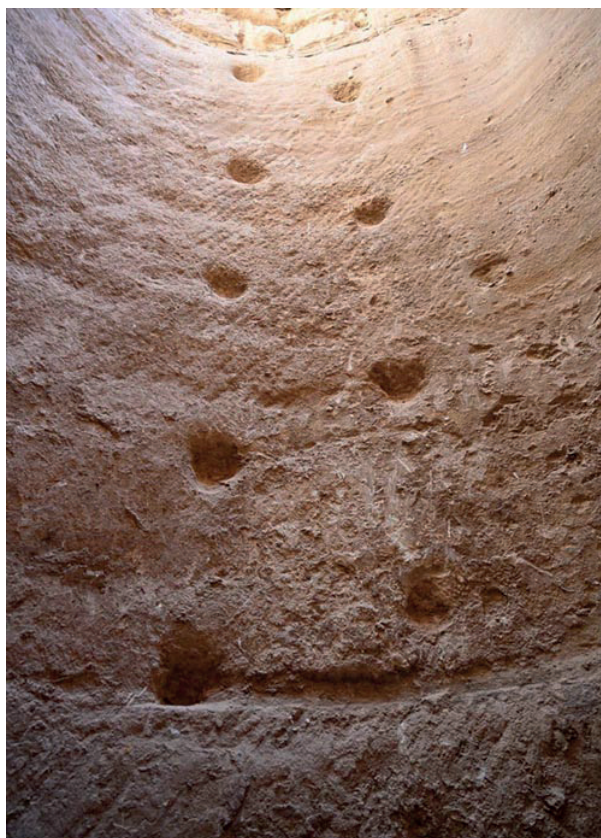


Fig. 24. Notches cut in the wall of the well.



Fig. 25. Well no. 132, horizontal marks showing the level of the various loci.

Well no. 132, *loci* 69001–69010

The well is located at the foot of the outcrop, on its south-east side. It certainly provided the sanctuary with water. The clearing showed that it was indeed a well, not a cistern as was previously suggested, even if it is placed at a higher altitude than any other well in ancient Hegra.

First, a lifting jack was installed above the well by the two rock-climbers from Cordata (**fig. 23**) in order to be able to remove from it earth and stones. A metallic ladder was then fixed to the lifting jack and a workman was taught how to secure his descent and ascent to and from the well.

Before the work started, the depth of the well was 3.30 m. The opening is at the altitude of 784.87 m. The inside diameter of the well is 1.90 m and the outside diameter is 3.25 m. The thickness of the wall which surrounds the well varies between 70 cm on the south to 1.35 on the west. On the north is a water canal, 1 m wide.

Six *loci* were recorded in the well: 69001, 69002, 69003, 69004, 69006, 69007.

Numbered features are 69005, 69008, 69009 and 69010.

122 stones were removed from the well and stored on a flat area nearby to the south of it. At the end of the season, the depth of the well reached 7.40 m (**fig. 26**), at the altitude of 777.47 m.

List of loci (fig. 25):

69001: sandy layer, 3.30 from the top of the well, no finds.

69002: clayey layer, 3.40 from the top of the well, pottery, charcoal, bones, small stones.

69003: clayey layer, 3.90 from the top of the well, pottery, charcoal, bones, large stones.



Fig. 26. View of the inside of the well.



Fig. 27. The two columns in situ before the beginning of the restoration and the lifting jack.



Fig. 28. Placing of the first drum on what remains of column 66022.

69004: clayey layer, 4.40 from the top of the well, pottery, charcoal, bones, small and large stones, shell.

69005: 14 notches cut in the rock cut part of the well, from 2.52 to 7.40 m deep, on the east (fig. 24).

69006: clayey layer, 4.90 from the top of the well, pottery, charcoal, bones, small and large stones.

69007: clayey layer, 5.90 from the top of the well, pottery, charcoal, bones, small and large stones, bead, metal, basalt stone, shell.

69008: column drum, diameter 53 cm, height 49 cm, found at 6.43 m from the top, in *locus* 69007.

69009: column drum, diameter 48 cm, height 33 cm, found at 6.7 m from the top, in *locus* 69007.

69010: column drum, diameter 54 cm, height 38 cm, found at 7.08 m from the top, in *locus* 69007.

Restoration in area 66000

Considering that the two columns 66011 and 66022 are the first columns *in situ* ever found at Hegra, it was decided to restore them, using the very well preserved column drums which were found directly fallen from them.



Fig. 29. Column 66022 at the end of the restoration process.



Fig. 30. Building of the staircase to secure access to the top of IGN 132.

It was also decided to continue the staircase built with mud bricks in order to secure the access to the top of IGN 132.

The following process was followed :

- preparation of mortar (clay, sand, water and Fosfiber P1);
- building of a metallic lifting jack to carry the drums (fig. 27);
- placing of three drums from *locus* 66019 on top of the remaining drum of column 66022, fixed to each other by a layer of mortar (fig. 28–29);
- restoration of the base of the two columns with mud bricks and stones (fig. 31);
- building of the staircase (fig. 30).

It is very important to undertake restoration work at the end of the excavations, especially when important structures are put to light such as columns (fig. 32).



Fig. 31. Consolidation of the base of column 66022.



Fig. 32. The two columns at the end of the restoration.

IGN 132, Areas 67000 and 68000–68300

Maher AL-MUSA and Saad AL-MUQBIL (Ministry of Tourism)

This report presents the work and preliminary results obtained in 2020 in the trenches numbered 67000, 68000, 68100, 68200, and 68300. These are all located on the outskirts of sanctuary IGN 132, either along its temenos wall or immediately outside (see fig. 1 in Gazagne's report).

The reasons for selecting these trenches are the following:

- 1/ clarify a section of the southern Nabataean temenos wall, immediately east of the section of the wall numbered 60848: Area 60700;
- 2/ determine whether the wall which doubles the Nabataean temenos wall in the Roman period, numbered 60823, continues further east: Area 68000;
- 3/ determine whether a wall encloses the two Nabataean peripheral rooms built outside the eastern section of the temenos wall of the sanctuary, which would be similar to the one which encloses the three peripheral rooms built outside its northeastern section: Area 68100;
- 3/ check whether there are peripheral rooms outside the northwestern section of the temenos wall: Areas 68200 and 68300.

Area 67000

The trench, measuring 5 x 3.20 m (**fig. 1**), is located east of wall 60849, the continuation of which, further east, was numbered 60807. The highest point before excavation (**fig. 2**) was the northwestern corner (783.43 m asl) whereas the lowest point, in the middle of the trench, was 783.14 m asl. The topsoil is a moderately hard clayey soil with many small stones and gravel. Ten successive layers were identified and numbered, with 67006 being the bedrock (**fig. 3**). The eleventh *locus* corresponds to the Nabataean temenos wall, 60849, which was uncovered in the western part of the trench. Since it did not continue further east, it was initially thought that the wall was either at a lower level or was built in mud bricks. The results of the excavations showed that it was not the case.

Wall 60849 is Nabataean and forms the southern temenos wall of the sanctuary. In order to build it, a layer of clay mortar was first spread on the bedrock. Then came the foundations of the wall above which are laid two courses of stones. The wall in this place is 1.26 m wide and 0.45 m high (**fig. 4**). Its highest level is at 783.42 m asl and its lowest at 782.55 m. In the Roman period, this section of the wall was removed, probably in order to reuse the stones. After the removal of the stones down to the bedrock, the space was filled with a layer of clayey earth mixed with small stones, *locus* 67002, above which one finds a layer of small to medium rubble stones, *locus* 67010 (**fig. 5**). It is followed by a layer of desert sand, *locus* 67005.

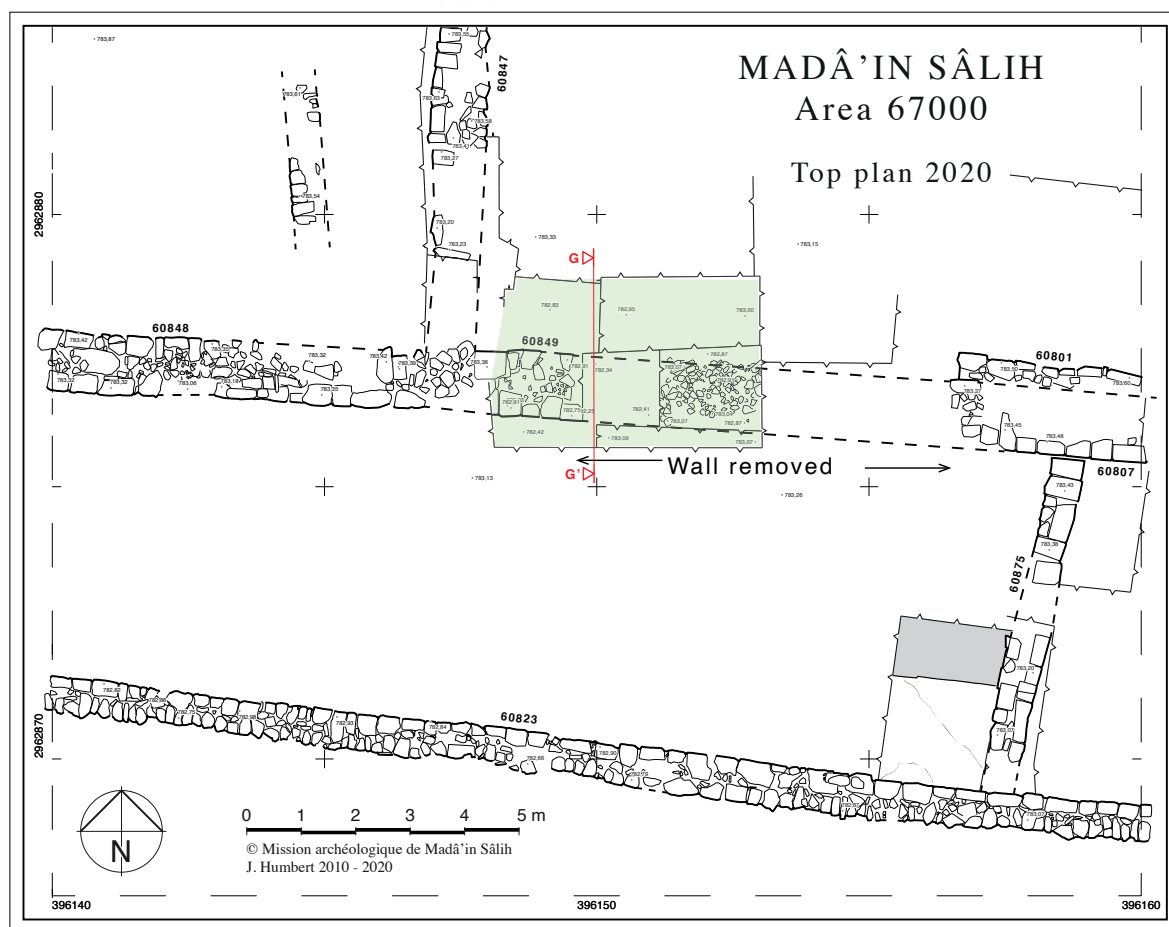


Fig. 1. Top plan of Area 67000 in its context.

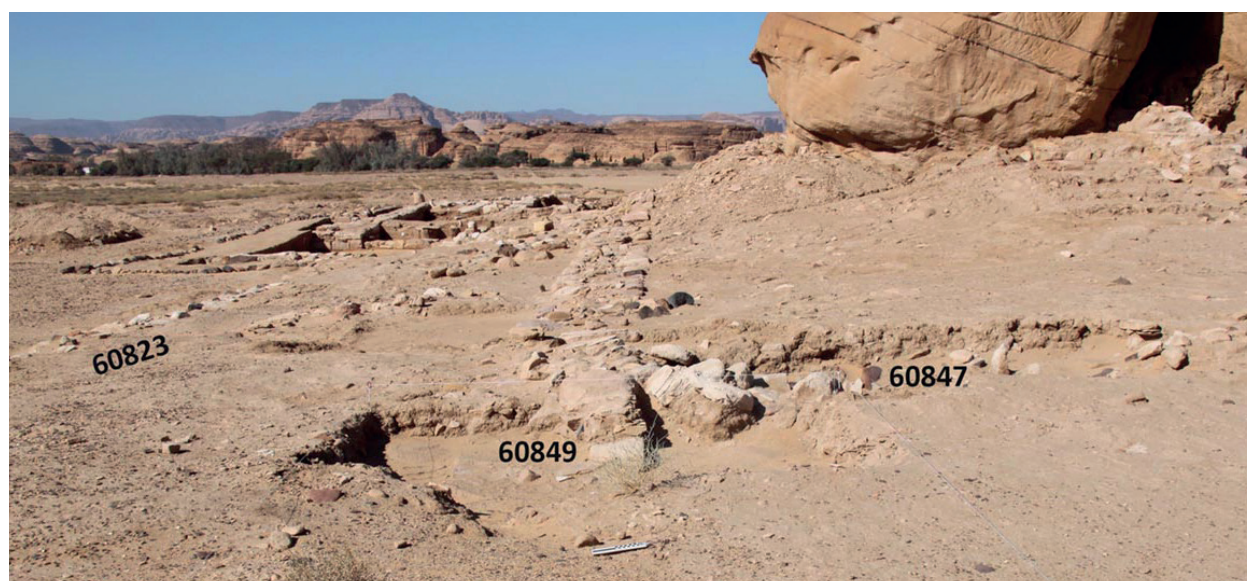


Fig. 2. Area 67000 before excavations.

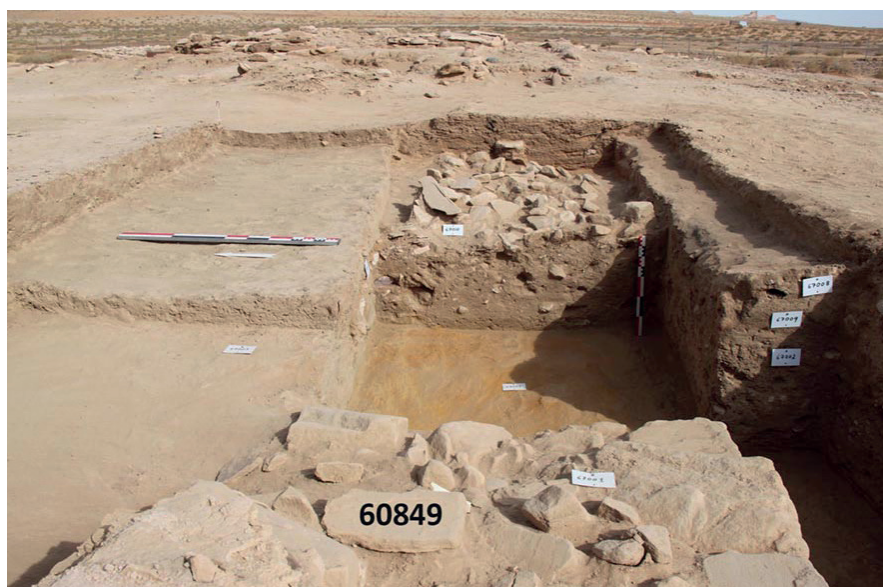


Fig. 3. General view of Area 67000 at the end of the excavations, looking east.



Fig. 4. Nabataean temenos wall 60849.

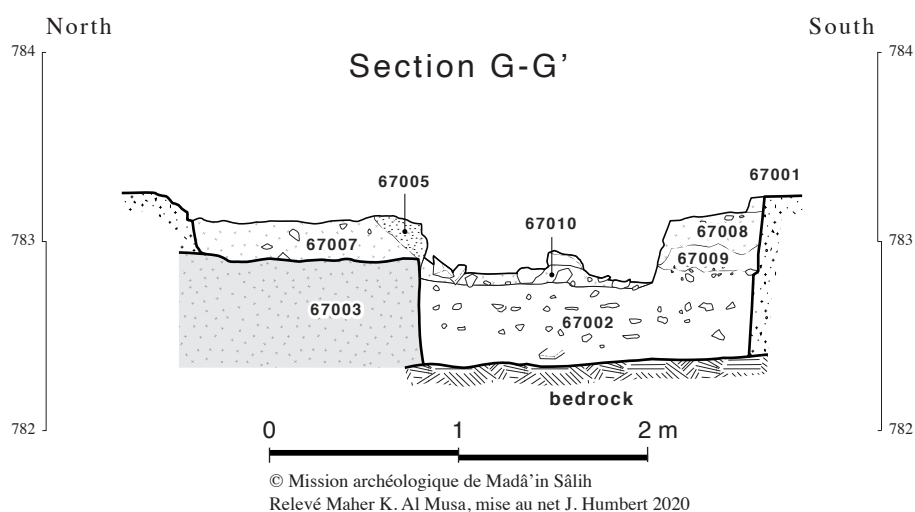


Fig. 5. Eastern section of trench 67000 (see fig. 1).

Area 68000

This trench, measuring 7 x 5 m, is located in the southeastern part of the sanctuary (see fig. 1 in Gazagne's report and **fig. 6–7**). It is bordered on the north by one of the peripheral rooms of the sanctuary. This location was chosen in order to check whether wall 60823, built in the Roman period, which did not appear on the surface, continues further east before possibly turning north. The trench was therefore opened so that the western end of the wall would be in the southwestern corner of the trench. Besides, the latter would allow to make the southern faces of walls 60809, 60810, and 60850 and 60837 visible. The terrain slopes naturally from west to east. The highest point before excavation was thus in the northwestern corner, 783.31 m asl, and the lowest point in the southeastern corner, 782.58 m asl.

The topsoil, locus 68001, is a moderately hard clayey soil with small stones and gravel. It contains pottery sherds and fragments of ostrich eggshells. Seven loci were identified and numbered (**fig. 8**), six of which are successive archaeological layers, including the bedrock, locus 68002 (**fig. 9**), while the seventh, 68007, corresponds to the section of a mudbrick wall east of wall 60823. 68007 does however not extend much to the east, probably due to the effect of rains and floods in this sloping area. It is composed of two courses of mud bricks and it is 3.08 m long, 0.60 m wide and 0.29 m high (**fig. 10**).

Layers nos 68001, 68004, 68005, and 68006 contain a large quantity of rubble composed of fallen building stones some of which are well cut boulders while the majority are building debris. The stones are concentrated in the northwestern part of the trench and fell from the walls which border the trench in the north (**fig. 11**).

It now appears, thanks to the excavations, that wall 60837 is one course only. As for wall 60850, it is one course only in its eastern part and it reaches gradually four courses in its western part. Wall 60810 has three courses and wall 60809 has four. These walls were built on a layer of clay mortar laid over the bedrock. This layer is particularly thick under walls 60809 and 60810 because of the sloping bedrock. It is thinner under walls 60837 and 60850 (**fig. 12**).

The bedrock slopes from west to east. It also slopes from south to north, the lowest level of the bedrock being found under walls 60809 and 60810 at 782.35 m asl.

In conclusion, and contrary to what was expected, no continuity to wall 60823 was put to light. Mudbrick wall 68007 is not considered as being such because it was probably built at a later period.

Area 68100

This trench, measuring 15 x 3 m (see **fig. 6** and **fig. 13**), is located outside the eastern Nabataean temenos wall and includes parts of two Nabataean peripheral rooms. Some of the walls of these rooms are thus included in the trench: 60839, 61017 and 61017 for the middle room; 60857 and 61019 for the northern room. This trench aimed at determining whether a wall doubles the Nabataean temenos wall on this side, as does wall 60823 on the southern side. It also aimed at checking the presence of a wall enclosing the Nabataean peripheral rooms, similar to wall 61033 which encloses them on the northeastern side.

The surface of the trench slopes from south to north and from west to east. The highest point is thus in the southwestern corner, 782.42 m asl and the lowest point is in the northwestern corner, 781.53 m asl. The topsoil is a moderately hard clayey soil with many small to medium stones and gravel as well as pottery sherds.

The work was done in two stages. First, the surface layer, locus 68101, was scraped in all the trench. Under it is a layer of rubble with many fallen building stones, locus 68102, which covers all the trench and gets thicker in its northern part. The earth mixed with this rubble is moderately

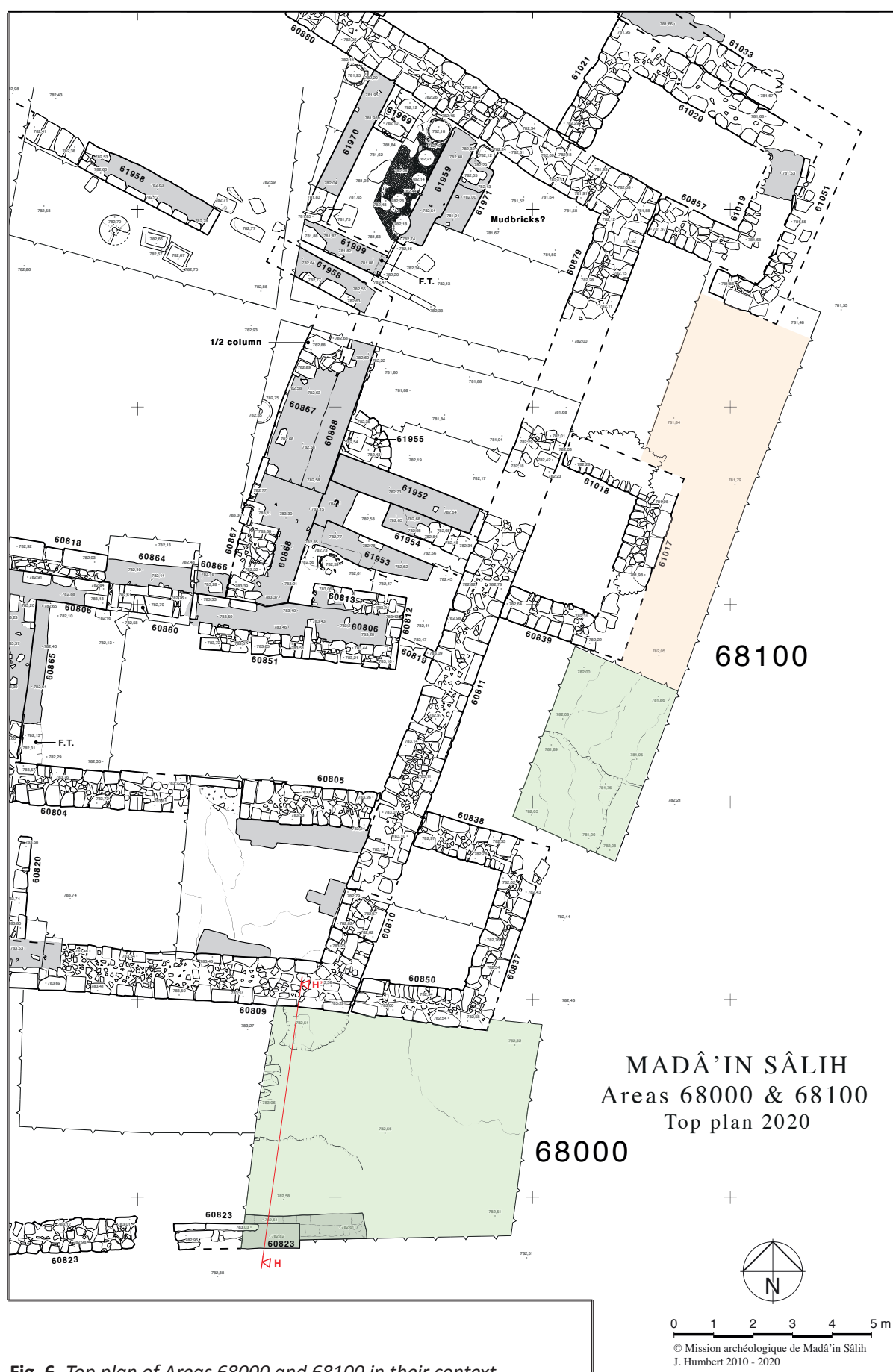




Fig. 7. General view of Area 68000 before excavation.

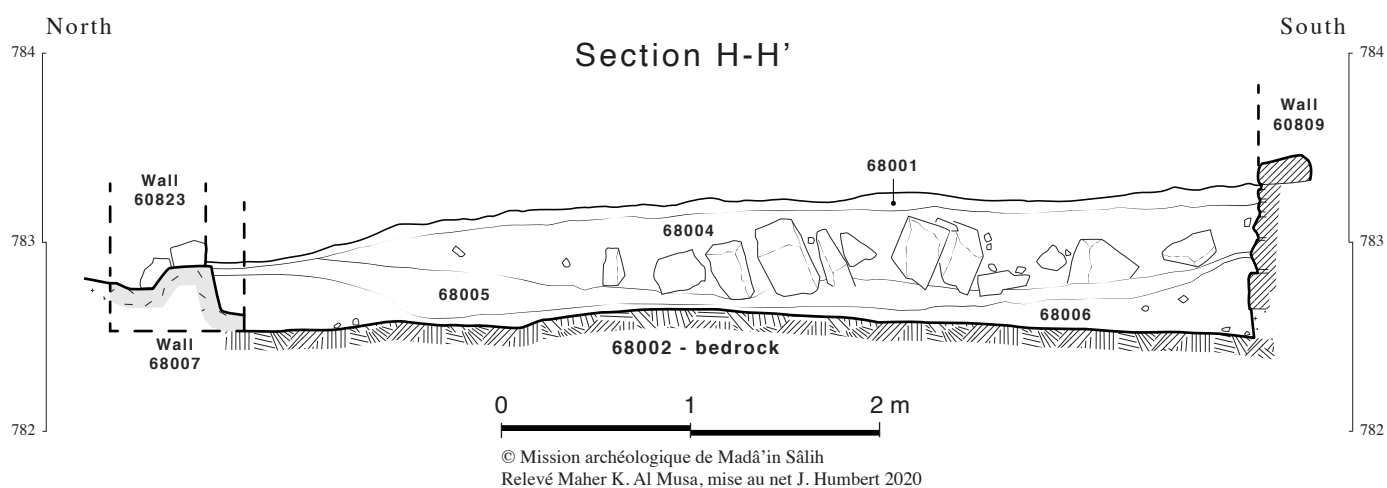


Fig. 8. Western section of trench 68000 (see fig. 6).

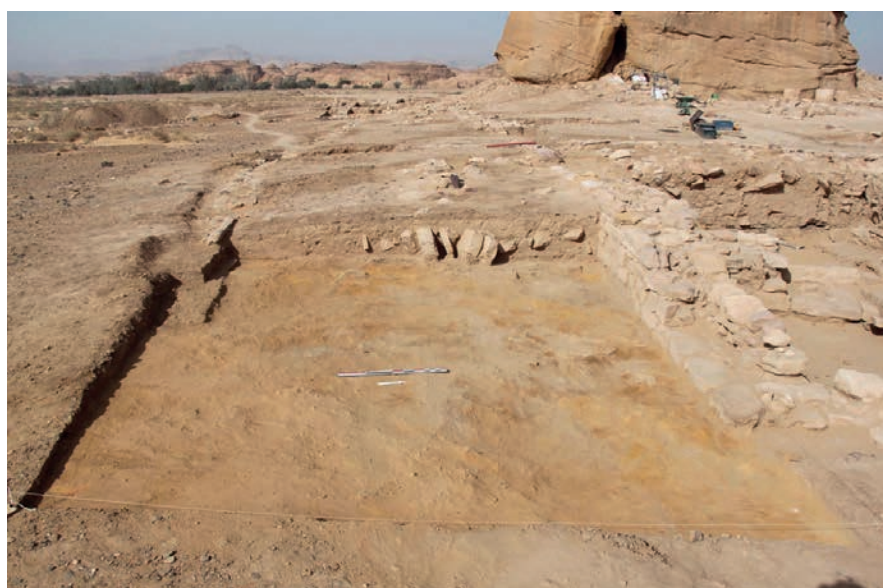


Fig. 9. General view of Area 68000 at the end of the excavations.



Fig. 10. Walls 60823 and 68007.



Fig. 11. Rubble 68001, 68004, 68005 and 68006.

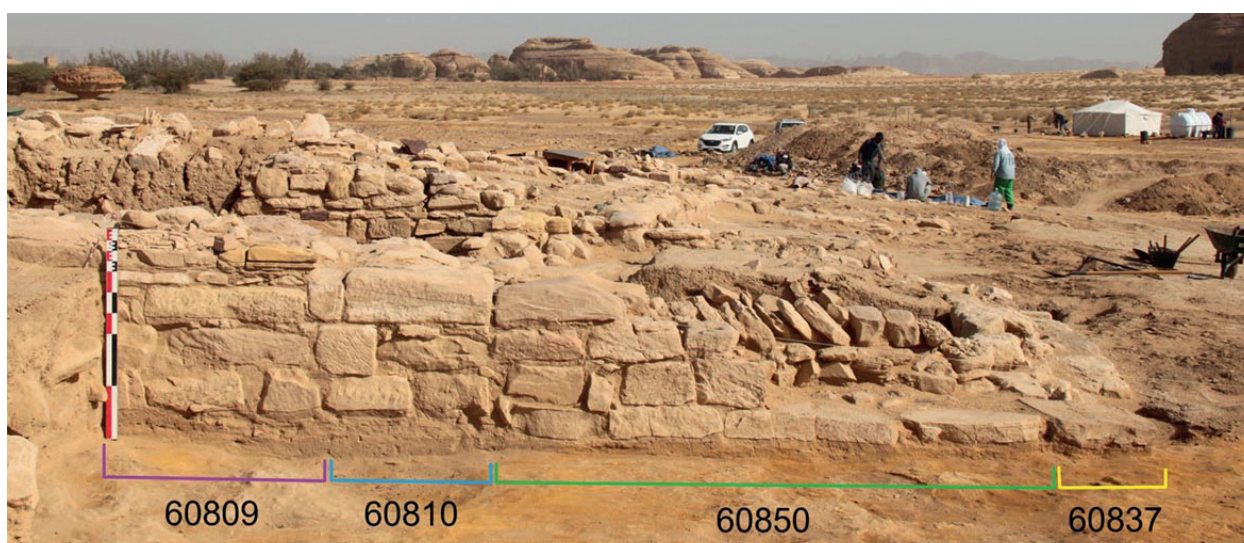


Fig. 6. Top plan of Areas 68000 and 68100 in their context.



Fig. 13. General view Area 68100 before excavation.



Fig. 14. The bedrock in the southern part of trench 68100.



Fig. 15. General view of Area 68100 at the end of the excavations.

hard to hard and is harder east of the middle peripheral room. Second, considering the large size of the trench and the objectives to be reached, it was decided to only scrape the northern part of the trench.

Two *loci* were identified and numbered. The first one, 68103, is a layer of dark-coloured clayey soil. It does not contain any rubble, only one building stone the function of which is undetermined. The second one, 68104, is the bedrock, which is not even. It is higher in the north and the east, 782.13 m asl, than in the south and the west, 781.74 m (**fig. 14**).

The excavations showed that there is neither a wall doubling the temenos wall nor a wall enclosing the peripheral rooms (**fig. 15**).

Area 68200

This trench, 6.65 x 4.24 m (see fig. 1 in Gazagne's report) is located outside the northern Nabataean temenos wall, west of the gate used in the Roman period (**fig. 16**). This trench aimed at checking the presence of both a peripheral room outside this section of the Nabataean temenos and of a wall possibly enclosing it.



Fig. 16. General view of Area 68200 before excavation.

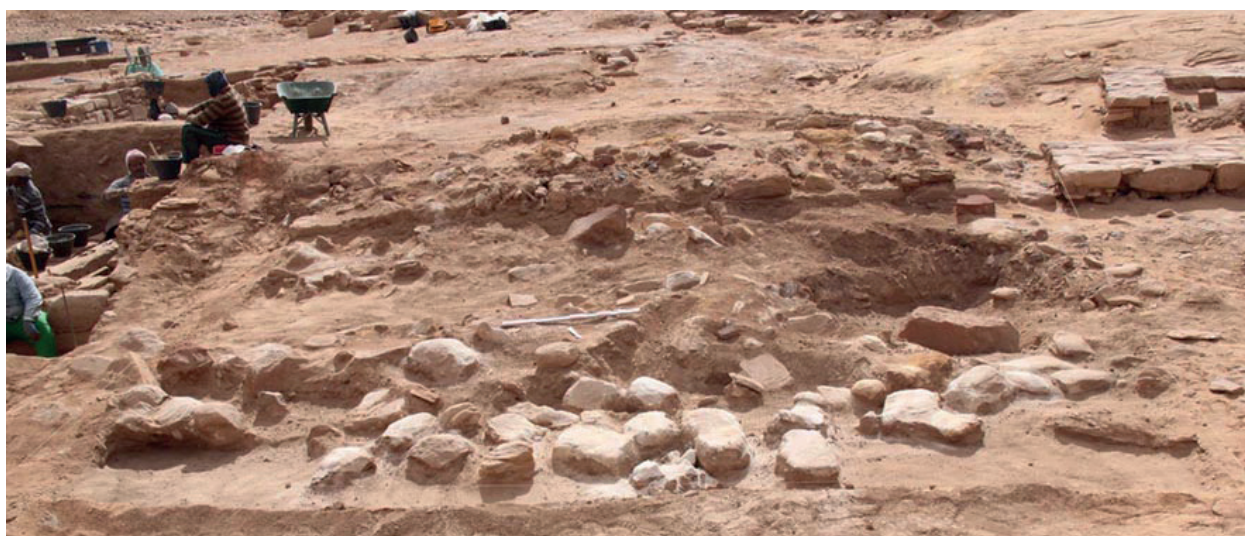


Fig. 17. General view of Area 68200 at the end of the excavations.

Three *loci* were identified and numbered. The first, 68201, is the surface layer, made of a moderately hard clayey soil mixed with stones and gravel, which yielded pottery. The second, 68202, is a layer of clayey soil with rubble. The third, 68203, is a thick layer of rubble. Since the removal of these three layers did not show any trace of either a room or an enclosing wall, the excavations stopped and the bedrock was not reached (**fig. 17**).

Area 68300

This trench, 4 x 5 m (see fig. 1 in Gazagne's report and **fig. 18**) is located west of the previous, immediately outside the Nabataean temenos wall, numbered in this area 60881 and 60872, respectively east and west of a door in the wall. The trench aimed, again, at determining the presence of both a peripheral room and of a wall possibly enclosing it.

Seven *loci* were identified and numbered, three of which are successive archaeological layers while three others, 68304–68306 form the walls of a newly discovered peripheral room. 68301 is the surface layer, made of a brittle clayey soil mixed with stones and gravel, which yielded pottery. The second, 68302, is a clayey soil with rubble, which was uncovered within the walls of the peripheral room. A basin, 68307, only one part of which was uncovered due to lack of time at the end of the season, was put to light in this layer (**fig. 19**). The third, 68303, is a layer of clayey earth mixed with stones which extends west of wall 68306.

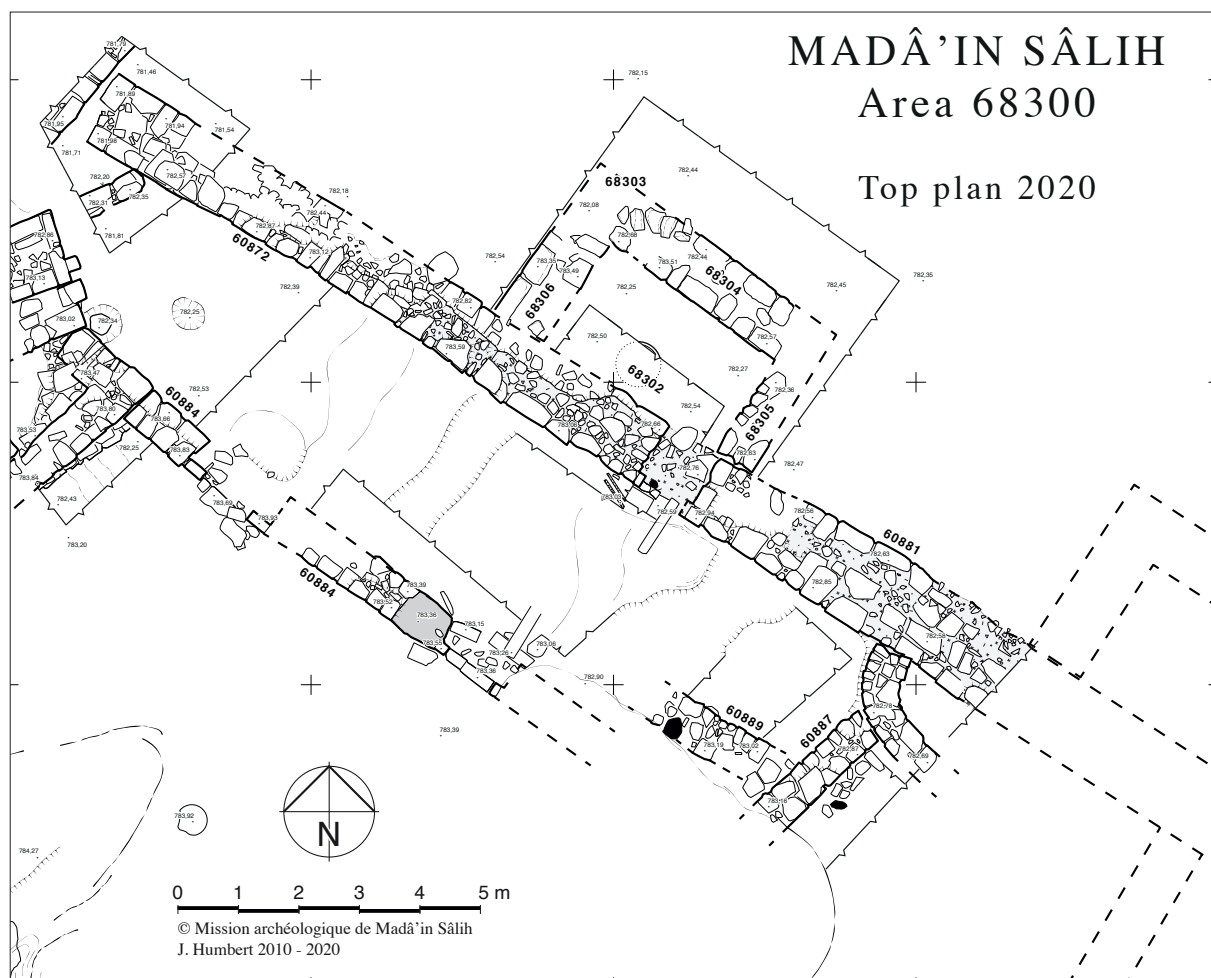


Fig. 18. Top plan of Area 68300 in its context.



Fig. 19. Basin 68307.



Fig. 20. Bronze figurine 68302_M01 before and after cleaning.

Wall 68304 is 3.79 m long, 1 m wide and 0.34 m high. Wall 68305 is 1.75 m long, 0.60 m wide and 0.34 m high. Finally, wall 68306 is 1.90 m long, 0.90 m wide and 0.44 m high. We are now certain that there was a peripheral room in the Nabataean period outside this section of the temenos wall.

The most interesting *loci*, for the analysis of the pottery, are 67010 and 68302. The former gives a *terminus ante quem* for the removal of part of the southern section of the Nabataean temenos wall. As for the second, it can be compared with the *loci* excavated in 2019 in the south-eastern peripheral room (Trench 5, see the 2018–2019 report p. 27 and 31), particularly *locus* 61909/61910, dated to the last occupation phase of the site, late 4th–early 5th century AD.

The most conspicuous find was put to light in *locus* 68302 (fig. 20). It is a camel bronze figurine equipped with a saddle fixed by two straps going round the abdomen and one strap going round the lower part of the camel's neck. Immediately behind the saddle a blanket is probably folded. Finally, two bags hang on the back sides of the camel.

The various trenches opened in 2020 in the periphery of the sanctuary IGN 132 answered all the questions that were still pending and were therefore very useful. They clarified the plan, particularly as far as the Nabataean peripheral rooms and the way they are enclosed in the Roman period are concerned.

References

Nehmé L. (ed.) 2020. *Report on the 2018 and 2019 Seasons of the Madâ'in Sâlih Archaeological Project*. Paris. <https://hal.archives-ouvertes.fr/hal-02869017>

Preliminary Study of the Architectural Blocks and Stuccos Exposed in 2020 in IGN 132

Jacqueline DENTZER-FEYDY (CNRS)

Columns *in situ*

Two column bases were cleared in 2020 in sector 66000 (**fig. 1**), directly west of outcrop IGN 132, on the terrace that stretches in front of rock-cut room IGN 132a (see **fig. 1** in D. Gazagne's report). With 2.20 m between them and practically in the same alignment as the north-west pillars, they probably supported a propylaeum or entrance porch. However, their foundations are crude and they are not on the same level. Furthermore, at least one of the bases is not in its original position and the diameters of the column shafts are different. All these factors indicate that these features were all reused.

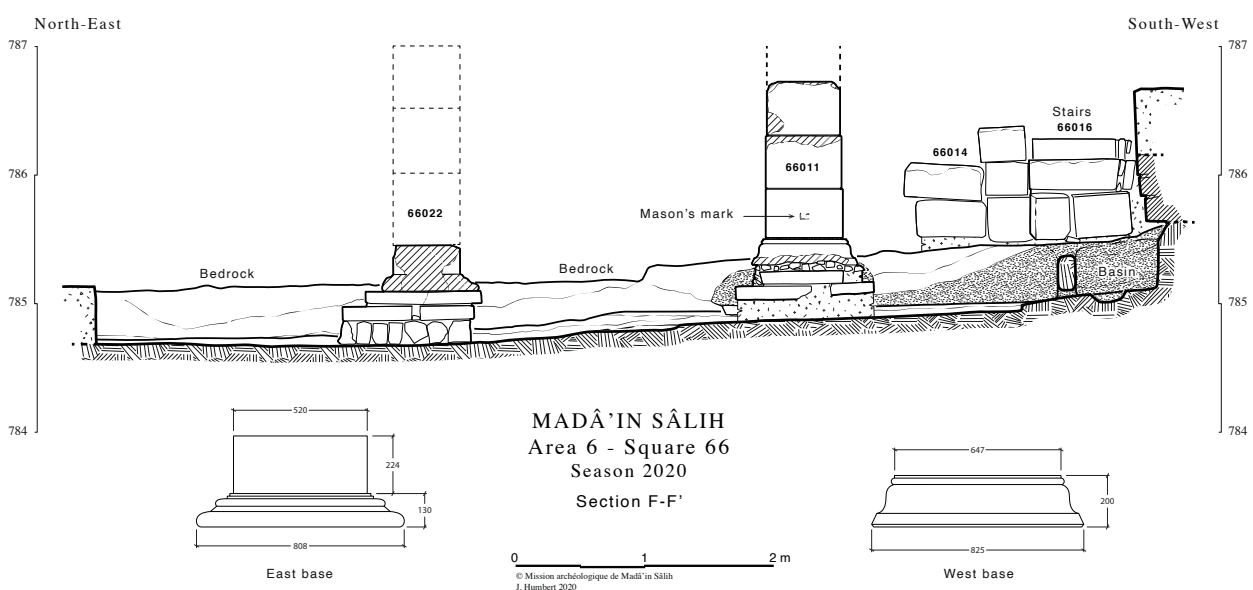


Fig. 1. North-east-south-west section of the two columns in sector 66000.



Fig. 2. *Foundation of column 66011.*



Fig. 3. *Another view of column 66011.*

Column 66011 (fig. 2–3)

Base: H 20 cm; lower diameter 82.5 cm; upper diameter 64.7 cm.

The block's profile (see the profile in the section drawing) shows quite clearly that it is not a column base but the lower section of a plain, Corinthian-type Nabataean column capital. The block was turned upside down to serve as a column base. The capital's original lower diameter is 64.7 cm, thus corresponding to the original shaft's upper diameter. One can distinguish the ogee profile ending in a bevel that corresponds to the stylized crown of leaves of the capital. It should be noted that in capitals of this type, there are normally two superimposed bevels for the two crowns of leaves.¹ This case is a significant anomaly. In view of this, one can speculate whether this is the full height of the block and whether the upper section with the second bevel was recarved before reuse. According to orders constructed and sculpted at Petra and Madā'in Šālīḥ/

1. Nehmé, Bessac, Braun, and Dentzer-Feydy 2015, I: 301–304.

Hegra as well as at Boṣrā, it is noted that the total height of a capital of this type is more or less equal to its lower diameter² and that the two superimposed sections of these capitals are more or less of equal height. However, the upper section can be higher by a ratio of 3 to 2 rather than 1 to 1. In the case of this reused capital, as the lower diameter measured 64.7 cm, its original height with the upper section must have measured about 64–65 cm. The upper section must, therefore, have been considerably higher than the lower section, even if the lower section is incomplete. This difference in height can be seen at Hegra on capitals of the same type in tomb IGN 17 (AD 31–32).

A mason's mark was carved at about mid-height on the lower column drum. It is probably the Nabatean letter *b* rotated 90° to the right.



Fig. 4. Column 66022.

Column 66022 (fig. 4)

Base: H 13 cm; lower diameter 80.8 cm; upper diameter 52 cm.

The base of column 66022 is indeed a column base, but it is so broken and eroded that its profile can no longer be distinguished. We must therefore rely on Jean Humbert's drawing (see the section drawing above). This base had an Attic profile consisting of a torus, a scotia, and a torus followed by two inverted fillets. The scotia was more or less straight and the proportions of the mouldings are unusual: the lower torus was clearly larger and was considerably more prominent in relation to the upper torus. No Attic bases were found on the rock-cut facades of the site.³ On the other hand, this type of base is well represented at both Petra⁴ and Boṣrā.

Isolated capital 66025 (fig. 5–6)

H: 20 cm; lower diameter: 40 cm; upper diameter: 54.4 cm.

Upper section of a plain, Corinthian-type Nabataean capital. This block was placed over a lower block similar to the block reused upside down for column base 66011. For this type of Nabataean

2. Nehmé, Bessac, Braun, and Dentzer-Feydy 2015, I: 310, n. 510; McKenzie 1990: 28, n. 6.

3. Nehmé, Bessac, Braun, and Dentzer-Feydy 2015, I: 282–283.

4. McKenzie 1990: pl. 50e, Temple of the Winged Lions; pl. 50f, Tomb with Urn; pl. 50g, theatre; pl. 50h, column base in the Street of Porticos; pl. 50j, Temenos Gate, east face, north column; Kader 1996: 124, fig. 60, profile P6, fig. 61, profile 3. On these column bases, which are larger than the Nabataean arch, an inverted cavetto or an inverted ogee and fillet mark the transition between the column base and the shaft.

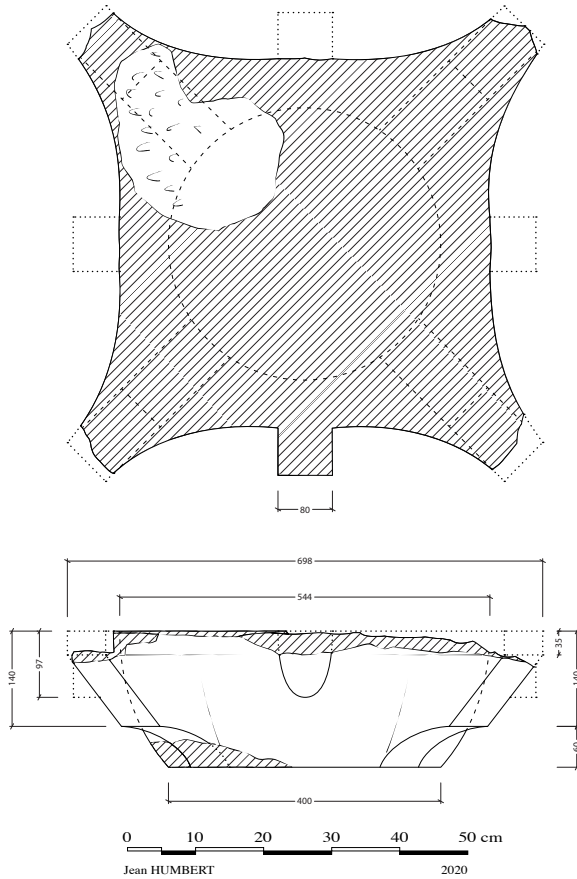


Fig. 5. Plan and elevation of capital 66025.

capital, in other words from the top of the column shaft, was lower than 40 cm.

capital, this is a normal and classic construction.⁵ As it was found close to reused columns, it was also probably reused. The shape of the original capital can be easily reconstructed in two sections, although the dimensions can only be approximate: 1) for a height of 20 cm, the measurement can be doubled to about 40 cm if the proportions correspond to what is frequently noted at Petra, but the lower section can be lower in height than the upper section, as is noted above regarding the lower section of a capital reused as a column base; 2) the lower diameter of the preserved block (40 cm) is normally higher than the lower diameter of the original capital; 3) on the capitals of the rock-cut facades of Madā'in Šālīh, one can observe that the width at the top of the capital in relation to the width of the pilaster is close to 2, except on two examples where the proportion lies between 1.7 and 1.8.⁶ On this capital, the width at the top being 69.8 cm, we can with relative certainty assume that the lower diameter of the original



Fig. 6. Marie Peillet working to strengthen and protect capital 66025.

5. McKenzie 1990: diagram 14, type G; Nehmé, Bessac, Braun, and Dentzer-Feydy 2015, I: 301–304.

6. Nehmé, Bessac, Braun, and Dentzer-Feydy 2015, I: 301.

Original dimensions of the columns

If the diameter of the column that supported capital 66025 was probably lower than 40 cm, what about the base of column 66022 and the capital reused as the base for column 66011? The base of 66022 supported a column whose shaft measured 52 cm at the base, while the capital serving as a base for 66011 rested on a column whose shaft measured 64.7 cm at its top. These elements therefore belonged to different-sized architectural features. According to the proportions identified at Petra⁷ and Boşrā, as well as Vitruvius' suggestions,⁸ the height of the column was between 8 and 8.5 times the lower diameter of the column shaft. In fact, one can observe a proportion of 8.18 at the Qaşr al-Bint at Petra, 8.16 on the applied order of the Nabataean arch at Boşrā, and 8.5 on the preserved order *in situ* of the surviving pillar X east of the Nabataean arch. One can thus assume that capital 66025 crowned a column measuring 2.80 to 3 m high, base 66022 supported a column 4.20 to 4.40 m high, and capital 66011 crowned a column 5.20 to 5.50 m high.

It is worth remembering that thirty-four column drums were discovered during the 2017 season in the sanctuary area of IGN 132, some of which are close by. They were recorded by Delphine Seigneuret in the project's 2017 report.⁹ She identified three groups: the first, 50 to 56 cm in diameter, to which base 66022 could be connected. This diameter corresponds to that of the columns of the tetrapylon in the 'high temple'. The second group comprises drums 60 to 64 cm in diameter. Capital 66011, although of a slightly larger diameter, could be connected to this series. The third group, 68 to 70 cm in diameter, is not represented in the blocks exposed in 2020 and studied here. On the other hand, the hypothetical variation of less than 40 cm in diameter is not represented in the drums recorded in 2017, although two drums measuring 34 cm in diameter, 66021 and 66026, were discovered in 2020, the second one close to capital 66025.

Stuccos

Fragments of stucco were found either in or on two loci in sector 66000, namely 66017 (final layer above the rock) and 66018 (the rock), very likely not far from their original position. They covered a wall or rock face and possibly a ceiling. In the Nabataean world, and more broadly in the Mediterranean and Eastern Greco-Roman world, stucco facing and coating was certainly very frequent in interior spaces and even on exterior walls, as attested by examples recorded on the facades of the Hegra tombs¹⁰ and on various built structures at Petra.¹¹ These stuccos were utilized to highlight the architectural and decorative framework built or cut in the rock. They could also form a decoration on a smooth supporting surface, which is probably the case for the fragments found here. Indeed, the fragments are a few centimetres thick and the backs of the stuccos fixed onto

7. Zayadine, Larché, and Dentzer-Feydy 2015: 137, fig. 3.

8. Vitruvius, *De architectura*, III, 3,10 and IV, 1,1 and 1,7. See in Book III the commentary by P. Gros, p. 117–120 and the graphic diagram p. 100–101, fig. 12.

9. Seigneuret 2017.

10. Nehmé, Bessac, Braun & Dentzer-Feydy 2015, II: pls. 45, 48, 50, 63, 68, 74, 79, 81, 82, 102, 107, 110, 125, 130, 131, 154, 162, 174, 176, 178, 179, 181, 189, 191, 192, 193, 194, 201, 203.

11. See the articles by J. Dentzer-Feydy, C. Vibert-Guigue, A. Hamm, A. Chambon and P. Linant de Bellefonds in Dentzer-Feydy, Guimier-Sorbets, and Delplace 2019; Fournet, forthcoming.

the wall or rock support are relatively flat. No fixing tenon has been observed on these fragments, indicating that the stucco adhered to the support quite well.

66017_PI01 (fig. 7–8)

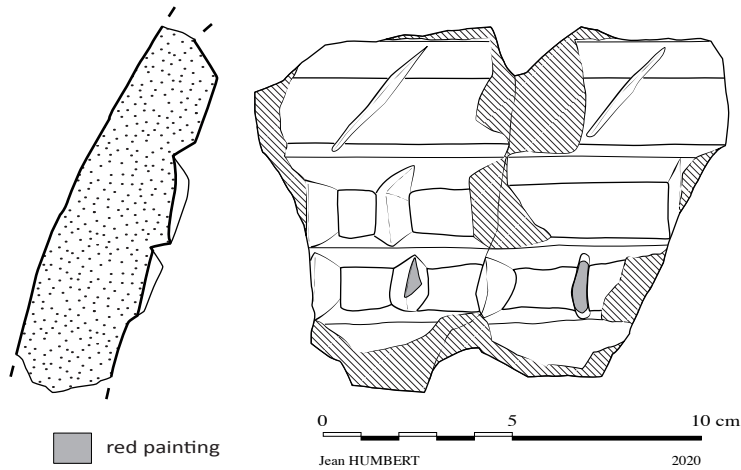


Fig. 7. Drawing of fragment 66017_PI01.



Fig. 8. Photograph of fragment 66017_PI01.

Fragment of moulded crowning: flat band, flattened beaded moulding (?), projecting bevel, projecting bevel with oblique striations. Traces of white and red paint.

L: 12.4 cm; H: 9.2 cm; T: 3.3 cm.

66017_PI02 (fig. 9–10)

Fragment of moulded crowning: row of dentils (three preserved) under a projecting listel, beaded moulding (?) underlined with red dots, projecting bevel with oblique striations (?), beginning of a projecting bevel with a round, projecting motif visible on the drawing, but less clear on the photograph.

L: 10.7 cm; H: 9.5 cm; T: 3.8 cm.

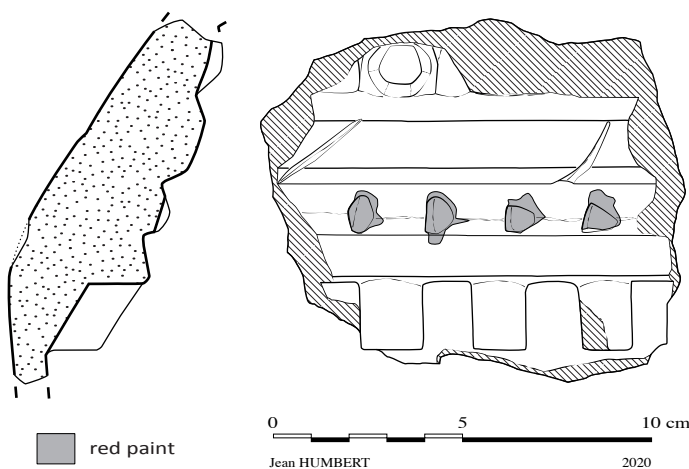


Fig. 9. Drawing of fragment 66017_PI02.



Fig. 10. Photograph of fragment 66017_PI02.

66018_P101 (fig. 11–12)

Fragment of moulded crowning: row of dentils (three preserved) under a projecting listel, beaded moulding (?) underlined with red dots, projecting bevel with oblique striations (?). Traces of white and red paint.

L: 10.1 cm; H: 10 cm; T: 4.8 cm.

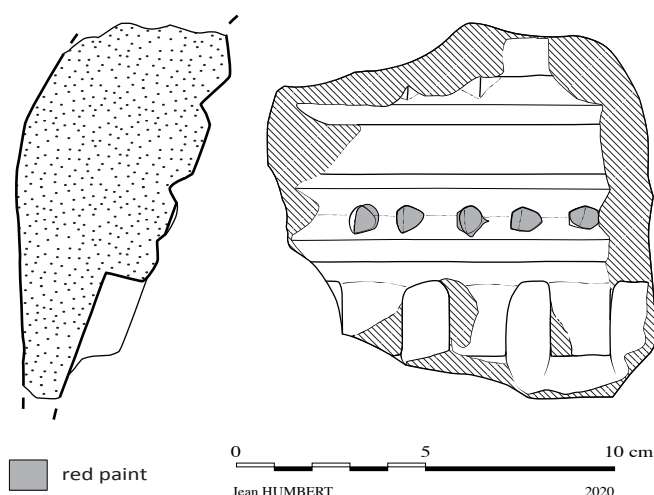


Fig. 11. Drawing of fragment 66018_P101.



Fig. 12. Photograph of fragment 66018_P101.

66018_P102 (fig. 13–14)

Fragment of panel consisting of a band limited on one side by a bevel and on the other by the corner of a frame inside which a figured representation can be identified, possibly depicting a running animal seen in profile. This fragment probably comes from a wall frieze. According to the conservator Marie Peillet, the back of the fragment has a horizontal notch used for fixing into the stuccoed decoration.

L: 7.9 cm; H: 10.3 cm; T: 5.3 cm.

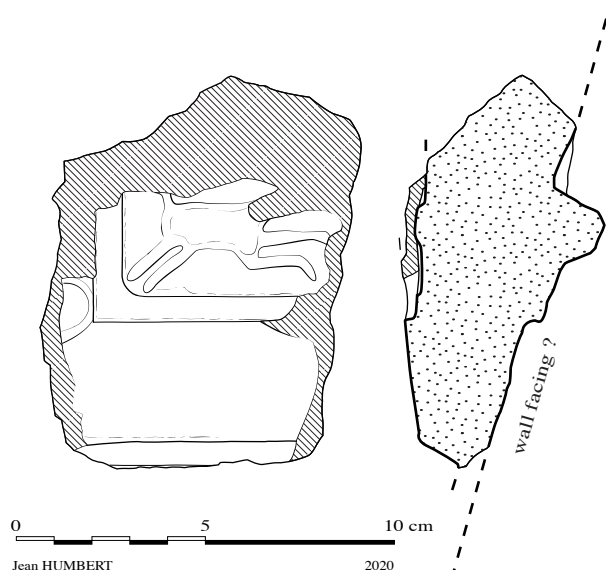


Fig. 13. Drawing of fragment 66018_P102.



Fig. 14. Photograph of fragment 66018_P102.

66018_P103 (fig. 15–16)

The visible part of this corner fragment is a narrow (4.4 cm) band from which a curvilinear decoration projects, highlighted by red and grey or black concentric circles. Neither the lower nor upper face appears to have been visible.

L. 12.9 cm; H: 10.6 cm; T. 4.4 cm.

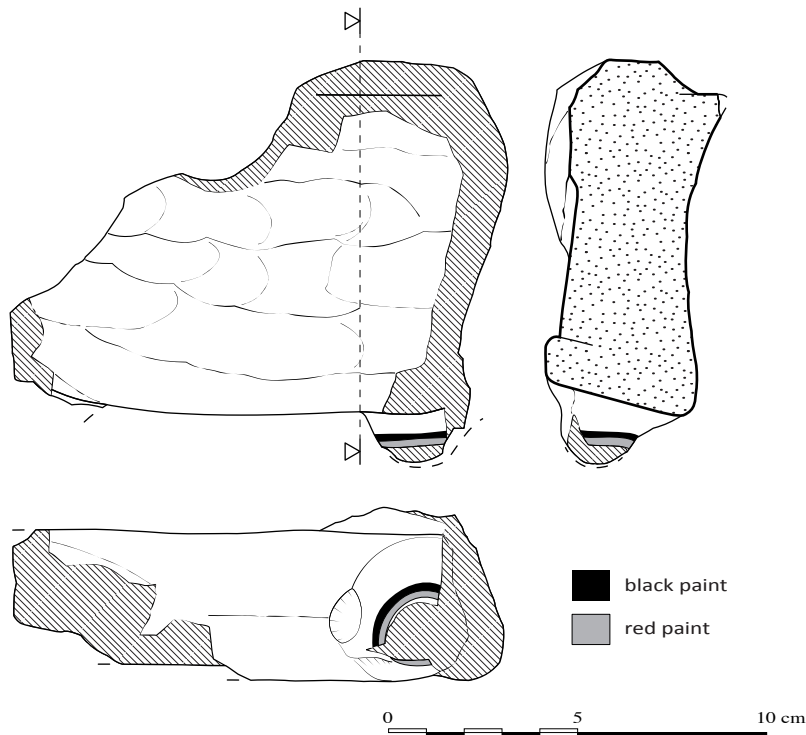


Fig. 15. Drawing of fragment 66018_P103.



Fig. 16. Photograph of fragment 66018_P103.

66018_P104 (fig. 17–18)

Two projecting strips connected to a common feature have been preserved on this very small fragment. Although the shape resembles dentils, it is difficult to confirm this because the strips are slightly curved. According to Marie Peillet, this might represent a plant of some kind. Traces of green paint.

L: 7.6 cm; H: 7.3 cm; T: 2.4 cm.

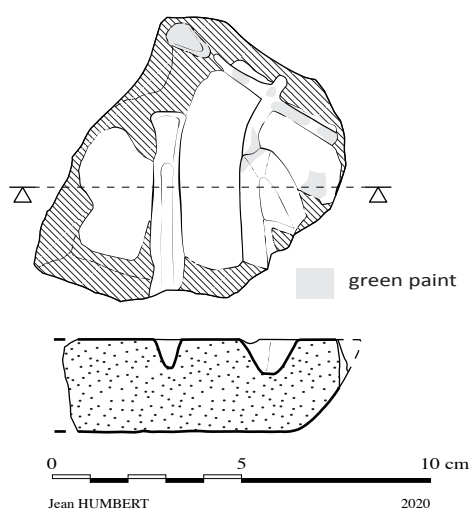


Fig. 17. Drawing of fragment 66018_PI04.



Fig. 18. Photograph of fragment 66018_PI04.

66018_PI05 (fig. 19–20)

Fragment of moulded crowning: flat listel, projecting listel, projecting bevel.

L: 6.8 cm; H: 6.2 cm; T: 3.5 cm.

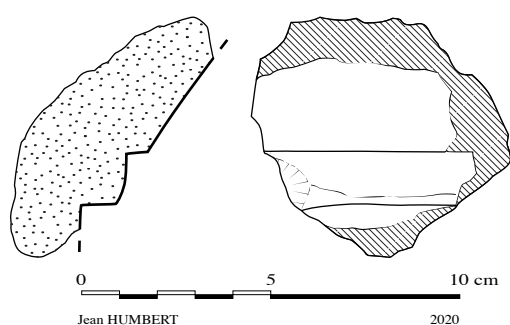


Fig. 19. Drawing of fragment 66018_PI05.



Fig. 20. Photograph of fragment 66018_PI05.

66018_PI06 (fig. 21–22)

Fragment of moulded frame or crowning: band, channel, band. According to Marie Peillet, this fragment is made of plaster, not stucco.

L: 7.1 cm; H: 5.7 cm; T: 4.2 cm.

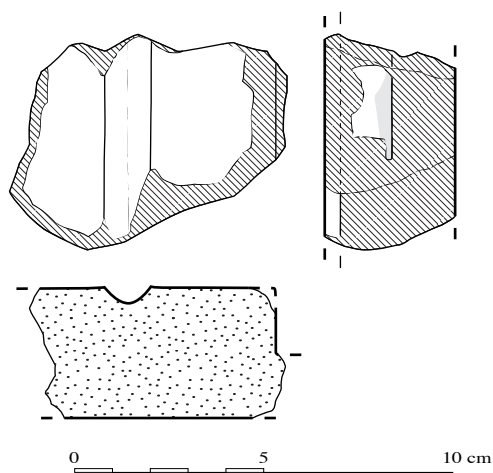


Fig. 21. Drawing of fragment 66018_PI06.



Fig. 22. Photograph of fragment 66018_PI06.

Fragments 66017_PI02 and 66018_PI01 allow us to reconstruct the moulded sequence of an Ionic-type Greco-Roman wall crowning: a row of dentils under a projecting listel, a beaded moulding decorated with red dots to suggest a row of beads, a projecting bevel decorated with oblique striations, and the beginning of a moulding decorated with projecting round motifs. In this succession of mouldings, we would expect a projecting drip mould above the pearl moulding. In view of the slight distortion of the model, one can assume that the projecting bevel with striations corresponds to the drip mould and that the beginning of the moulding above the red and black decorative spots corresponds to a crowning sima whose motifs are difficult to identify. Although slightly larger and without any surviving dentils, fragment 66017_PI01 is connected to a crowning of the same type.

According to the preserved faces, fragment 66018_PI03 appears to have been visible only from the side decorated with a decorative painted boss-like feature, but it is difficult to place it within a decoration.

As was noted in the catalogue, the fragment with a figured decoration 66018_PI02 could have been part of a frieze, for example at mid-height on a wall or under the crowning of the top of a wall. From what we know of Greco-Roman wall decoration, the first hypothesis seems the most likely. In the same Nabataean sphere, one can connect this fragment to stucco fragments found in the temple of Dharih.¹²

These few elements attest to the existence of a system of wall decoration inspired by Greco-Roman models, but with a fairly crude level of execution. One notes the use of highlights in white, black, grey (?), and red paint, as have been recorded on some of the rock facades on the site, to which green can be added.

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12. P. Linant de Bellefonds in Dentzer-Feydy, Guimier-Sorbets, Delplace 2019.

Pottery Study 2020

Caroline DURAND (Afalula)

The 2020 season of the Madā'in Šālīḥ Archaeological Project took place from February 1st to 29th. The study of the pottery material was under the responsibility of the author. The drawings and photos were made by Ariadni Ilioglou. Marie Peillet was in charge of the conservation. The work focused on the pottery material uncovered during the 2019 season, as well as on part of the material uncovered in 2020. The rest of the 2020 pottery material from Areas 61000 and 66000 to 69000 will be processed during the next seasons. In addition, verifications were carried out on the pottery material from earlier seasons in view of the publication of the pottery volume in preparation.

Pottery from the Roman fort (Area 34)

A considerable quantity of pottery material was put to light in 2019 in the area of the Roman fort, excavated by Zbigniew Fiema (see Durand 2020: 71–74; Fiema 2020: 16–18). Ten previously unstudied *loci* were examined this year (see the list in Appendix). They correspond mainly to the upper levels of Area 34500. A large amount of pottery collected on the surface (*loci* 34500, 34501 and 34502) included many complete profiles which belonged to all the phases of occupation in the area. Below the surface layers, *locus* 34512 was very homogeneous and contained an important quantity of pottery (**fig. 1**), in particular many pithoi/storage jars (34512_P02 and P03), large basins (34512_P06), jars (34512_P09, P10 and P12) and cooking-pots (34512_P14, P15, P16 and P18). This pottery material can be dated to the last occupation phase of the site, most probably between the late 4th and early 5th century CE. Also interesting is *locus* 34526 which, like 34512, contained a lot of pottery, especially many pithoi, and may be interpreted as a dump (**fig. 2**). The pottery material from this *locus* can be dated mainly to the Roman period, i.e. 2nd–3rd century CE.

Pottery from IGN 132 area (Area 61)

The 2019 pottery from the sanctuary area IGN 132 (Area 61), excavated by Damien Gazagne, included material from Soundings 4, 6, 8 and 9 (see the list in the Appendix). Despite the very fragmentary aspect of the pottery, the most interesting sequence was found in Sounding 8, where a craft activity took place and where several kilns—probably bread ovens (*tannūr*)— were discovered (Gazagne & al-Juhany 2020: 42–47). The *loci* corresponding to the use of these ovens are nos 61947, 61963, and 61964. They can be dated to the second half of the 4th or the early 5th century CE, i.e. of the latest occupation phase of the site. During this period, the area of the former Naba-

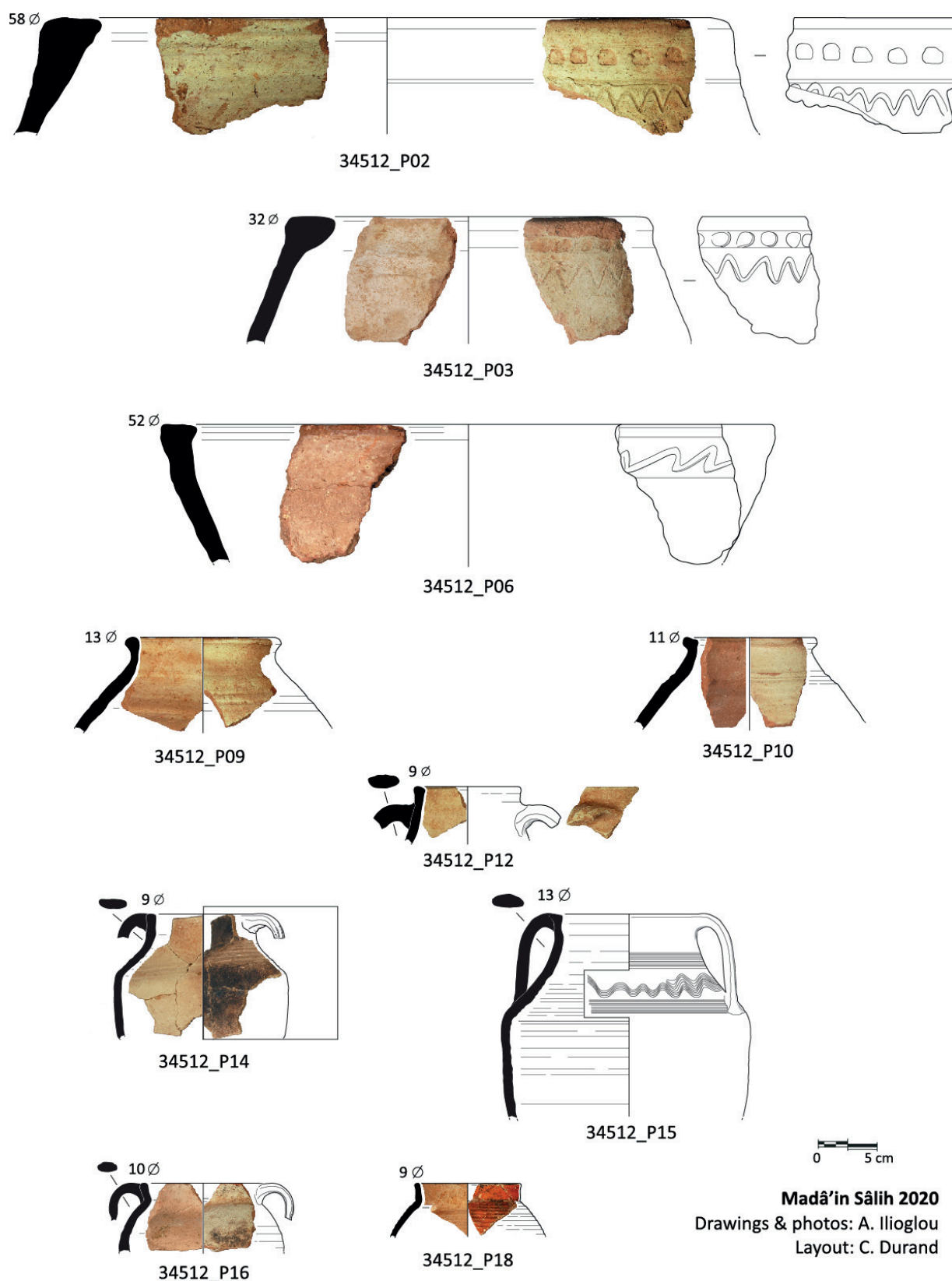


Fig. 1. Pottery selection from locus 34512.

taean, then Roman, sanctuary was reoccupied and transformed into a domestic quarter. Pottery from *locus* 61972 (level of collapse) can be dated to the 3rd century CE (possibly late 3rd) and probably corresponds to a transitional phase corresponding to the transformation of the area.

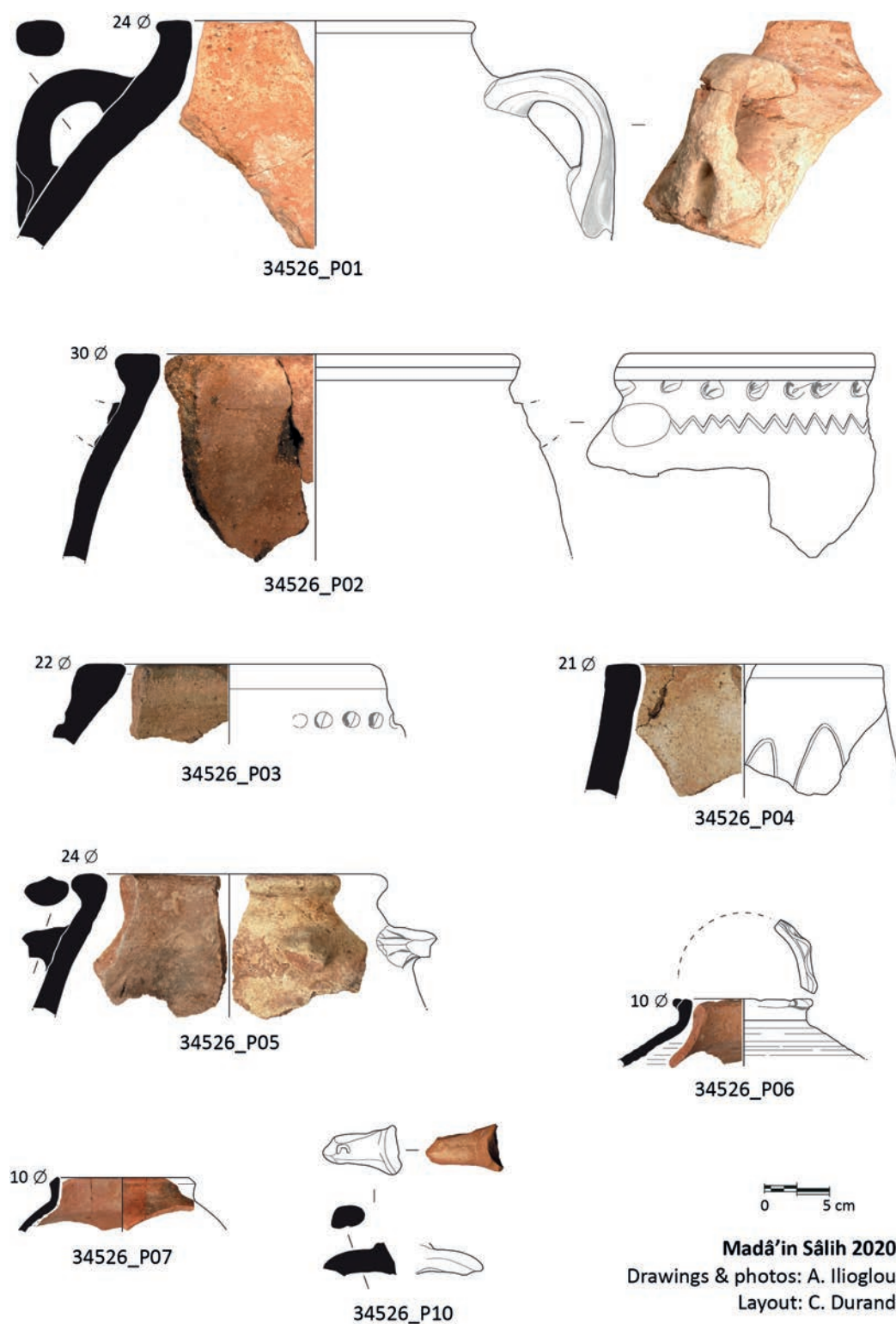


Fig. 2. Pottery selection from locus 34526.

Below this layer, previous occupation levels (*loci* 61974, 61976 and 61977) contained very few pottery sherds. Based on the fabrics, they can probably be dated to the Roman period (2nd–3rd century CE). As for the Nabataean layers, they seem to have been completely dismantled.

The pottery material uncovered during the 2020 season will be studied next year. Only *loci* 61258 and 61235 were recorded as a priority. They correspond to an occupation level in a storage room

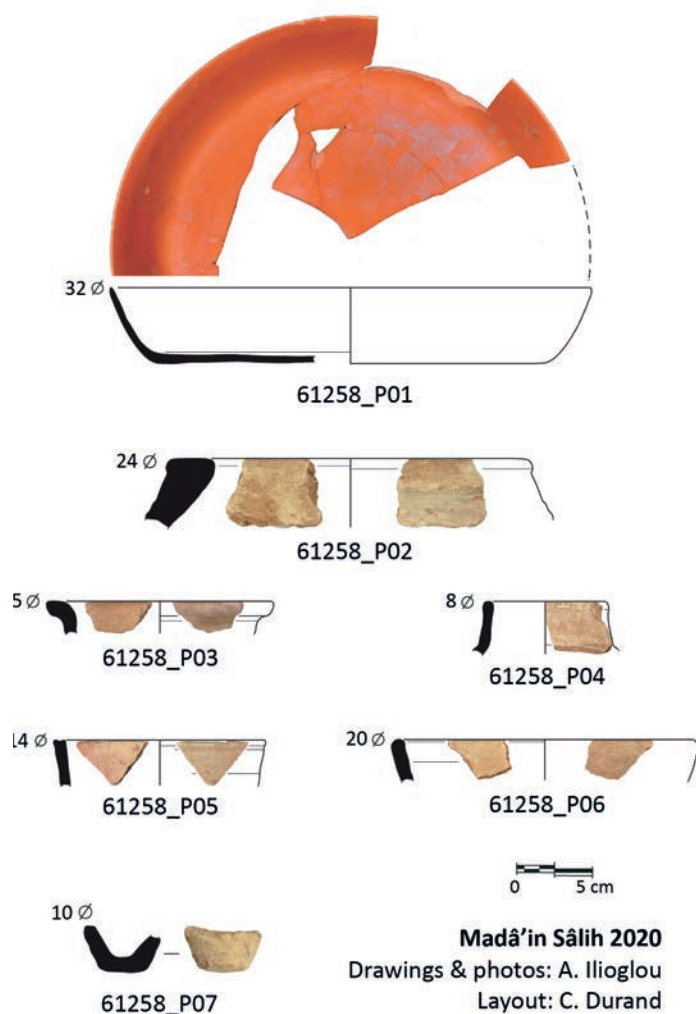


Fig. 3. Pottery selection from locus 61258.

where several stone basins were found *in situ*. The pottery assemblage (fig. 3) contained a remarkable and almost complete imported African Red Slip plate (61258_P01), belonging to the type Hayes 50A (Hayes 1972: 68–73 and fig. 12). This type of imported fine ware, dated to the 3rd–4th century CE, is rather rare in Hegra, especially in such a good state of preservation. The rest of the assemblage is composed of local common ware.

Pottery from IGN 131 (Area 62)

In addition of the two main excavated areas, a small rocky massif known as IGN 131, particularly difficult to access, was explored thanks to the presence of two professional climbers. The flat top of this massif was partly cleared (see the introduction), revealing a rock-cut structure that may be interpreted as a *triclinium*, as well as two pit graves. Numerous pottery sherds were found on the summit of the outcrop as well as on its slopes, particularly on the small intermediary terrace on the west (*locus*

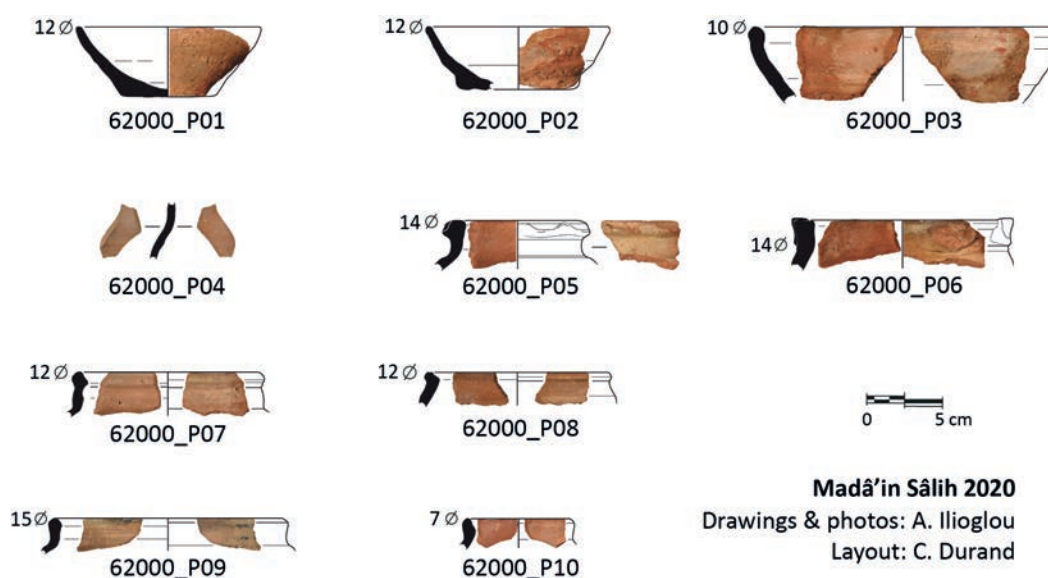


Fig. 4. Pottery selection from IGN 131.

62000). The pottery is very homogeneous and seems to be dated exclusively to the Nabataean period, i.e. 1st century CE (**fig. 4**). It includes many local everted bowls (for example 62000_P01, P02 & P03), fragments of jars with pinched rim (62000_P05) and cooking-pots (62000_P06, P07 & P08). These types, especially the bowls, are characteristic of the Nabataean banqueting tableware which can be associated with Nabataean *triclinia*. They were already observed in Hegra, for example in the Jabal Ithlib. Considering how close IGN 132 (the main sanctuary in Hegra) is to IGN 131, it can be assumed that the banquets which took place on the summit of IGN 131 were one way or the other related to the rituals practiced in the sanctuary.

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Appendix: List of *loci* recorded in 2020

Area 34000 (Roman fort)

Locus number	Description	Date
34500–34501	Surface, large quantity of pottery material; many profiles	Mixed, all periods
34502	Surface	Mixed, all periods
34512	Large quantity of pottery material	Last occupation phase (late 4th–early 5th c. CE)
34518	Only few diagnostics	Last occupation phase or slightly earlier (early 4th c. CE?)
34519		2nd–3rd c. CE?
34524–34525	Seem homogeneous	End of Nabataean period/early Roman period
34526	Large quantity of pottery material; possible dump	2nd–3rd c. CE
34537	Few material	2nd–3rd c. CE
34066	Surface; few diagnostic sherds	Mixed, Roman period/last occupation phase

Area 61000 (sanctuary IGN 132)

Locus number	Description	Date
Sounding 4		
61983	Floor; corresponds to 61908 & 61915 (studied in 2019)	Last occupation phase (late 4th–early 5th c. CE)
61944		Mixed, Roman period/last occupation phase
61948		Mixed, Roman period/last occupation phase
Sounding 6		
61925	Fireplace; little pottery material	Mixed, Nabataean/Roman period?

Locus number	Description	Date
61929		Mixed, Nabataean/Roman period
61930	Very little pottery material	2nd–3rd c. CE?
61931		Mixed, all periods
61933		Mixed, all periods
Sounding 8		
61932	Level of abandonment	
61947	Phase of use of the ovens, upper level	Last occupation phase (mid-4th–early 5th c. CE)
61963	Phase of use of the ovens, middle level	Last occupation phase (mid-4th–early 5th c. CE)
61964	Phase of use of the ovens, lower level	Last occupation phase (mid-4th–early 5th c. CE)
61965	Backfill; few diagnostic sherds	4th–early 5th c. CE
61972	Collapse; transitional phase, reorganisation of the sanctuary area	(Late?) 3rd c. CE
61974	Floor; few diagnostic sherds	2nd–3rd c. CE
61976	First occupation phase; very little pottery material	1st–3rd c. CE?
61977	Fireplace; only 1 sherd	1st–3rd c. CE?
Sounding 9		
61989	Earliest level; rock bottom	Last occupation phase (late 4th–early 5th c. CE)
2020 season		
61235–61258	Storage room, occupation floor; presence of an imported <i>ARS</i> plate	3rd–4th c. CE

Area 62000 (outcrop IGN 131)

Locus number	Description	Date
62000	West slope, intermediary terrace; many bowls	Nabataean period (1st c. CE)
62001	South slope	Nabataean period (1st c. CE)
62002	North terrace	Nabataean period (1st c. CE)
62003	Summit; central area, surface	Nabataean period (1st c. CE)
62004	Summit; pit tomb 1, surface	Nabataean period (1st c. CE)
62005	Summit; pit tomb 2, surface	Nabataean period (1st c. CE)

The Alleged pre-Nabataean Tombs at Hegra. Preliminary Report

Paul PEIGNOT (University Paris 1 Panthéon-Sorbonne)

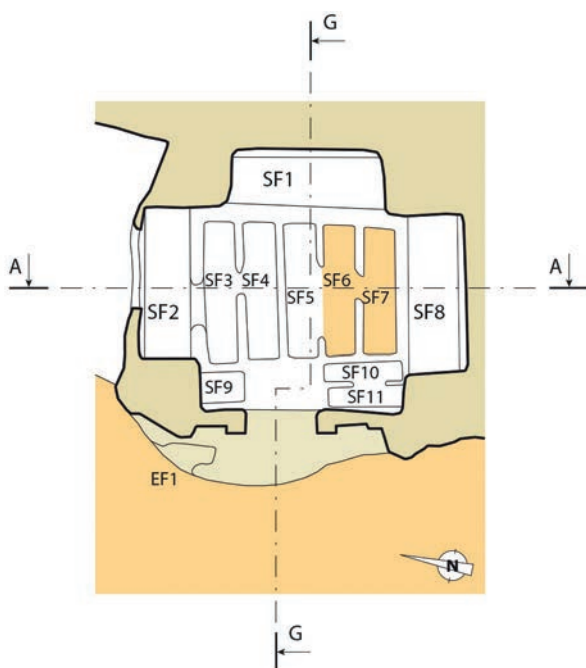


Fig. 1. Plan of IGN 125 in Hegra (from Nehmé 2015, pl. 197).

In 2020, I was asked by Laïla Nehmé to tackle the still pending issue of the date of a particular category of tombs from Hegra.¹ This category is composed of seventeen funerary chambers one of the characteristics of which is that they are dug several meters above the ground.² A second characteristic is that only the chambers of these tombs have a cross-shaped plan because of extensions on three of their walls (**fig. 1**). Finally, we know that some of them at least are earlier than the tombs with a decorated facade, as shown by the fact that two of them, IGN 26.1 and IGN 30.1, were partly destroyed when the stone cutters dug IGN 26 and IGN 30 (AD 57/58).³ Apart from these two, only one tomb, IGN 103, was dated on external criteria (see below).

The survey aimed at examining and describing the stone-cutting techniques in this group of

tombs and compare them with those of the rock-cut tombs of ancient Dadan,⁴ at Khurayba near al-'Ulā, which are pre-Nabataean (**table 1**).⁵

1. I wish to thank Laïla Nehmé for her warm welcome and for having given me the opportunity to join the Madā'in Sālih Archaeological Project.

2. They are described in Nehmé 2015: vol. 1, p. 56–58. These tombs are IGN 4, 5, 6, 25, 26.1, 28, 30.1, 31, 103, 104, 105, 108, 116, 123, 124, 125, 126 and 139.

3. Nehmé 2015: vol. 2, p. 56 and vol. 2, p. 62, 70.

4. D01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14 and 15 from Dadan. See table 1 for the correspondance between our numbers and Jaussen and Savignac's numbers

5. I am grateful to the Dadan archaeological Project for letting me examine the tombs from Dadan.

No.	Jaussen and Savignac no.	Coordinates X, Y (WGS 84 / UTM Area 37N)
D01	29	392142, 2948669
D02		391886, 2948314
D03		391886, 2948301
D04		391890, 2948291
D05		391889, 2948276
D06		391902, 2948243
D07	14	391898, 2948208
D08	13	391897, 2948195
D09	12	391898, 2948180
D10	11	391897, 2948176
D11	10?	392051, 2947893
D12	09?	392070, 2947889
D13	04	392103, 2947867
D14		391890, 2948290
D15		391874, 2948190

Table 1. List of the studied tombs at Dadan.

Methodology

The survey took place from January 30th to February 13th. First, I made a systematic photogrammetric survey of each tomb, in both Hegra and Dadan, in order to gather as much precise data as possible (**fig. 2–3**). Once this was done, I undertook a comparison between the tombs, which allowed for a classification according to the stone-cutting techniques.

As said in the introduction, the only tomb for which we have an absolute dating is IGN 103, excavated in 2014. Pit grave SF9 in this tomb was filled with a layer of sand which was given a unique *locus* number, 50405. A bracelet found near the juvenile buried in SF9 was compared with a bracelet found in Qaryat al-Fāw, dated to between the 1st and the 3rd century AD.⁶ Besides, the pottery from the tomb was dated to between the “Hellenistic” and the Nabataean periods.⁷ Finally, a radiocarbon date revealed that one burial is dated to the interval 54 BC–AD 71.⁸ As for the tombs of Dadan, they are dated to the Lihyanite period (6th–1st c. BC) as the inscriptions above or inside them show.⁹

A selection of tombs with decorated facades dated by epigraphy was then used to compare their stone-cutting techniques with those of our groups of tombs.¹⁰ Tombs with an early date and/or those which have a relationship with the chambers cut high in the cliffs were selected.

Outline of a typology

The tombs of our corpus can be divided into four groups according to the way their main chamber was cut (**fig. 4**). More precisely, the groups were distinguished according to the treatment the walls received or did not receive after extraction using one tool or another. Particular attention was paid to the supposed intention of such or such treatment, trying to understand which global result the stone cutters wanted to obtain.

6. Delhopital 2015: 142–143.

7. Durand and Gerber 2015: 197.

8. Nehmé 2015: vol. 1, p. 56.

9. Jaussen and Savignac 1909–1914: vol. II, p. 63–77.

10. IGN 22, 24, 26, 30, 39, 64 and 101.

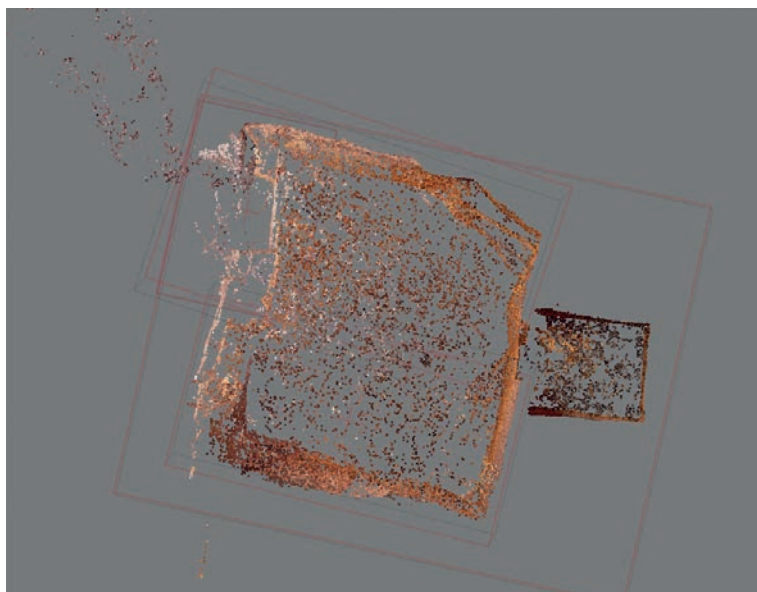


Fig. 2. Example of point cloud from photogrammetry. Tomb D06.



Fig. 3. Photo of the interior of tomb D02 in Dadan, with the scale card on the floor.

The groups are the following:

Group A

The surface of at least one wall received a complete post-extraction treatment with a pick in a very consistent manner. In this group, we also find walls which have been partly or completely treated with a point chisel¹¹ in a way which seems to have been planned. This treatment is visible in the upper third of the photograph which illustrates Group A (fig. 4, top left), overlaying the treatment with a pick, observable in the lower two thirds of the same photograph.

11. A tool with a point at one end and a broad or truncated shape at the other.

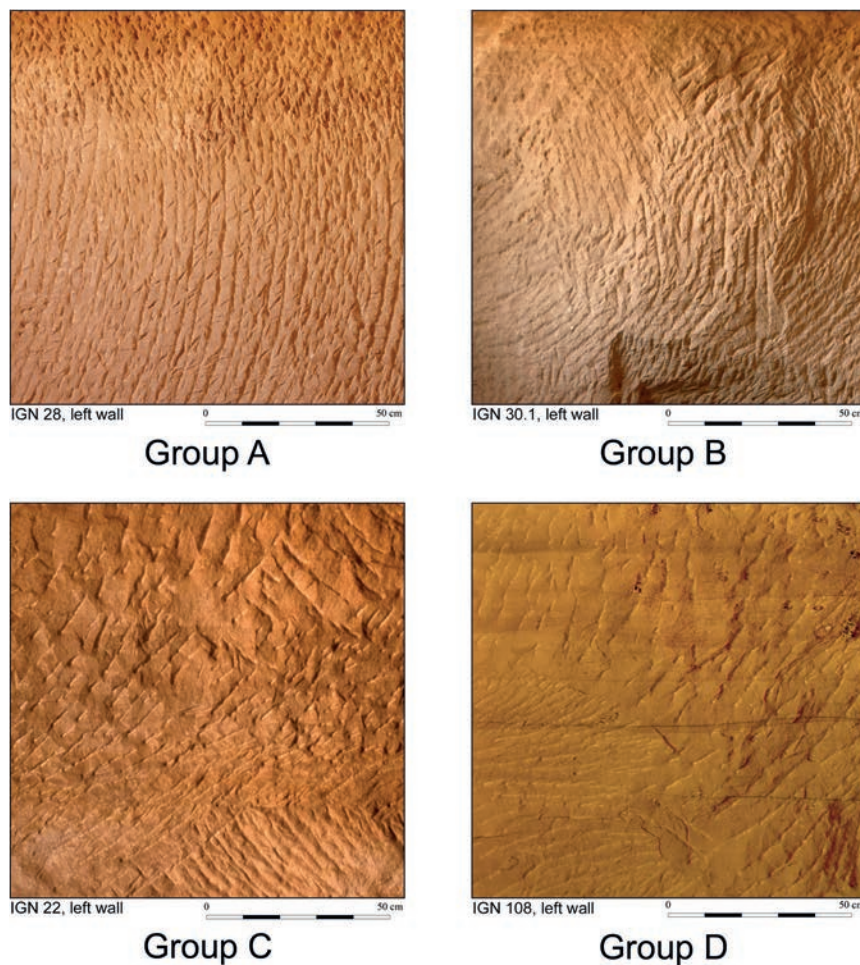


Fig. 4. Photographs illustrating the cutting techniques of each group.

Group B

The walls are treated using different cutting techniques, with the use of both a pick and a point chisel. Besides, the orientation of the marks varies randomly and the tools were used on very different surfaces, forming a patchwork of techniques on the walls. The average space between the traces of the tools is less than 5 cm (**fig. 5**).

Group C

The walls are treated in a very rough manner or they are not treated at all after extraction. Some tombs show traces, at the bottom of the walls, of the trenches dug during block extraction. These traces support the fact that the walls were left rough of digging, i.e. that no other treatment was applied after extraction apart from what was necessary to obtain a plane surface. The average space between the traces of the tools is more than 5 cm.

Group D

The tombs seem to be unfinished and the walls of the chamber do not form a quadrangular volume.

Groups A and B are characterized by a systematic post-extraction treatment, with the use of either the pick or the chisel point. In Group A, the technique is more meticulous than in Group B. Groups C and D show mainly the use of the pick, with a very limited post-extraction treatment applied to the walls and various degrees of unachievement.

By chance, each of these groups seems to have an equivalent among the dated tombs from Hegra, thus allowing to suggest a possible timeline for them (**fig. 6**). A preliminary look at all the tombs

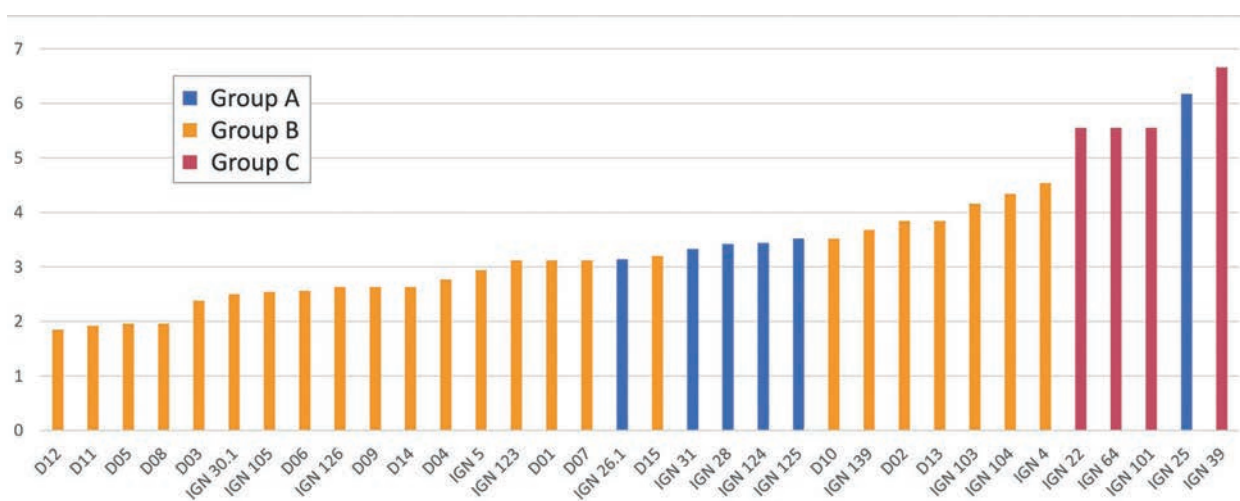


Fig. 5. Average space between the traces of the tools for the mainly used technique (in cm).

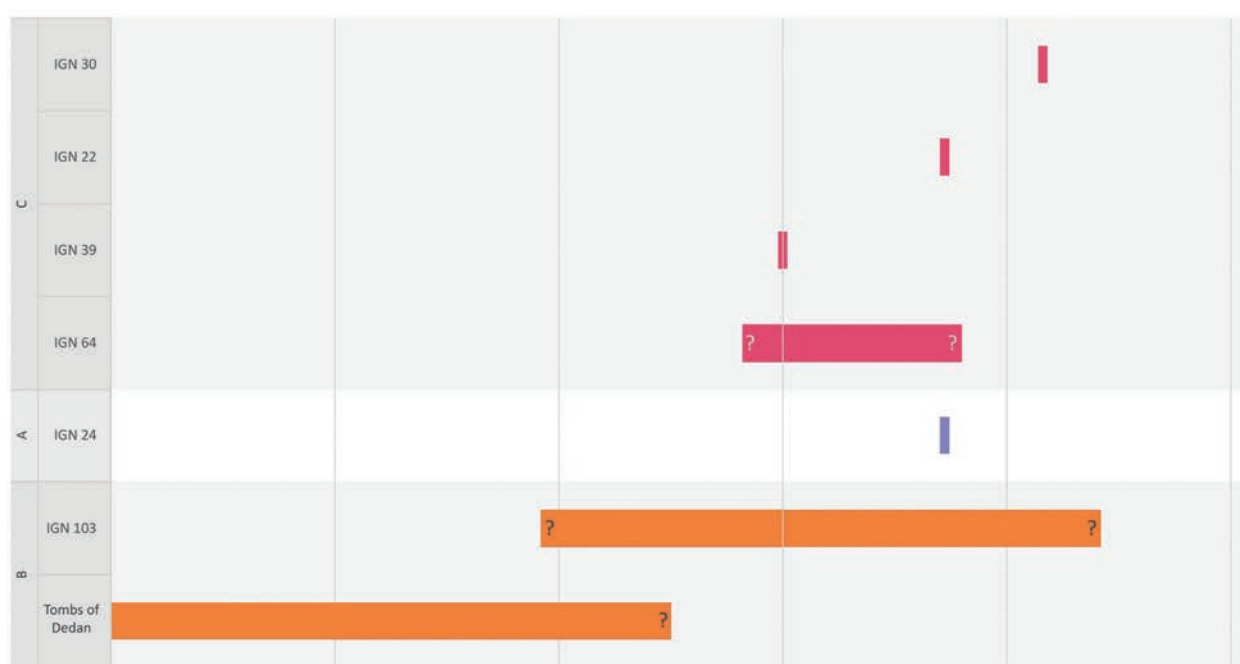


Fig. 6. The dating data and the groups.

from Hegra in the catalogue published in Nehmé 2015 seems to show that the technique used in groups A and B is used almost exclusively in the tombs of our corpus and not in the tombs with a facade. Conversely, the technique used in Group C is not used in any of the tombs of our corpus (table 2).

In **Group A**, **IGN 24** is dated by inscription JSNab 9 to AD 35/36.¹²

In **Group B**, to which belong the largest number of tombs (see table 2), only one from Hegra (**IGN 103**, see above) was approximately dated and fourteen from Dadan are pre-Nabataean, i.e. earlier than the turn of the Christian era.¹³

Finally, **Group C** includes only four dated tombs with facades and none from our corpus:

12. Nehmé 2015: vol. 2, p. 57.

13. Rohmer and Charloux 2015: 299–300.

	Group A	Group B	Group C	Group D
Hegra	[IGN 24] IGN 25 IGN 26.1 IGN 28 IGN 31 IGN 124 IGN 125	IGN 4 IGN 5 IGN 6 IGN 30.1 IGN 103 IGN 104 IGN 105 IGN 123 IGN 126 IGN 139	[IGN 22] [IGN 26] [IGN 30] [IGN 39] [IGN 64] [IGN 101]	IGN 108 IGN 116
Dadan		D01 D02 D03 D04 D05 D06 D07 D08 D09 D10 D11 D12 D13 D14 D15		

[] : Tomb with a decorated façade

___ : Dated tomb

Table 2. Distribution of Hegra and Dadan tombs in the three groups.

- **IGN 22**, dated by inscription JSNab 8 to 1 BC/AD 1;¹⁴
- **IGN 30**, dated by JSNab 14 to AD 57/58;¹⁵
- **IGN 39**, dated by JSNab 16 to 1 BC/AD 11;¹⁶
- **IGN 64**, dated by JSNab 31 to between 9 BC and AD 40.¹⁷

Group B seems to be the oldest one, from the mid-first century BC to the turn of the Christian era. **Group C** seems to be more recent, from the turn of the christian era to the mid-first century AD. **Group A** has probably coexisted with Group C.

If one considers that all the tombs from Dadan, which are pre-Nabataean, belong to Group B, and since the majority of the tombs cut high on the cliffs in Hegra also belong to Group B, including IGN 103, it is possible to suggest that at least some of the Hegra tombs of Group B are either pre-Nabataean or early Nabataean (up to the turn of the Christian era). There is no way one can be more precise for the moment, especially since the main characteristic of Group B is precisely that it is made of a combination of techniques applied randomly on the walls, and it may therefore have been used at different periods.

Siglum

JSNab Nabataean inscriptions published in Jaussen and Savignac 1909–1914.

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14. Nehmé 2015: vol. 2, p. 53–54.

15. *Ibidem*, p. 68.

16. *Ibidem*, p. 80–81.

17. *Ibidem*, p. 115.

The al-‘Ulā–al-Madīnah Survey, Seasons 2019 and 2020, Preliminary Report

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Introduction

The al-‘Ulā–al-Madīnah survey project was launched in 2019, in the framework of the new research programme of the Madā’in Šālīḥ Archaeological Project, signed in March 2019 between the CNRS (Centre National de la Recherche Scientifique) and the SCTH (Saudi Commission for Tourism and National Heritage). The decision to undertake this survey was motivated by three main issues. One is the search of the ancient routes between these two major oases of the Ḥijāz; the second is the southern limits of the Nabataean kingdom, and hence those of the Roman Province of Arabia established by Trajan in AD 106; the third is the distribution of the Nabataeo-Arabic and pre-Islamic Arabic inscriptions in Northwest Arabia and the need to enrich the corpus of personal names they contain.

The ancient routes

Since antiquity, the most important north-south trade routes across the Arabian Peninsula went through al-‘Ulā (ancient Dadan) and al-Madīnah (ancient Yathrib) but the exact itinerary between the two is not known. It therefore seemed worth trying to explore the area between the two oases, following first the indications given by the two scholars who have suggested possible itineraries, Alessandro de Maigret (for antiquity) and Ali al-Ghabban (for the first centuries AH). As a reminder, the itineraries they suggest are presented below.

Alessandro de Maigret

In a 1997 paper, Alessandro de Maigret attempted to reconstruct the itinerary of the frankincense caravan trade route (*darb al-bakhūr*). He used Claudius Ptolemy’s description of Arabia, what was available to him in terms of archaeological explorations, as well as the topographical constraints. According to him, the caravans which travelled between Mecca and al-‘Ulā followed three wadis: (1997: 321–322), Wādī ‘Aqīq up to al-Madīnah, then Wādī al-Ḥamḍ up to the aḍ-Ḍulay‘ah basin and then Wādī al-Jizl up to al-‘Ulā. He gives the following list of hypothetical stops on the 330 km long track between al-‘Ulā and al-Madīnah, listed below from north to south (**fig. 1**):

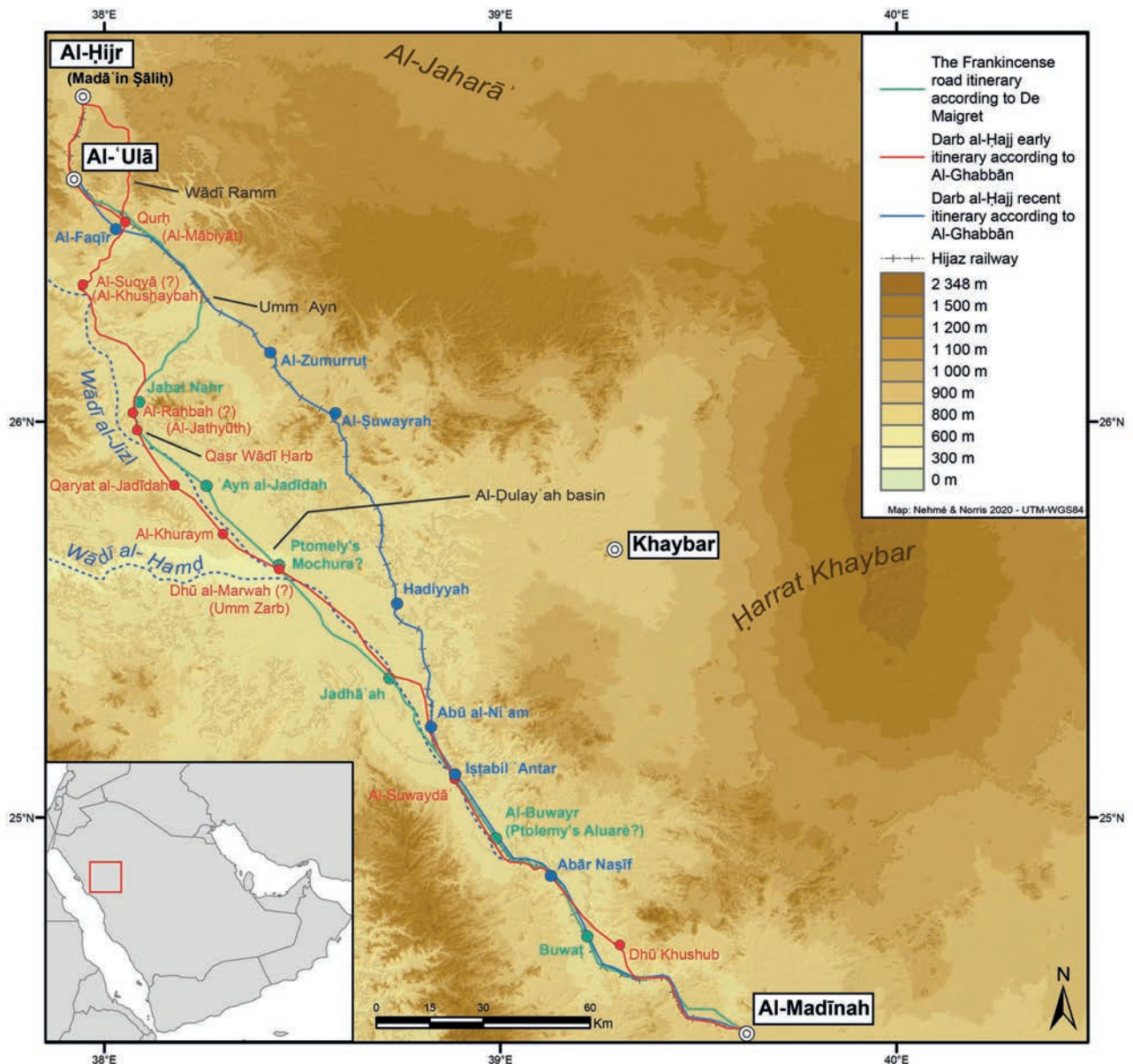


Fig. 1. Map of the area between al-‘Ulā and al-Madīnah showing the hypothetical stops given by A. de Maigret (in green) and A. al-Ghabban (in red and blue).

- al-‘Ulā;
- **Sabkha** of Umm ‘Ayn, near **Sahl al-Muṭṭrān** railway station;
- ‘Ayn al-Jadīdah, near Jabal Nahr, which is said to be a site with Nabataean pottery;¹
- al-Ḍulay‘ah basin, with the ruins of Umm Zarb, possibly to be equated with Ptolemy’s Mochura and medieval Dhū al-Marwah, where starts the road that followed the Wādī al-Ḥamḍ down to the sea.
- al-Jadhā‘ah, near the railway station, where wadis coming from Ḥarrat Khaybar join Wādī al-Ḥamḍ.

1. Referring to Ingraham *et al.* 1981: 76, site no. 204-41, where, however, only Roman pottery is mentioned. It is described as “incised and orangish ribbed fine ware”, a description which, as recall Gatier and Salles (1988: 179), reminds one of Nabataean pottery. This site is probably Ghabban’s Raḥbah and al-Jathiyūth, see below and note 4.

first six centuries AH (7th-12th centuries AD), and a “recent” one after the 12th century AD. The latter follows a track almost identical to that of the Ottoman Ḥijāz railway opened in 1908, with the difference that it goes through the stop of al-Faqīr immediately after al-‘Ulā. As for the former, he divides it into three sections (see fig. 1):

1. From al-Ḥijr to Raḥbah:

1a. From al-Ḥijr to Qurḥ (modern al-Mābiyāt), two possible itineraries:

- al-Ḥijr to Qurḥ through al-‘Ulā;
- al-Ḥijr to Qurḥ through Wādī Ramm where stands the modern village of Qā’ al-Ḥajj. According al-Ghabban, this itinerary is the most likely to have been used in the first centuries AH.

1b. From Qurḥ to al-Suqyā (possibly the modern village of al-Khushaybah).

1c. From al-Suqyā/al-Khushaybah to Raḥbah⁴ (possibly the ruins of Jathyūth, near Kutayfah) along Wādī al-Jizl and through the plain of Kutayfah.

2. From Raḥbah to Dhū al-Marwah: Raḥbah, Qaṣr Wādī Ḥarb, Qaryat al-Jadīdah, al-Khuraym (or al-Kharīm), Dhū al-Marwah. As does de Maigret, al-Ghabban equates the medieval site of **Dhū al-Marwah** with the archaeological site of Umm Zarb (near the village of Badā’i’ al-Ḍulay’ah).

3. From Dhū al-Marwah to al-Madīnah:

3a. From Dhū al-Marwah/Umm Zarb to al-Murr (identified with Bi’r Abū al-Ḥilū);

3b. From al-Murr to al-Suwaydā’ through **Abū al-Ni’am** (railway station). According to al-Ghabban, the medieval **al-Suwaydā’** should correspond to the place of **Iṣṭabil ‘Antar** where another railway station was built;

3c. From al-Suwaydā’ to al-Madīnah (Sulṭānah district) through **Shajwā, Dhū Khushub** (near the modern town of al-Mundassah) and **Sha’īb Makhīṭ**.

What can be deduced from the reading of de Maigret and Ghabban is, first, that the location of the ancient and medieval place names they use to reconstruct itineraries is purely hypothetical, with no absolute certainty that the identifications suggested are correct. Second, if one compares the itineraries reconstructed by the two scholars (see fig. 1), one can see that despite discrepancies, the ancient frankincense caravan trade route and the “early” Syrian pilgrimage route would follow roughly the same line and would in fact be relatively similar. Third, that the two latter itineraries are characterised by the fact that they start west of the Ḥijāz railway after al-‘Ulā and that they only join its line somewhere near the latitude of the Jadhā’ah station. Fourth, the two itineraries use the course of two important wadis: Wādī al-Jizl and Wādī al-Ḥamḍ, the two joining in the al-Ḍulay’ah basin where the ancient town of Dhū al-Marwah should stand. Fifth and last, there are not very many archaeological and epigraphic remains which support the delineation of the track in antiquity.

The southern limits of the Nabataean kingdom

The southern limits of the Kingdom of Nabataea and hence of the Roman province of Arabia are traditionally located—at least since a consensus was reached on the fact that the Ḥijāz was part of the Roman Empire—more or less at the latitude of Madā’in Ṣāliḥ, ancient Hegra. This accounts for the presence of Roman soldiers, whose identity, rank and function are becoming relatively

4. Which should correspond to Ingraham’s site no. 204-41.

well known thanks to recent publications and reports.⁵ It also accounts for the building, in the early second century AD, adjacent to the southern rampart of the ancient city, of a Roman fort the excavation of which started in 2015.⁶

Despite this, scholars are discussing for long as to whether a certain control, or at least influence, of the Nabataean kingdom could have extended beyond ancient Hegra to the south (Gatier and Salles 1988: 178–181), perhaps down to Yathrib/al-Madīnah. M.C.A. Macdonald even raised the same question with regard to the southern limits of *Provincia Arabia*, emphasizing that there was no physical border to limit it on that side. *Provincia Arabia* may therefore have covered, in “conceptual” terms, all Arabia.⁷ Four elements invite us to take a closer look at this issue. First, Strabo’s account of the expedition of Aelius Gallus to South Arabia in 26–25 BC who reports that “Gallus moved his army from Leucê Comê and marched through regions of such a kind that water had to be carried by camels, because of the baseness of the guides; and therefore it took many days to arrive at the land of Aretas, a kinsman of Obodas. Now Aretas received him in a friendly way and offered him gifts, but the treason of Syllaëus made difficult the journey through that country too; at any rate, it took thirty days to traverse the country” (Strabo, *Geography*, XVI.4.24). The location of the country of this enigmatic “Aretas”, a member of the family of Obodas II (previously numbered III), is disputed among scholars as it is directly related to the problem of the identification of Leuke Kome. If one considers that the latter should be equated with ‘Aynūnah, then Aretas’ country may be located somewhere north of Hegra. If, on the other hand, one places Leuke Kome near al-Wajh, at the latitude of al-‘Ulā, then Aretas’ realm would extend from about the desert south of al-‘Ulā down to the north of Mecca and aṭ-Ṭā’if. The latter hypothesis was recently defended by Chr. Robin who concluded from Strabo’s text that the Nabataeans should have extended their political control south of al-‘Ulā at the end of the first century BC (2015: 97). It is therefore hoped that an exploration on the ground could contribute to that debate.

A second argument is the discovery, at Umm Jadhāyidh, about 200 km northwest of Hegra, of



Fig. 3. Nabataean inscription UJadhNab 459 from Umm Jadhāyidh mentioning someone who comes from Yathrib (L. Nehmé).

a Nabataean inscription, UJadhNab 459, the text of which reads: *šlm k'{d/r} br 'šlm / dy mn ytrb*, “May Ka’a{d/r} son of ‘Aslam, who is from Yathrib, be safe”⁸ (fig. 3). This text shows that a man who could write in Nabataean travelled between Yathrib and Umm Jadhāyidh, very probably passing

5. Fiema, Villeneuve, and Bauzou 2020; Gatier 2020.

6. Fiema 2020.

7. Macdonald 2009: 300–301.

8. Now published in Nehmé 2018.

through Hegra. It should be noted that the expression *dy mn* + place name, “who is from + place name”, is attested in other Nabataean inscriptions (e.g., JSNab 226: *šbrw br ’wšw dy mn šlḥdw* “Šbrw son of ’wšw who is from Šalkhad”) and is different from the expression *dy ’zl l-*, “who went to” which refers to a travel. The latter is also found engraved on the rocks bordering the caravan route north of Hegra, for example in UJadhNab 5: *šlm kl gbr dy ’zl lḥgr’ w kl {gm}l*, “May any man who went to Hegra and any camel be safe” (the same formula is used in UJadhNab 199). It is therefore likely that *dy mn ytrb* refers to a Nabataean man who lived in Yathrib and came from there. From this point of view, it is worth remembering that the Arabo-Islamic tradition refers to the existence of a “market of the Nabataeans” at Yathrib/al-Madīnah in the time of the Prophet. The third argument is the publication by S. al-Theeb, in 2005, of a Nabataean inscription from al-Qaṭī’ah (about 75 km north from Khaybar and 120 km south-east of Hegra, see location on fig. 5) which refers to a “king of Ghassān” named *Ḥrtt* son of *Zydmnwtw* (ThNJUT 65). As has been recently demonstrated, the central Ḥijāz, possibly around the oasis of Yathrib, is likely to be the region where the kingdom of Ghassān was located in the third century AD (Robin 2015: 99–102). One wonders whether the Nabataean script was the one generally used in this region and hence whether this had already been the case in the first century AD, which would in turn possibly indicate that this region had a strong connection with the Nabataean kingdom.

The last, and most important, argument is a Nabataean graffito discovered in 1987 at al-Šuwaydirah, 60 km east–north-east of al-Madīnah, during the Saudi Comprehensive Rock Art and Epigraphic Survey. The publication of this text in 2009 in a work on the Arabic inscriptions from al-Šuwaydirah,⁹ has long escaped the attention of scholars. The text (fig. 4), short but well



Fig. 4. Nabataean inscription from al-Šuwaydirah mentioning a *strategos*, UM022Nab2 (MSAP).

written in a form of the Nabataean script which would not be surprising in the first century AD, reads *dmsy br hn’t ’srtg’ šlm*, “May Damasī son of Hāni’at the *strategos* be safe”. There is no way to be sure whether the title of *strategos* applies here to Damasī or to Hāni’at. All one can say is that a *strategos* named Hāni’at is mentioned in Hegra¹⁰ whereas no *strategos* named *dmsy* is known

9. Al-Rashid 2009: no. 29 p. 87.

10. In JSNab 61 as reread in Nehmé 2005–2006: 186–188, inscription no. 10: *šlm ’bd’l’z’ m zmn hn’t ’srtg’ w tymw br {’}šlm*.

so far.¹¹ According to Safaitic evidence, a man named Damasī son of Rabīb'el is thought to have led a rebellion in AD 71 but since the father's name is not the same, Hāni'at in one case and Rabīb'el in the other, the two Damasī are certainly not the same person.¹² Since *strategoī*, in the Nabataean kingdom, are likely to be provincial governors, whose powers were probably both civilian and military (Nehmé 2015), does this mean that the area of al-Madīnah, ancient Yathrib, was part of a Nabataean province? It would be difficult to imagine that Nabataean *strategoī* would have laid claim to this title unless they felt entitled to do so. It would thus at least mean that it was in the area of Nabataean influence, where Nabataean governors could travel safely and give their title in two texts without it being a problem.

The Nabataeo-Arabic and pre-Islamic Arabic inscriptions

It is now certain that North-West Arabia is the region where the largest number of inscriptions written in forms of scripts transitional between Nabataean and Arabic—about 150—were found. So far, however, not a single Nabataeo-Arabic or pre-Islamic Arabic text was found south of the Islamic site of al-Mābiyāt, 20 km south of al-'Ulā, where a Nabataeo-Arabic inscription dated to AD 280 was found reused in a wall.¹³ The large majority of the texts come from the area between al-'Arniyyāt, 55 km south-east of Tabūk, and al-Mābiyāt, with a few more coming from al-Jawf and Sakākā. The area between al-Mābiyāt and al-Madīnah being completely devoid of Nabataeo-Arabic or pre-Islamic Arabic texts, we considered it was worth exploring this area to find some more. This is all the more important that a preliminary study of the personal names in the texts already recorded has shown that they are very different from those used in inscriptions written in the Nabataean script and that many of them can be found among the personal names known to Arab genealogists in the first centuries AH. The first and as yet preliminary conclusions show that some names belong to tribes from the Yathrib/al-Madīnah region. Since the study has to focus on the names that are relatively rare,¹⁴ most reliably deciphered, and which can be associated with particular tribes, it is important to increase the number of such names by finding new texts. It is also important to determine whether the distribution area of this category of texts extends down to al-Madīnah or not.

11. Unless the title applies to him in JSNab 84 which reads *dkyr dmsy br rbyb'l 'srtg'*, though it is more likely that it applies to *rbyb'l*, who is explicitly mentioned as a *strategos* in JSNab 43. See Nehmé 2015: 110, n. 12 on this and on Nabataean *strategoī* in general.

12. On Damasī in recent scholarly literature, see al-Rawabdeh and al-Husan 2018 as well as Norris 2018: 86–88. The latter publishes a bilingual Nabataean-Safaitic text (DaJ34ANA3/DaJ34Nab4) which proves that Nabataean *dmsy* is the equivalent of Safaitic *dmšy*.

13. First published in al-Muraykhi 2008. This of course is without taking into account the texts from the Ḥimā area north of Najrān, for which see Robin 2014. For a good photograph of the al-Mābiyāt text, see Nehmé 2019: 83.2.

14. Names that are very widespread and appear throughout the Arabian peninsula are of no use for this purpose.



Fig. 5. Example of tracks followed by one of the cars during the 2020 survey (MSAP).

Preliminary results

Survey strategy

In 2019, the first season of the survey, the strategy was the following:¹⁵ 1/ the team tried to follow and explore the itineraries described by de Maigret and al-Ghabban as being the probable ones of the *Darb al-bakhūr* and the *Darb al-Ḥajj al-shāmī* (see above); 2/ the team tried to identify on the ground all the previously known sites which are relevant for the issue addressed by the project. This was of course possible only when information on their location was available. The degree of reliability of this information varies a lot, and is particularly low when the coordinates of a site with Nabataean inscriptions or ancient pottery were taken before the use of the GPS technology. In 2020, the second season of the survey, the strategy was different. Considering that two particularly interesting sites, al-Sīj (UM034–040) and al-Ṣuwaydirah (UM022) yielded many Nabataean inscriptions,¹⁶ are located east of the itinerary followed in 2019 and, when joined by a fictive line, go through the area of Khaybar, it was decided to explore the area between al-Sīj and Khaybar, starting from the north. We applied the methodology suggested by our expedition advisor, Florent Égal, which combines exploration on foot when the area to be covered is small, and exploration by car with binoculars to detect inscribed surfaces. The two off-road car drivers, who were in contact through radio devices, would agree on the outcrops each one of them would explore and examine them one by one (fig. 5). This methodology proved relatively efficient, and

15. Apart from the authors, the survey team was accompanied in 2019 by a local informant from al-Mughayrā', Ahmad Humud al-Juhany and, in 2020, by the very skilled off-road driver Alan Morrissey. We thank them both warmly for their invaluable help.

16. Al-Sīj: 51 (including 21 unpublished); al-Ṣuwaydirah: 10 (including 8 unpublished)

whenever an inscribed panel was discovered, the epigraphists would take over from the drivers and proceed to the recording.

General results

The survey allowed for the recording of 125 sites dated to between protohistory and the modern period (**fig. 6**). The sites were numbered with the initials UM (for al-'Ulā–al-Madīnah) followed by consecutive numbers from UM001 to UM126.¹⁷ They belong to one of the following categories: cairns (7), dam (1), desert mosques (2), forts (6), forts and settlements (2), Ḥijāz railway stations (5), natural landmark (1), rock engravings¹⁸ (91), settlements (5), undetermined buildings (2),

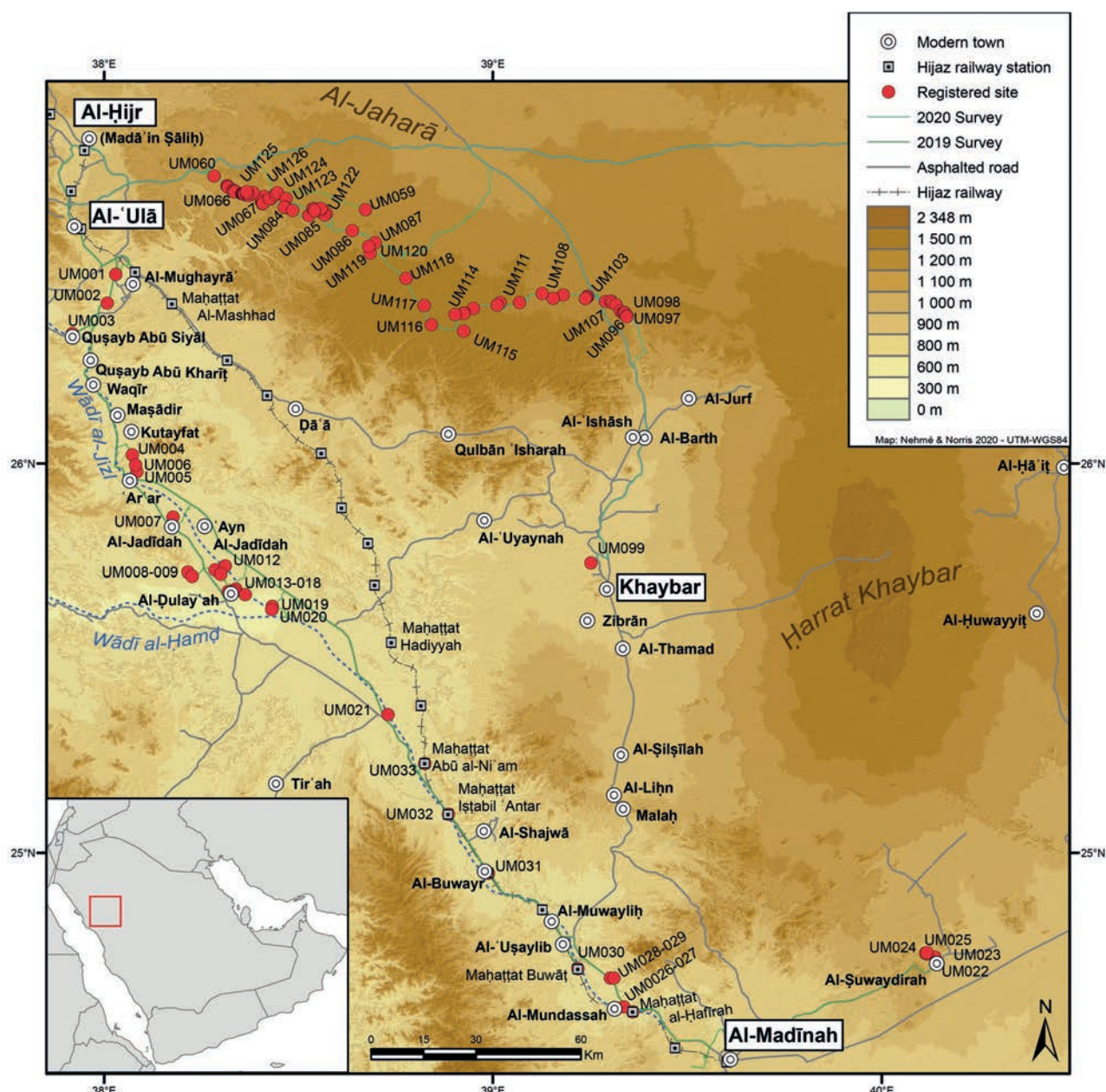


Fig. 6. Distribution map of the sites recorded in 2019 and 2020 (MSAP).

17. UM099 corresponds to the final spot where the survey stopped above Khaybar and was numbered for sake of convenience.

18. These include sites with inscriptions and/or rock art (figurative drawings and/or *wusūm*).

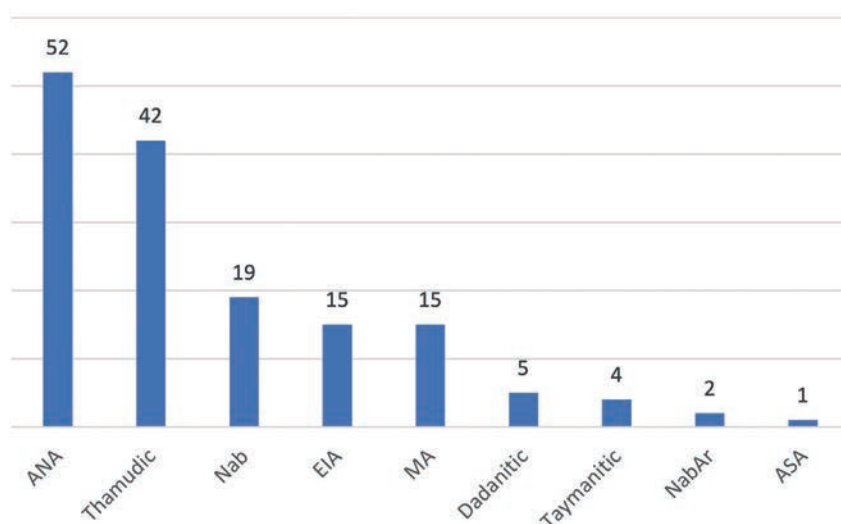


Fig. 8. Distribution of the inscriptions by category (ANA = Ancient North Arabian, EIA = Early Islamic Arabic, MA = Modern Arabic, ASA = Ancient South Arabian).

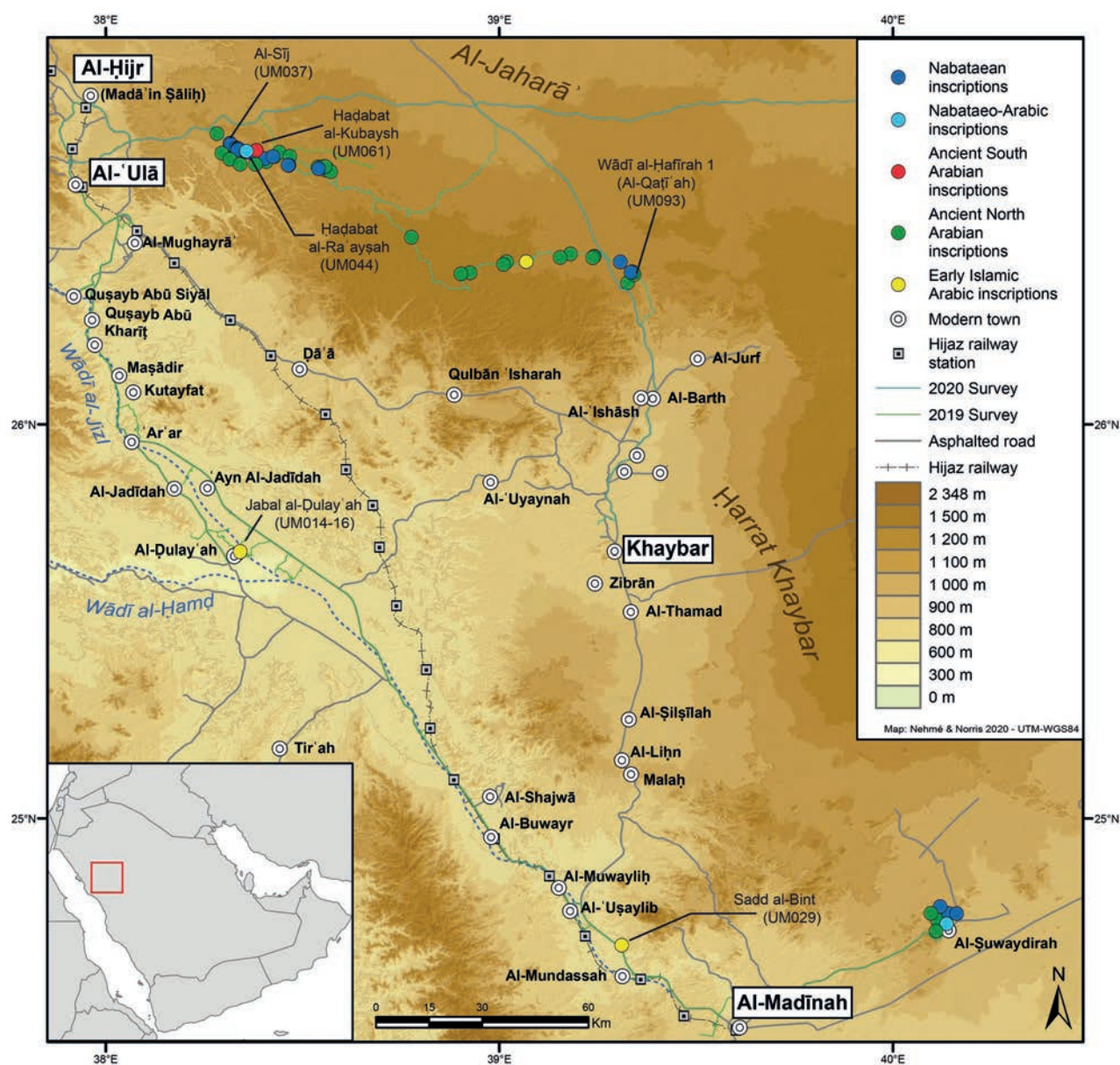


Fig. 9. Distribution map of the inscriptions by category (MSAP).



Fig. 10. View of the site of Umm Hidim (MSAP).

Preliminary conclusions

Wādī al-Jizl and Wādī al-Ḥamḍ

The al-‘Ulā–al-Madīnah Survey project was set up in order to try to identify the ancient caravan track between the two oases. In 2019, not a single pre-Islamic inscription was found on the most obvious and natural path linking the two, which follows the Wadis al-Jizl and al-Ḥamḍ. This is due partly to the kind of landscape crossed and to the absence of rocks suitable for carving. This also explains the rarity of sites with rock art and Arabic inscriptions along those two wadis. Only five sites yielded *wusūm* and representations of animals (UM006; UM014–016, UM029) while a very small number of Early Arabic inscriptions was recorded at four sites (UM014–016, UM029) (see fig. 9). However, among the sites which were visited, two are particularly interesting for our issue because they may be ancient, i.e. earlier than Umayyad. These are Umm Hidim (UM003) and al-Muṣanna‘ah (UM019-20).¹⁹

Umm Hidim is a settlement located on the edge of Wādī al-Jizl, more precisely at the confluence between Wādī al-Jizl and Wādī Mughayrā’, next to the modern villages of al-Khushaybah and Quṣayb Abū Siyāl (see fig. 7). It lies therefore in a very strategic position with regard to the surveillance of the natural paths. It is made of earth mounds forming small tells which correspond to ancient structures. The latter are distributed over a relatively large area, at least 300 m. The site is dominated by a massif, about 15 m high, on top of which are the remains of masoned walls (**fig. 10**). The site yielded fragments of mortar, sandstone blocks with traces of cutting, many fragments of sandstone basins, pottery, and a fragment of an alabaster vessel. There is

19. On the map produced by Ingraham *et al.* 1981 on pl. 65, it seems that al-Muṣanna‘ah corresponds to site no. 204-34, but no description of it was found in the text.

also an area (26.333083° / 37.916704°) which shows a concentration of overcooked pottery. The examination of the pottery shows that it is ancient, possibly pre-BCE (see Durand 2018–2019: 73). This preliminary dating is consistent with the observation of the Saudi team who visited Umm Hidim (registered as site 204-1032) in 1982 and described it as an “Iron Age” site (Kisnawi *et al.* 1983: 80–81). Although no material from the medieval period was collected by the team, the question remains open as to whether Umm Hidim corresponds to the Islamic town of al-Suqyā which al-Ghabban suggests is to equate with al-Khushaybah (see above).

As for al-Muṣanna‘ah, the name of which means “the built”, it is strategically located at the junction between wadis al-Jizl and al-Ḥamḍ. It consists of two large structures built with basalt stones lying on the edge of the larger archaeological site of Umm Zarb mentioned by both de Maigret and Ghabban, which the did unfortunately not visit. The two large structures were named al-Muṣanna‘ah 1 (UM019) and al-Muṣanna‘ah 2 (UM020) to distinguish them from the site of Umm Zarb itself. Al-Muṣanna‘ah 1 shows in its north-western part an artificial mound, ca 10 m high, composed of basalt stones which cover structures built in masonry. Walls are clearly visible (**fig. 11**). At the top of the mound, there was probably a 6 m wide structure, possibly a watch-tower from which one has a very good view towards Wādī al-Ḥamḍ. Several walls, perpendicular to the slope, stabilised it. The mound is included in a large enclosure, ca 42 x 48 m, equipped with four corner towers and a partly bulldozed gate in the middle of the south-eastern wall. The site is almost certainly a fort but its date, Roman or Islamic, is not certain (see Nehmé forthcoming). It shows similarities with two Roman forts of the Eastern Desert, Maximianon and Krokodilô, which are dated to the last quarter of the first century AD, but also with the 8th century fort of Khirbat al-Khuraybah (al-‘Ulā).²⁰ The pottery collected on the site was examined by C. Durand (see Durand 2018–2019 and Nehmé forthcoming) who concluded that neither of the eroded body sherds collected on the surface was typically Islamic (no Islamic diagnostic sherd according to J. Monchamp and P. Siméon, who also examined it) whereas one sherd is typical of the early (pre-first century BC) pottery from Hegra.

Al-Muṣanna‘ah 2, 1 km south–south-west from al-Muṣanna‘ah 1, shows similarities with the latter. It is smaller and the enclosure is less regular. The south side of the tower is well preserved. The walls form a square structure and at least one wall perpendicular to the slope is visible. One of the walls measures 12 m long. At the top, a row of stones forming a semi-circle may be later. No pottery was collected.²¹

Due to the complete absence of Nabataean inscriptions along the route followed in 2019, there is not conclusive argument to say that it formed the ancient caravan track. The only two sites which may be ancient based on traces of occupation other than the presence of inscriptions, Umm Hidim and al-Muṣanna‘ah, are both located at the junction of important wadis (see fig. 7) and may therefore be part of the surveillance system of the region in antiquity.

The epigraphic material

As indicated above, the pre-Islamic epigraphic material collected during the survey comes exclusively from sites located south-east of al-‘Ulā and north-east of al-Madīnah respectively. This is

20. Al-Dhībī 2011: 88.

21. The photograph on pl. 97B shows a structure which looks very much like al-Muṣanna‘ah 2 but the reference number given in the caption is 201-72, which is not in this area. The identification is therefore not certain.

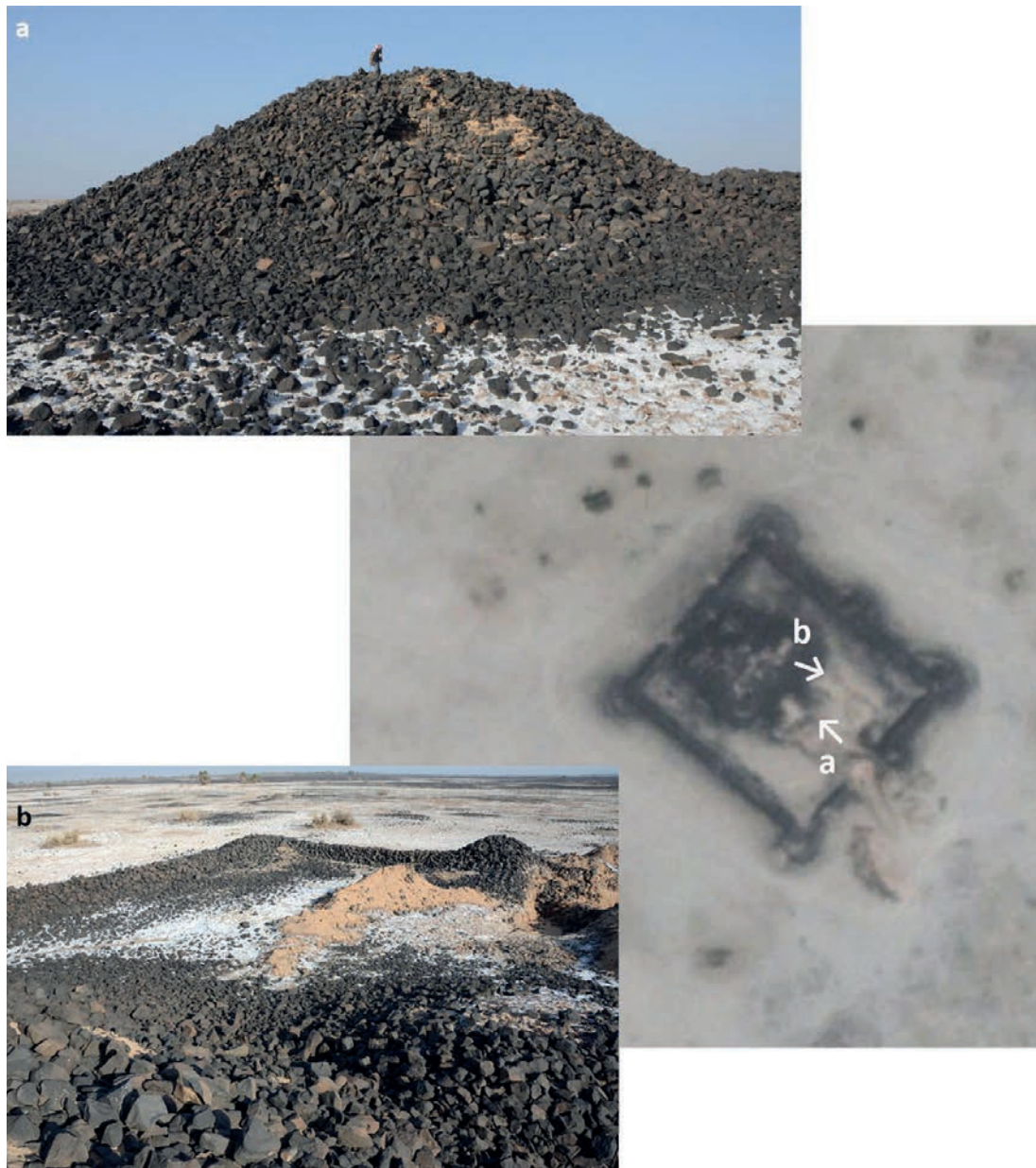


Fig. 11. *The fort of al-Muṣanna‘ah (MSAP).*

noticeably east from the alleged itinerary of the Frankincense caravan route as reconstructed by de Maigret. The sites which yielded the largest number of inscriptions, al-Sij, Ḥaḍabat al-Ra‘ayṣah, al-Qaṭī‘ah and al-Ṣuwaydirah, are not distributed along a path one can define as natural. The first three can be connected relatively easily because the landscape is open and easy to cross, but between them and al-Ṣuwaydirah is the repulsive area formed by the Ḥarrat Khaybar (**fig. 12**). The region south of Khaybar is unlikely to yield epigraphic material because of the kind of landscape crossed and the overwhelming presence of the Ḥarrat Khaybar. There might still be an area worth surveying, and that is the area between al-Ṣuwaydirah and Khaybar, possibly starting from the former rather than from the latter and going north through the Wādī al-Gharas (see fig. 12), west of which is the modern road between Khaybar and al-Madīnah. Another possibility is that al-Sij, Ḥaḍabat al-Ra‘ayṣah and al-Qaṭī‘ah are part of the road between al-‘Ulā and Ḥā’il (but al-Qaṭī‘ah would probably be too far south).



Fig. 12. Distribution of some of the key sites (MSAP).

The Nabataean and Nabataeo-Arabic texts

There is no comparison between the number of inscriptions recorded on the Darb al-Bakrah caravan track between al-Ḥijr/Hegra and Tabūk (912 Nabataean and Nabataeo-Arabic texts, see Nehmé 2018) and the number of Nabataean and Nabataeo-Arabic texts recorded in 2020 between al-ʿUlā and al-Ṣuwaydirah (102), for which see the table below.

<i>Site name and number(s)</i>	<i>Nb of Nab and NabAr texts</i>
Rī' al-Sīj–UM034-40	51
Wādī al-Ḥafīrah (Al-Qaṭī'ah)–UM093	17
Ḥadabat al-Ra'ayṣah–UM043-62	11
Al-Ṣuwaydirah–UM022	10
Umm Idhn–UM067	7
Tal'at Wāsīt–UM071	4
Qārat al-Dumaythah–UM124	1
Wādī al-Yaṭrūḥah–UM090	1

That being said, these inscriptions are important for our issue. The exploration of al-Ṣuwaydirah in 2019 allowed to take the exact coordinates of the text left by Damasī son of Hānī'at the *strategos* (UM022Nab2, see fig. 4). The exploration also revealed that the Nabataean epigraphic material is richer than what was expected from the two Nabataean texts published by al-Rashid in 2009. Eight previously unpublished inscriptions were indeed discovered and added to the *corpus*. Among these, one text, UM022Nab1, is of particular interest because it mentions another *strategos* (fig. 13). It is less well preserved than UM022Nab2 but the reading is certain: *dkyr hn't br 'n'm / 'srtg' mn qdm dwšr' 'lh gy'*, “May Hānī'at son of An'am the *strategos* be remembered



Fig. 13. Second Nabataean inscription from al-Šuwaydirah mentioning a *strategos*, UM022Nab1 (MSAP).

before Dūšarā the god of Gaia”. Nothing indicates that the Hāni’at mentioned in this text is the same as the one mentioned in UM022Nab2. A symbol representing a square with an X inside is carved immediately before *dkyr*. X signs before Nabataean texts (but not included in a square), are a relatively common feature in Nabataean inscriptions from north-west Arabia (see Nehmé 2018: 66–67). The fact that we now have two mentions of a Nabataean *strategos* at al-Šuwaydirah leads to consider more seriously the hypothesis that this place may have belonged to the Nabataean sphere influence or more. Besides, UM022Nab1 clearly mentions Dūšarā as being the god of Gaia, i.e. of Petra, which suggests that the author had links with Petra.

The survey of al-Qaṭī’ah was also successful as it allowed to find and determine the exact position of ThNJUT 65, the text which mentions *Hrtt* son of *Zydmnwtw*, “king of Ghassān”. Besides, new Nabataean inscriptions were discovered, thus bringing the total number of texts from this site to seventeen, only five of which were previously published (ThNJUT 63a–65). Finally, the team was given the opportunity to record the collection of texts carved by a group of cavalrymen at al-Sīj published by al-Theeb in 2011 as well as to collect several new texts from the same area.

When the final reading of all the inscriptions is ready, it will be necessary to check whether some of the individuals who signed in one of the sites recorded in 2019 and 2020 are the same as those who signed either in Hegra or on the Darb al-Bakrah. Two connections were noticed in passing. One is between JSNab 300 in Hegra (**fig. 14**) and UM037Nab14 in Rī’ al-Sīj 4 (**fig. 15**), which may both read *‘dyw br ‘nqw*. The other is between DBv3Nab 5 on one of the Darb al-Bakrah sites



Fig. 14. Nabataean inscription JSNab 300 from Hegra.



Fig. 15. Nabataean inscription UM037Nab14 from Rī' al-Sij 4.



Fig. 16. Nabataean inscription DBv3Nab 5 from the Darb al-Bakrah.



Fig. 17. Nabataean inscription UM037Nab29 from Rī' al-Sij 4.



Fig. 18. Nabataean inscription UM037Nab25 from Rī' al-Sij 4.

(fig. 16) and UM037Nab29 (fig. 17), which both contain the name *m'ytw* (*m'.tw* for UM037Nab29 because the *y* can only be guessed at), which occurs elsewhere only in the Ḥawrān. Finally, it is just possible that the *nisbah ghry'* in UM037Nab25 (al-Sij) (fig. 18), which reads *ḥwrrw br b'----{yy} ḡhry' b-ṭb* is a mistake for *hgry'*, in which case the man named *ḥwrrw* would come from Hegra. As for the Nabataeo-Arabic and the pre-Islamic Arabic inscriptions, the results of the al-'Ulā-al-Madīnah survey were a little disappointing since two Nabataeo-Arabic texts only were discovered. One was at al-Ṣuwaydirah, UM022NabAr1 and one was at a place known as Ḥaḍabat al-Ra'ayṣah, site UM044NabAr1 (see the map fig. 9 for location).

– UM022NabAr1 (fig. 19): This text reads *'nh ṭ{'}blw {br} {'/f/m/q}{y}my{kw} / {škrt/b-šnt} {100+1+1}*. This text is very difficult to read. The name *ṭ{'}blw*, if the reading is correct, is not attested elsewhere, unless one assumes it represents a mistake for *ṭ'lbh* (?). At the beginning of the second line, the reading depends on whether one considers the letter marked by arrow as a *k* or as the third stroke of a *š* (with an extra flourish on top). As for the numerals, what we consider as being 100, 1 and 1 are indicated on fig. 19. If the reading is indeed *b-šnt* 102, the date of the text would be AD 208, which would be a little early for this kind of script.



Fig. 19. Nabataeo-Arabic inscription UM022NabAr1 from al-Šuwaydirah (MSAP).



Fig. 20. Nabataeo-Arabic inscription UM044NabAr1 from Ḥaḍabat al-Ra‘ayṣah (MSAP).

– UM044NabAr1 (fig. 20). This text reads *dkyr ‘bynw br ‘mnw / b-ṭb w šlm*. The initial *d* has a dot over it. Both names are known in Nabataean.

The Ancient North and South Arabian inscriptions

The two surveys of the al-‘Ulā–al-Madīnah project resulted in the discovery of 216 texts written in varieties of the South Semitic family of scripts, outnumbering by far the number of Nabataean and Nabataeo-Arabic texts. Among these stand three Ancient South Arabian (ASA) texts found at Ḥaḍabat al-Kubaysh (UM061), about 47 km east from al-‘Ulā (see fig. 9). These texts are not located on the itinerary of a known north-south trade route where ASA inscriptions would be expected. Another intriguing aspect is the style of the script which presents a number of palaeographical archaisms, suggesting that the texts are relatively old. One of them, UM061ASA1, contains the verb *mšr* which, among other meanings, can be translated as “to lead a caravan, an expedition” (Multhoff 2019: 243–244). Unfortunately, twenty-five texts cannot be safely attached to either the ANA or ASA category because they are either too badly preserved or too short.



Fig. 21. Thamudic D inscription UM022ANA1 from al-Ṣuwaydirah.

As is to be expected, the highest number of recorded texts are the ANA ones. The great majority of them consist in graffiti composed in one of the varieties of “Thamudic” or “Desert North Arabian” alphabets. The region located immediately east and south-east of al-‘Ulā yielded an interesting scribal diversity, including some Thamudic B, C and D texts as well as a few of Hismaic ones. By contrast, one should note that at al-Ṣuwaydirah, virtually all the texts recorded belong to the Thamudic D category. About seventy-five of these were photographed. They generally consist of simple signatures

introduced by the first person singular pronoun, as illustrated by UM022ANA1 (fig. 21): ‘n ‘s’d, “I am ‘s’d”. These new Thamudic D texts are interesting from the point of view of the script and also because they contain personal names which correspond to common names in the Nabataeo-Arabic inscriptions. One nice example is *Mrqs’* (cf. Imru’ al-Qays) in UM022ANA31.

Finally, the epigraphic material recorded includes a small number of “Oasis North Arabian” (ONA) inscriptions, among which one clear Taymanitic and one clear Dadanitic, as well as several others which may be either. As is the case with the ASA ones, these ONA inscriptions are important as they reflect the movements of sedentary groups within the desert. They will this help better grasp the network of routes between the oasis of al-‘Ulā, al-Medīnah and Khaybar.

Sigla and abbreviations

JSNab	Jaussen and Savignac 1909–1922.
MSAP	Madāin Sālih Archaeological Project.
ThNJUT	Nabataean inscriptions in al-Theeb 2005.

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Notes on the Islamic Pottery from the al-‘Ulā-al-Madīnah Survey, 2019

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During the 2019 al-‘Ulā-Medina Survey (survey code UM), surface pottery was collected from a number of sites along the route which was followed, for which see the report on the survey in this volume. These sites are the following: Khurayyīṭ Yanbu‘, Umm Hidim, al-Raḥbah, Qaṣr Wādī Ḥarb, al-Khuraym, al-Jadīdah, Umm al-Ārāk, aḍ-Ḍulay‘ah, al-‘Amā‘ir 1 and 2, and al-Muṣanna‘ah 1 and 2. The pottery was first examined by C. Durand (see the 2019 report, <https://halshs.archives-ouvertes.fr/>) who insisted on the fact that since she is not a specialist of the pottery from the Islamic period, the conclusions she drew needed to be confirmed. It was therefore decided to pass the available documentation to Julie Monchamp and Pierre Siméon, who examined the pottery through the photographs and drawings provided by the Madā‘in Ṣāliḥ Project. Their remarks and observations thus remain preliminary and concern mainly the morphology and the decoration. The sites for which information is given below are al-‘Amā‘ir 1 and 2, al-Khuraym (square fort, ca 70 m per side), al-Raḥbah (settlement), Ḥurayyīṭ Yanbu‘ (fort, ca 70x80 m), Qaṣr Wādī Ḥarb (square fort, ca 70 m per side), Umm al-Ārāk (fort? Ca. 30 m per side), aḍ-Ḍulay‘ah (settlement or fort?).¹

1/ Unglazed pottery (fig. 1)

Among the material collected, there is a prevalence of cream colored fabrics, and vegetal temper seems to be the most frequent. The light/yellow fabric with fine wall, the so-called Eggshell, dated as early as the middle of the 8th and 9th century in Susa (Kervran 1977: 89, 152), is well represented among the early Islamic assemblage.

- Al-‘Amā‘ir2_P17: Eggshell bowl (different from the Eggshell found during the Dadan first excavation season, 2020).
- Al-Khuraym_P04: Eggshell ewer (opening with a medium size diameter 14/16 cm) generally with a single handle carinated shoulder and short neck. Frequent in the Abbasid period in Eastern Syria, for instance in Raḥbah Mayadin (Level Ib, see Rousset 1996: 198–199, pl. 65, fig. 653).

1. For the others where pottery was collected: Umm Hidim (no Islamic pottery); al-Jadīdah (non diagnostic handle sherd), al-Muṣanna‘ah (non diagnostic eroded sherds).

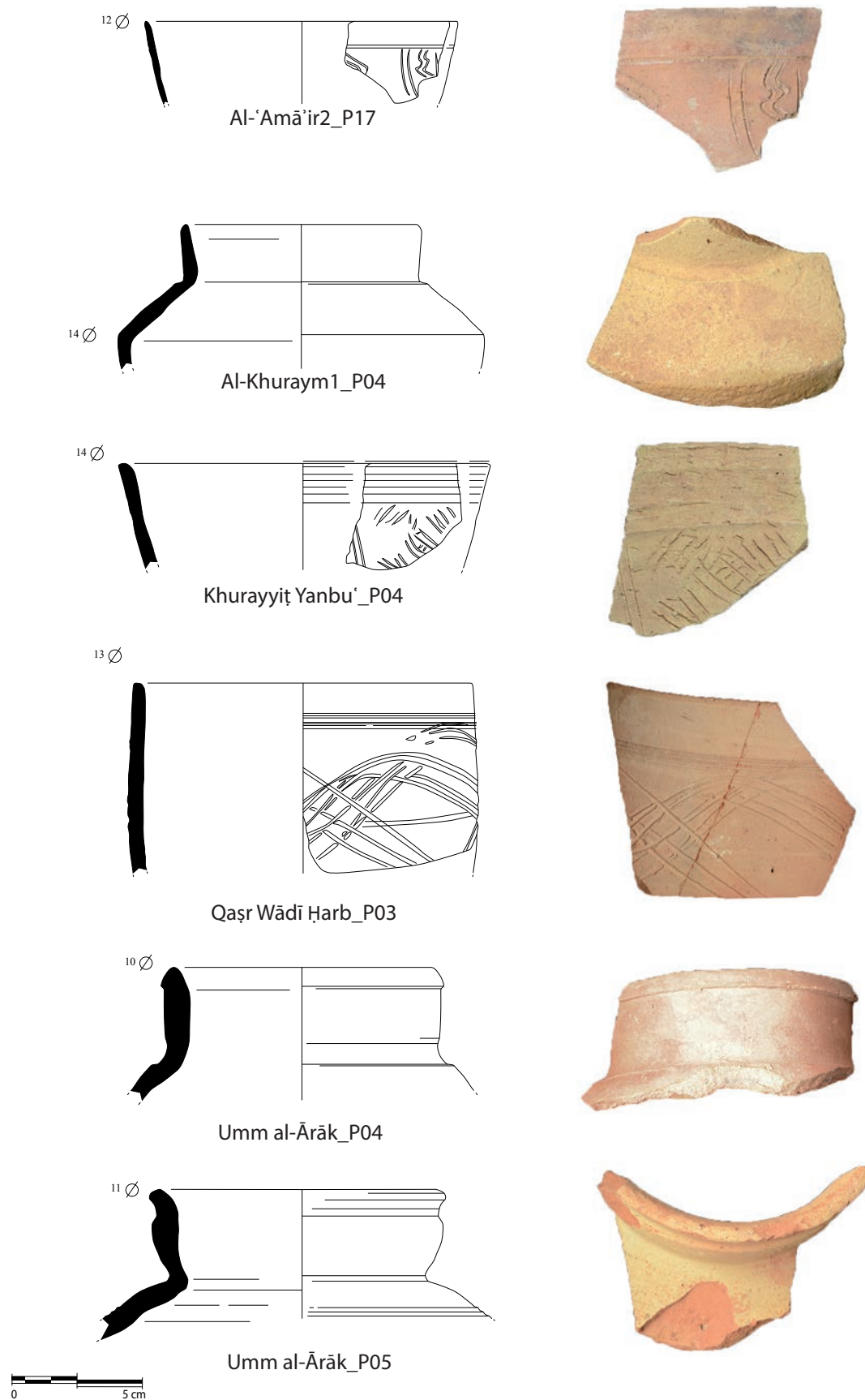


Fig. 1.

- Khurayyit Yanbu'_P04: Eggshell with incised vegetal decoration which can be compared with those found in the Samarra excavations (DGA 1940: pl. XLII, XLIV).
- Qaṣr Wādī Ḥarb_P03: Eggshell beaker.
- Umm al-Ārāk_P04 and P05: two amphora necks which can be clearly linked to the 'late Roman bag-shaped' category well represented in the Middle East (Pieri 2005: 117 fig. 76 type 5; Walmsley 2001: 313, fig. 2, nos 1–3 found in Capernaum (Northern Israel) and dated to the middle of the 8th century), as well as one sherd with green coloured glazed painted patterns which may be middle Islamic, 11–12th century (?).

A few overfired fragments collected from al-Khuraym and al-Raḥbah suggest the production of fired bricks rather than pottery manufacturing.

2/ Forms related to well known early medieval Islamic productions (fig. 2-4)

Fig. 2:

- Al-'Amā'ir2_P04 and P05;
- Al-Raḥbah_P01;
- Aḍ-Ḍulay'ah_P01;
- Qaṣr Wādī Ḥarb_P02: this kind of large open form, a basin, is related to the so-called "Mahesh ware" (early Abbasid) with some variations in the decoration, particularly with regard to the embossed decoration or digital printing (Whitcomb 1989: 279, fig. 2, from Aqaba, Southern Jordan).

Fig. 3:

- Al-'Amā'ir2_P06, P09 and P10: large basins or bowls of different size with everted rims, triangular section, overhanging rims, found in Aqaba and commonly found in Northern Jordan (Whitcomb 1989: 273, 280 fig. 3 d–g, j–l). Comb incised basins are part of the Umayyad pottery in Northern Jordan (Whitcomb 1989: 273). A pot similar to al-'Amā'ir2_P09 with a handle, was found in the Abbasid level of Tarsus (Özyar et al. 2017: 218, fig. 10, no. 2);
- Al-'Amā'ir2_P03: basin with tripod, comparable to an Abbasid splashed glazed basin found in Samarra (DGA 1940: pl. LVIII).

Fig. 4:

- Al-'Amā'ir1_P04: ewer with a large neck and probably a single handle. Abbasid basins with a short neck and a high handle were found in the Tarsus excavations in Eastern Turkey (Özyar et al. 2017: 217 fig. 10).
- Al-'Amā'ir2_P01 and P02: jar holder, pedestal base or lamp. A similar shape was found in Samarra, DGA 1940, pl. LX.
- Khurayyit Yanbu'_P03: handles with a thumb knob are characteristic of the Abbasid period. Examples in a fine fabric (category 110) related to the Eggshell category were found in level 1 of the Raḥba-Mayadin excavations (Rousset 1998: 198–199, pl. 65, fig. 659). Some were also found in the Gulf, at Murwab (Qatar, dated to the 9th century AD) (Guérin and al-Naimi 2010: 20 and fig. 2).

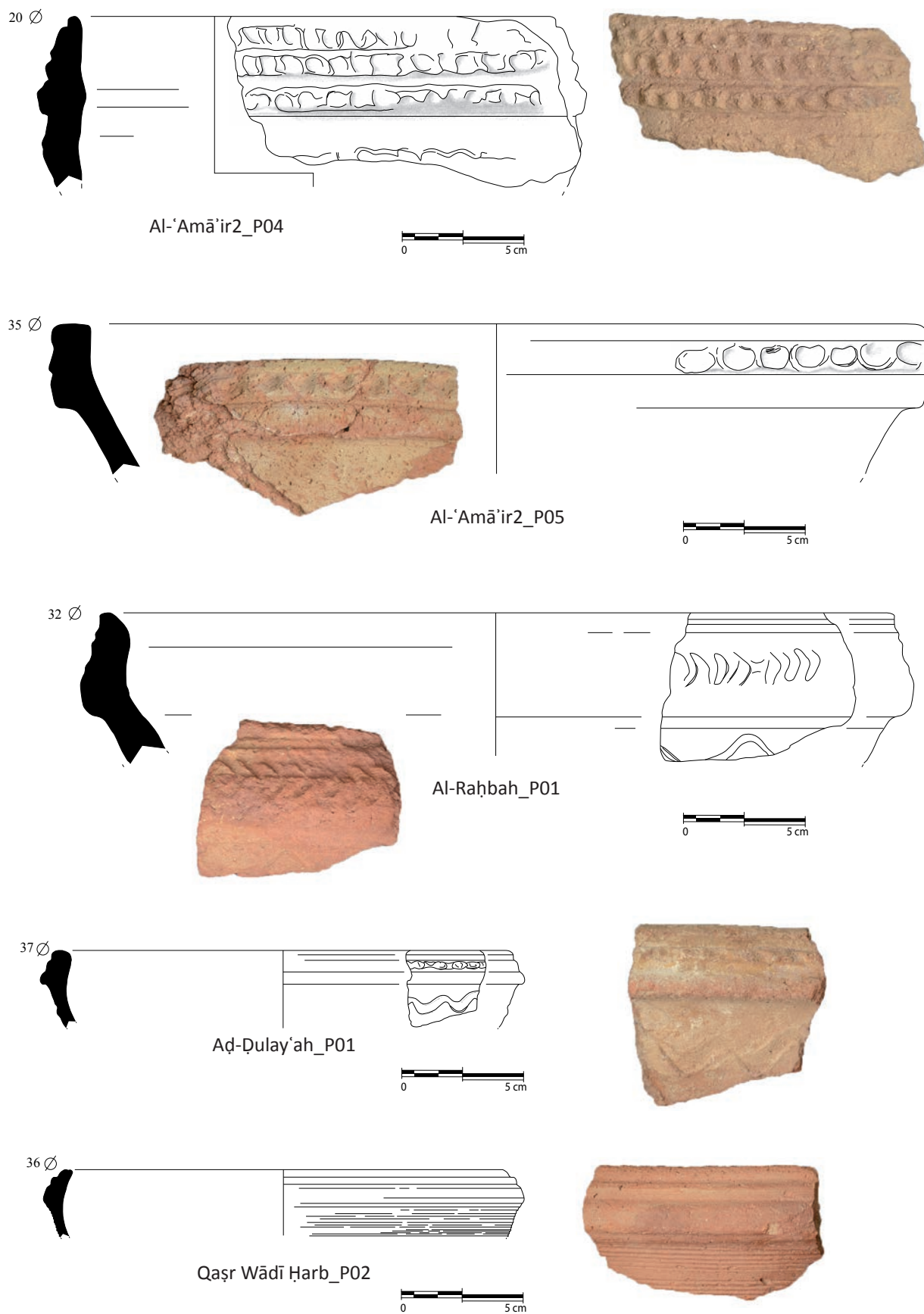


Fig. 2.

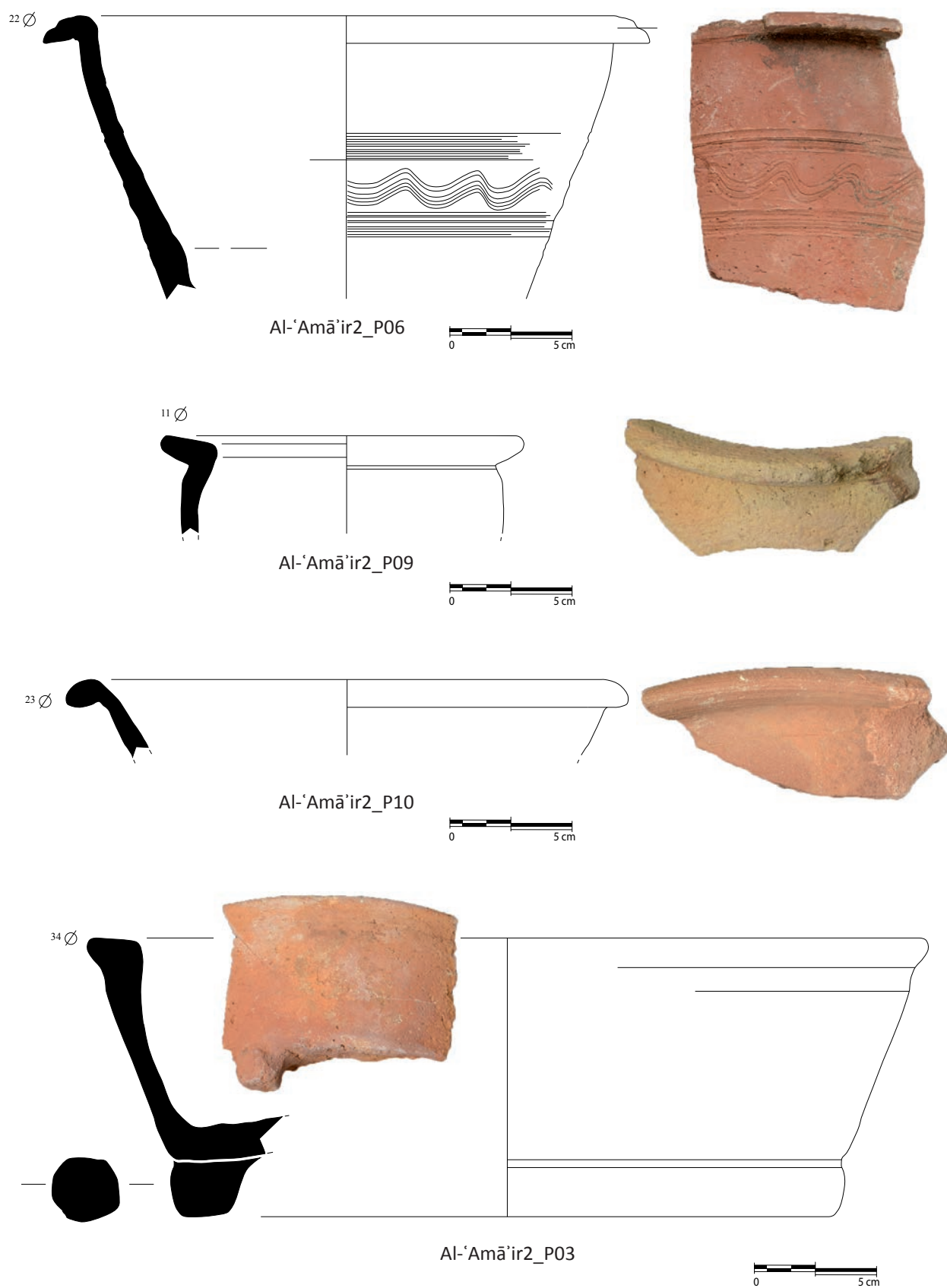


Fig. 3.

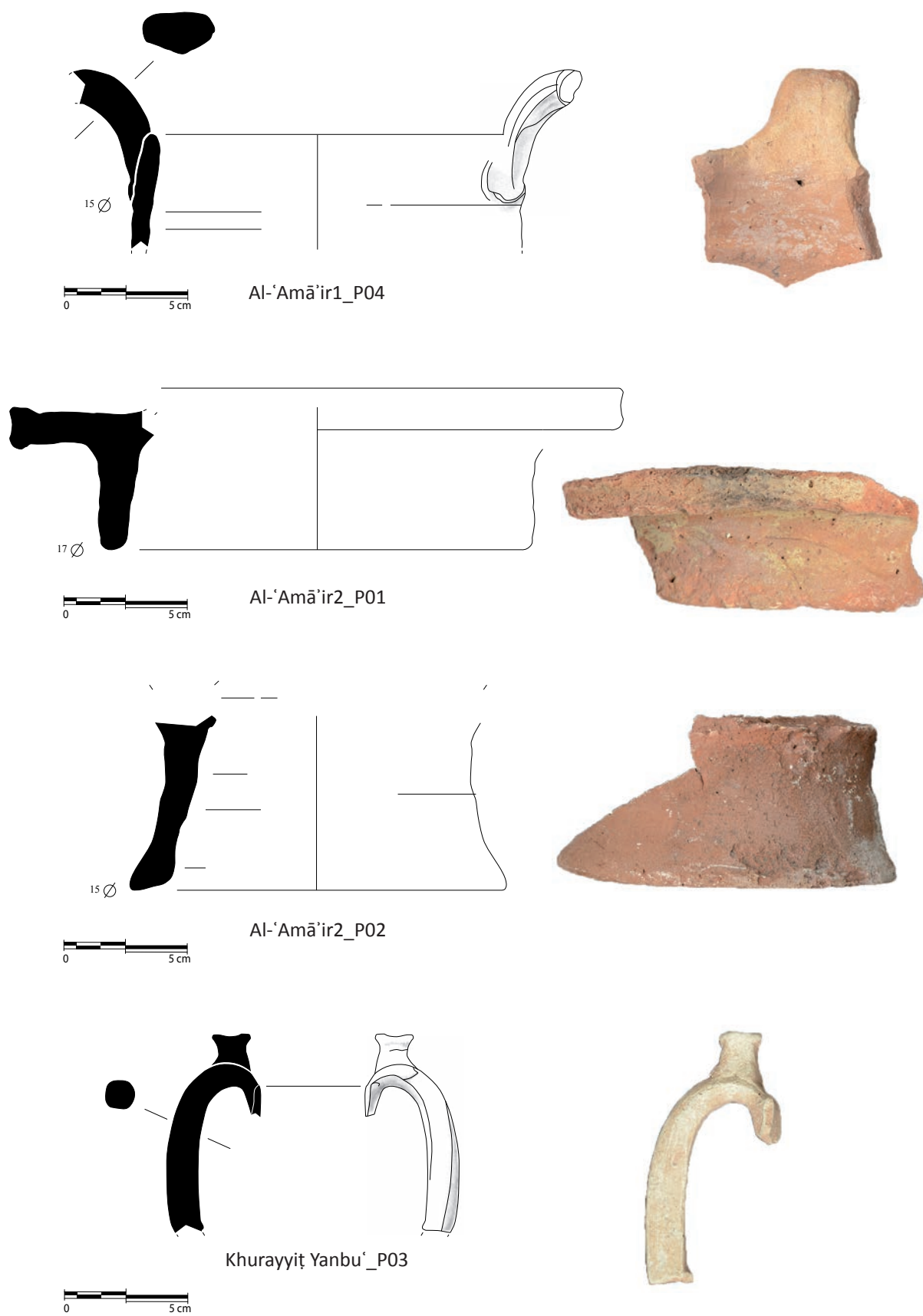


Fig. 4.

From the decoration point of view: combed decorations, straight and wavy lines, frequent in the Byzantine and Umayyad pottery assemblages are still in use in the Abbasid period, as demonstrated by the work of Whitcomb (1989, on the Aqaba assemblage dated from the 8–9th), and more recently the work of Holmqvist (2019: 44).

3/ Glazed pottery

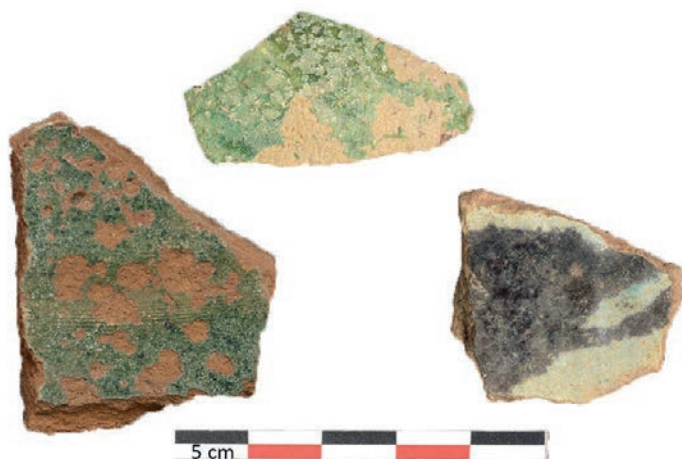


Fig. 5.

The fine yellow fabric covered with an opaque or white coloured glaze are characteristic of the Abbasid ware produced in Iraq during the 9th century, perhaps as a reaction to Chinese imports. Green glazed ware without slip and splashed ware with purple decoration in glaze (manganese ore) (**fig. 5**, Al-‘Amā’ir 2_P18) could be related to green glaze bowls ware found in Samarra (Falkner 1989: 23, pl. 56–57) and Sīrāf (period I) (Persian Gulf) (Whitehouse 1968: 14), both produced in the second half of the 9th and into the tenth century.

The facies of the ceramics collected in 2019 on the sites between al-‘Ulā and Medina confirms an occupation during the early Islamic period, 7th to 9th century, i.e. Umayyad and early Abbasid, with one identified sherd from Umm al-Ārāk dated possibly to the 11th–12th century.

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