



Laila Nehmé

Ancient Hegra, a Nabataean Site in a Semi-arid Environment. The Urban Space and Preliminary Results from the First Excavation Season

The general framework which the organiser of the session, Jean-Marie Dentzer, has suggested us to apply to each of the sites and regions in which we are working is particularly well fitted to Madâ'in Sâlih, ancient Hegra, in Saudi Arabia. Indeed, this site developed, in an arid environment, from the 1st century BC to the 4th century AD, perhaps even later, as a city surrounded by a rampart and associated with a large oasis which provided it with food and water. An earlier occupation, from the Iron Age or the Hellenistic period, is also attested but is not very documented by the excavations yet. In this paper, we shall consider successively the geographical conditions which allowed for the installation of a city, the definition of the various elements it is made of, and the relationship between the site and its surroundings.

Madâ'in Sâlih lies in the Saudi Arabian Hijâz (fig. 1), between the cities of Medina, Tabûk and Taymâ'. Its ancient name is Hegra, as it appears both in Nabataean inscri-



Fig. 1 – Map showing the location of the site.



Fig. 2 – Landsat satellite image showing the location of Madâ'in Sâlih in relation to its immediate environment.

ptions and in the classical authors¹, and it is the southernmost site of the Nabataean kingdom. It is also the most extreme point, in the continental part of the Arabian Peninsula, where Roman presence is attested in a permanent form through elements belonging to the Legio III Cyrenaica, as well as auxiliary troops².

From the climatic point of view, the region of Madâ'in Sâlih suffers from strong aridity, with a rainfall average of about 50 mm per year. Thus, for instance, between 1968 and 1973, the small city of al-'Ulâ, 20 km south of Hegra, received an average of only 46 mm of rain per year. However, this average hides extremes such as 2 mm one year and 100 mm another. More recently, rainfall was even lower. This very arid climate is balanced by two factors: first, the site lies in the middle of a natural gutter which collects the flows of water running down from the wadis which cut the great Jabal al-'Uwayrid to the west, as well as those running down from the slopes of the so-called Hadb Hamar to the east (fig. 2). The existence of this gutter was put to light by P. Courbon, the Madâ'in Sâlih project's topographer, who drew a section on which it appears particularly well (fig. 3)³. For this reason, the site lies in an ideal position from the

aquifer point of view and this is probably one of the significant aspects which motivated the installation and development of an ancient town there. It also explains why a large number of drillings allow today to grow citrus fruit and other plants in expanding farms north of the site. To this very important factor, one should add the existence of arable land, the presence of which has been evidenced by J.-B. Rigot, the project's geographer⁴.

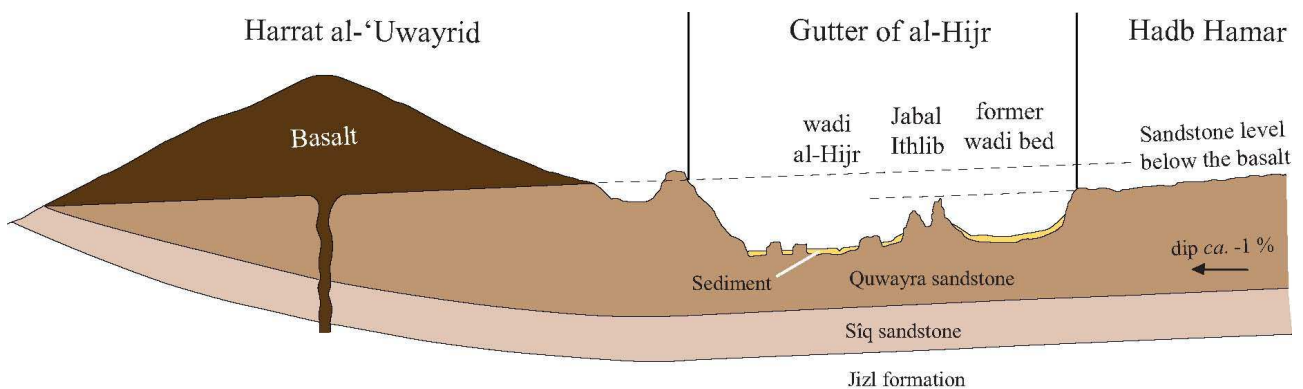


Fig. 3 – Section showing the gutter in which the site lies (after COURBON 2008, fig. 2). According to P. Courbon, the gutter of al-Hijr is due to the digging by the wadi. He also notes that the Hadb Hamar was not protected by the basalt and is therefore lower than the Harrat al-'Uwayrid.

¹ For complete references, see NEHMÉ ET AL. 2006, 42–43.

² On the evidence for both, see most recently NEHMÉ 2010, 44–46.

³ COURBON 2008, 50 and fig. 2.

⁴ Rigot in NEHMÉ ET AL. 2006, 66–67 and fig. 12, 58.

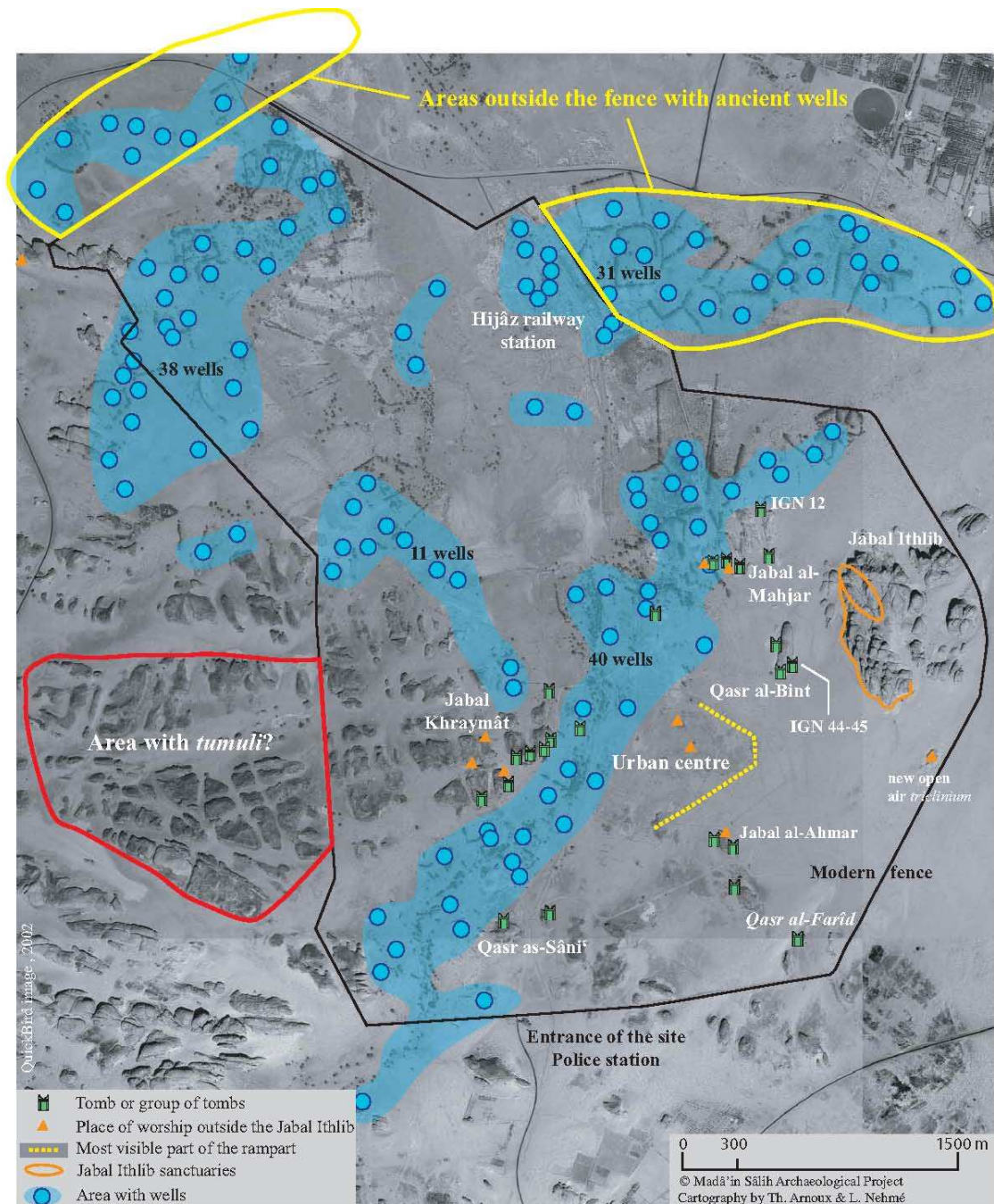


Fig. 4 – Satellite image of the site showing the names of the areas and the distribution of the monuments.

The two factors combined have led to the exploitation, in Antiquity but at a date yet unknown, of a vast agricultural territory. Note that in the middle ages, the site was famous for its wells and cultivated fields, as reported by the Arab geographer al-Muqaddasi in the 10th century⁵.

Presently, the site is surrounded by an irregularly shaped metallic fence (fig. 4). The surface of the enclosed area is 1460 hectares, which is considerable. This fence defines an archaeological park which does not necessarily correspond to one or more homogeneous entities in Antiquity. Indeed, the systematic

⁵ Muqaddasi, 84.

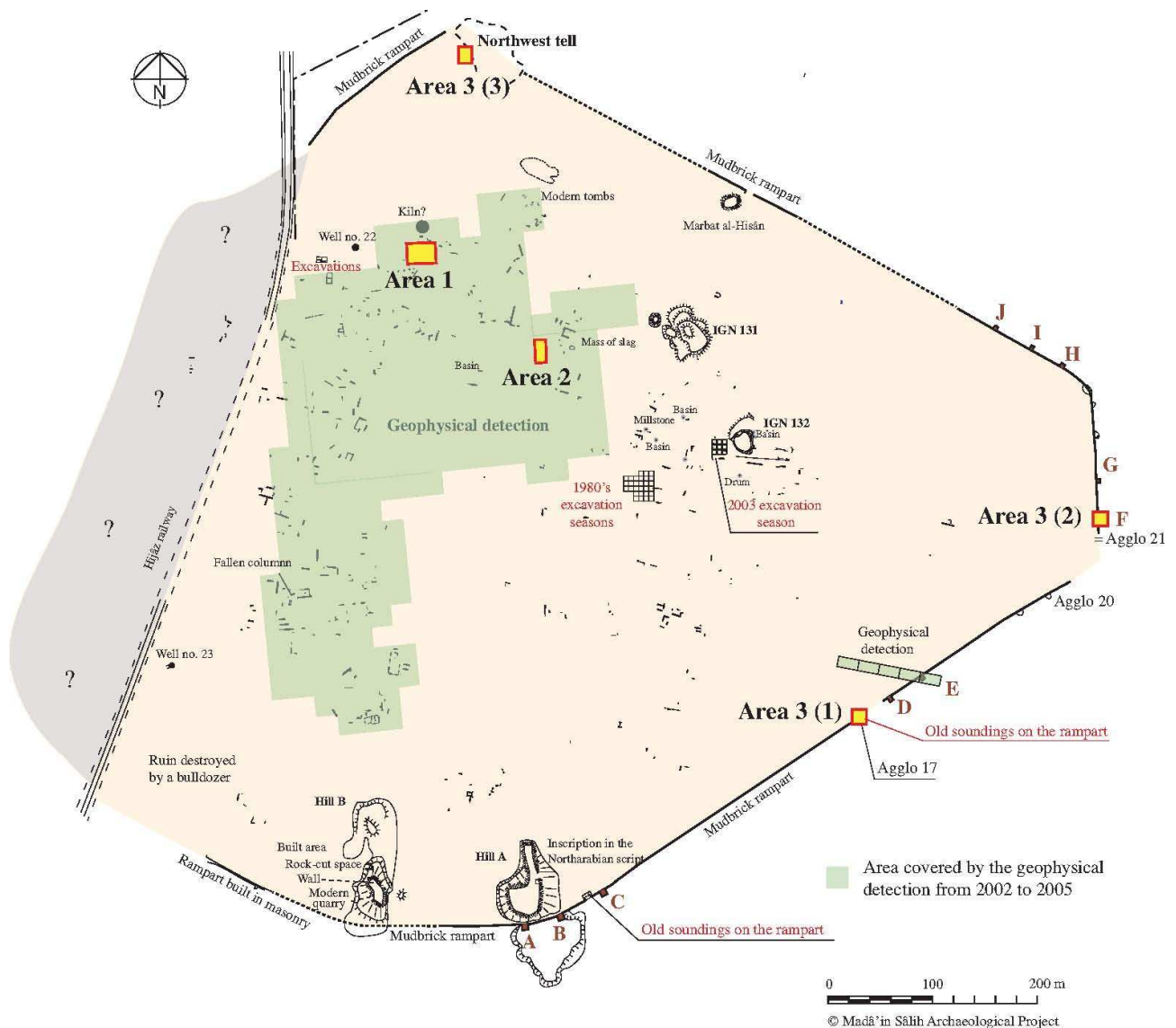


Fig. 5 – General plan of the urban centre of the site and the location of the excavations carried out in 2008.

survey of the whole area undertaken by a French team of archaeologists between 2001 and 2005⁶ has shown that two groups of remains are located beyond the limits of this park (fig. 4). One of them concerns the wells, twenty-four of which have been recorded north of the fence, but there may be more. The other concerns the *tumuli*, a group of structures of funerary character, the date of which is not yet known. Their distribution extends probably beyond the fence in the west. Indeed, it is not likely that the *tumuli*, a great number of which have been recorded in the west and southwest parts of the site, stop at the fence. We have not surveyed the area beyond it but it would be interesting to do so in order to determine how far west they are attested. The map prepared by the Saudi authorities for the inscription of the site on the UNESCO World Heritage List⁷ contains a buffer zone which includes the areas I have just mentioned.

These preliminary remarks aim at underlining the fact that the plain of al-Hijr, which is roughly 22 km from north to south and 18 km from east to west, contains several categories of remains in a relatively wide

⁶ First under the direction of J.-M. Dentzer, then under the direction of the author. This project was financed by the French Ministry of Foreign Affairs and was undertaken under the aegis of the Deputy Ministry for Antiquities and Museums in Riyadh.

⁷ Which was accepted in 2008.

space, the centre of which is generally considered to be the urban centre of Hegra and the periphery of which draws several circles which will now be defined.

One may first examine whether ancient Hegra was an "urban" site. If we consider that a city is defined by the existence of areas devoted to various and specialized functions, then Hegra is definitely an urban site, as will be shown below. Since the exploration of the Dominican fathers A. Jaussen and R. Savignac, at the beginning of the 20th century, we know that an area with what appeared to be a dense network of buildings existed in the flat center of the plain (fig. 5). Its surface is about sixty hectares and it has the form of a trapezium the long side of which is on the west. The question of whether this urban centre was founded as a result of a deliberate political decision by the Nabatean authorities or whether it developed naturally from a small group of dwellings is not yet answered. The excavations undertaken in 2008⁸ have shown that the most ancient traces of human presence in this area are not earlier than the Iron Age. A few sherds found in the lowest *loci* of Area 1, excavated by G. Charloux, and a few residual sherds in the part of Area 2 excavated by Z. T. Fiema may date to this period. A few Hellenistic and Late Hellenistic sherds have also been found in both areas. This is, however, not very significant and certainly not conclusive regarding the foundation of the city. It is certain, however, that the excavated trenches witness, from the first century onwards, a more or less uninterrupted period of occupation, associated with a series of well identified architectural phases. This period of occupation lasted from the second half of the 1st century BC to the interval between the 4th to the 6th century AD⁹.

The city is surrounded by a mudbrick rampart which forms three sides of a trapezium. It is known since Jaussen and Savignac and its track has been surveyed in the last few years. It is particularly well visible on the aerial photographs, except in the western part, where it was damaged by the Hijâz railway. It is probable, however, that it did not extend as far as monumental tombs IGN 50-54, cut on the eastern side of a small outcrop in the Jabal al-Khraymât area (fig. 6). These tombs are at a distance of 170 m from the Hijâz railway and it is almost certain that the line of the ancient rampart ran in this interval.

It does not seem that the surface enclosed by the rampart was all built up. Indeed, the geophysical detection undertaken in 2004 in a 10 x 100 m strip across the small, east side, of the trapezium (see the location on fig. 5), did not reveal the presence of any structures, whereas in the centre of the city, the image produced by the geophysical detection revealed the presence of very dense dwelling quarters as well as a network of streets, all of which appeared during the excavations¹⁰.

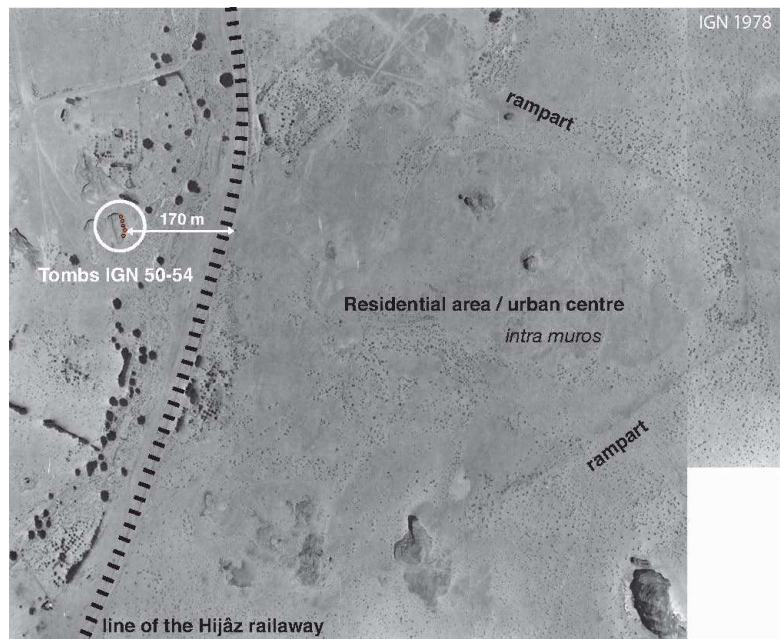


Fig. 6 – Aerial photograph of the urban centre (IGN 1978).

⁸ A Saudi-French excavation project started in 2008. It is directed by L. Nehmé, D. al-Talhi and F. Villeneuve and is placed the aegis of the same bodies as those mentioned in note 6 above. The report on the first season is being prepared and will be published within a few months. See NEHMÉ, (AL-)TALHI, VILLENEUVE (forthcoming)

⁹ See the report to be published in NEHMÉ, (AL-)TALHI, VILLENEUVE 2010.

¹⁰ The geophysical detection of the site was undertaken between 2002 and 2005 by A. Kermorvant, director of the Laboratoire d'archéométrie de l'université de Tours.



Fig. 7 – Tower tomb excavated by W. Abu-Azizeh on the summit of the Jabal al-Khraymât.

Determining when the rampart was built was one of the objectives of the first excavation season at Madâ'in Sâlih in 2008. The preliminary results obtained in the soundings undertaken by Fr. Villeneuve in the area of a tower which abuts the rampart in its eastern section ("Agglo 21" on fig. 5), have shown that it was founded on sand rather than on the rock, with no particular desire to homogenize its aspect, and that it was built rather quickly. Its width varies from 1.50 to 2.35 m and some sections have, at the base of one face or both faces of the wall, one or two courses of stones. Finally, in order to save time and effort, the builders, who were probably divided into several groups, hence the variation of the wall in thickness, have sometimes abutted it on preexisting sandstone outcrops, particularly in the south.

These remarks tend to confirm that the building of the rampart was decided and commissioned by an authority. Was it decided by Aretas IV (9 BC-AD 40), who wished to draw the outlines of the city he wanted to develop? Nothing, for the moment, contradicts this hypothesis. What is certain, however, as shown by the 2008 excavations, is that the rampart was not built around an empty city which would have developed progressively and, probably, never completely. Indeed, the soundings made along the wall show that the latter was built in the first century AD, not before. Not only does it include, in some parts, re-used stone material but

also, the excavations in Areas 1 and 2 have shown the existence of phases which predate the first century AD. Immediately after the construction of the wall or later in the first century, several towers, thirteen of which have been recorded at a relatively regular interval on the eastern sections of the rampart, have been built against the curtain wall of the rampart. The results obtained this year, therefore, show that the building of the wall was contemporary with at least some of the monumental tombs since, as is well known, those which bear a dated Nabataean inscription were cut between AD 1-75. Before AD 1, there was probably already, inside the area later enclosed by the rampart, some sort of domestic installations built in masonry. It seems therefore that Hegra was not a foundation *ex nihilo* but that the Nabataean authorities simply decided to encourage the development of a city there and gave it the necessary impulse. We know from a Latin inscription¹¹, which probably mentions it, that this rampart was restored by the *civitas* of Hegra, under the authority of two centurions of the Third Cyrenaica, in AD 175-177.

By the simple fact that it exists, the city wall defines an area which is inside it and an area which is outside it. The area which is outside it contains three groups of remains, two of which are part of ancient Hegra while the third was its agricultural territory.

The first group is made of various necropolises (see fig. 4): those which contain the monumental tombs, characterized by a rock-cut chamber inside which are cut places for burial, ninety-four of which bear a decorated façade; those made of pit tombs cut in the ground at various levels of the outcrops, ca. 1900 of which have been surveyed in 2003; finally those with the *tumuli*, 325 of which have been recorded, mainly in the western and southwestern parts of the site.

These three categories are not necessarily contemporary: the monumental tombs and the pit tombs are certainly Nabataean while the *tumuli* are thought to be earlier. One of them, in the Jabal al-Khraymât, was excavated in 2008 by W. Abu-Azizeh. The *tumulus*, which was shapeless before excavation, turned out to be a tower tomb made of two towers, one within the other, the diameter of the largest being 7.30 m (fig. 7).

¹¹ (AL-)TALHI, (AL-)DAIRE 2005.

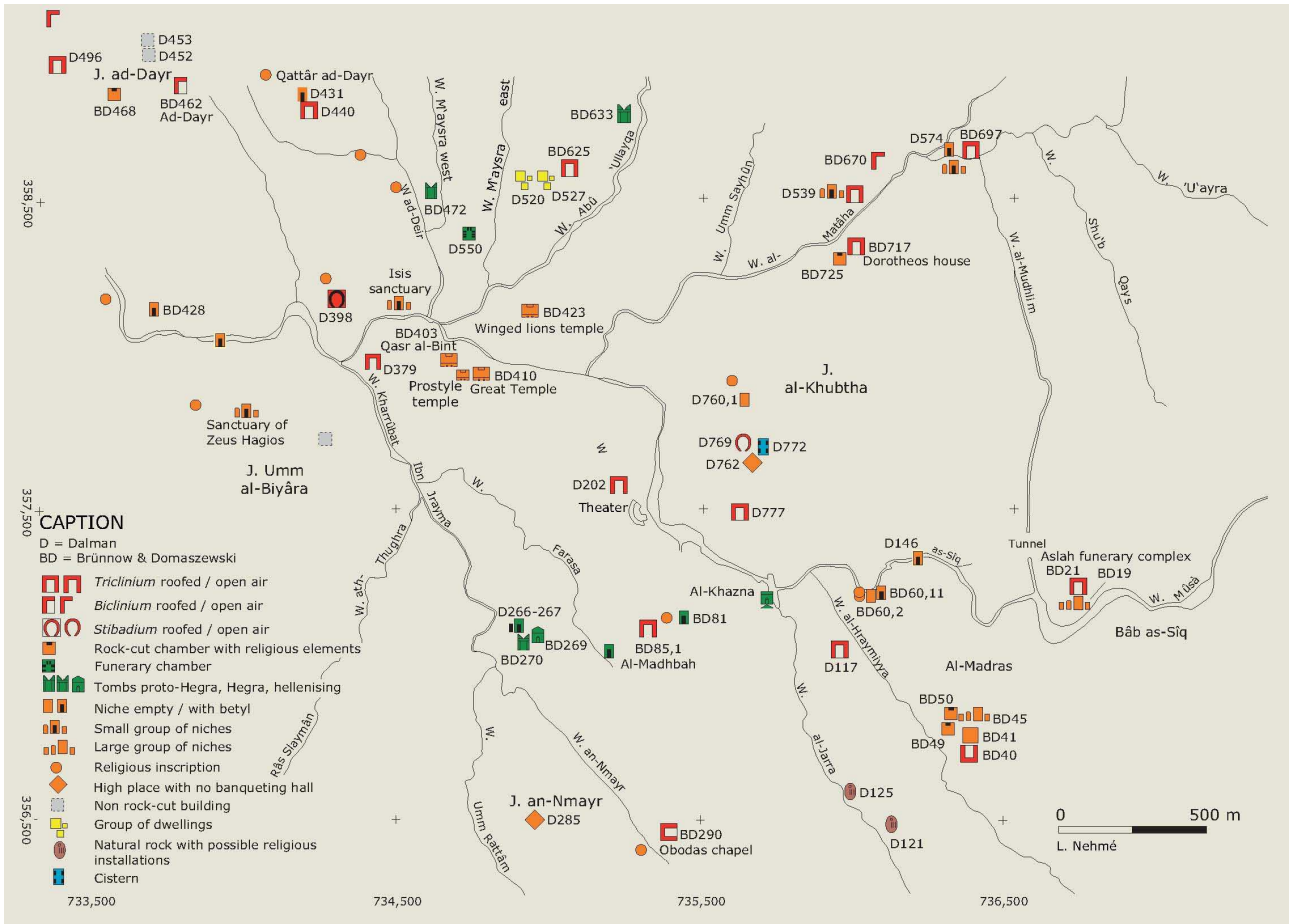


Fig. 8 – The distribution of the main sanctuaries and banqueting halls in Petra.

The tomb itself, where the body was buried, was built in the middle of the central tower. A room, probably some sort of appendix to the structure, was built a few meters south. Two sherds only were found during the excavation. One of them may belong to the Bronze Age or the Iron Age while the other is Nabataean. These two sherds are, unfortunately, not conclusive for dating the whole structure. All that can be said before we get the results of the C¹⁴ dating of a few bones, is that the Nabataean sherd was found below the destruction of the room, which gives a *terminus post quem* for this destruction. As for its building date, Bronze Age or Iron Age, this remains to be determined. The other pending question is whether this *tumulus*, and probably part or all the monuments of the same type, are associated to a settlement. This question will be examined in the following seasons of the excavation project.

Most of the monumental tombs are grouped in what we have called necropolises, the most important of which are in the Jabal al-Mahjar, the Jabal al-Khraymât, the Jabal al-Ahmar and the Qasr al-Bint. Only a small number of tombs are cut in isolated outcrops. As one may see on fig. 4, the necropolises surround the residential area, sometimes at a certain distance, this being determined partly by the location of the outcrops in which they could be carved. The furthest tomb, IGN 12, in the Jabal al-Mahjar area, is almost 1,500 m northeast of the centre of the city. The façades of the tombs are generally orientated towards the settlement and, as much as possible, visible from it. The few exceptions are either isolated tombs, such as IGN 12, or tombs for which there was not enough space in the best located rock faces, such as the western flank of Qasr al-Bint. This is the case for IGN 44 and 45. Very much as in Petra for the most prestigious tombs, it was important that the monuments were visible from the city. These necropolises belong naturally to the

Nabataean phase of the site. The distribution of the ordinary pit tombs shows that they were cut on the same outcrops as those with the monumental tombs and sometimes in their immediate vicinity.

As far as the religious monuments are concerned, we would like to insist on the fact that their distribution and their organisation does not follow the same pattern as in Petra. We have already explained elsewhere¹² how the religious space is organised in the Nabataean capital. In Petra, there are sanctuaries or elements of sanctuaries all over the site and in various contexts (fig. 8):

- in the urban centre, where the main temples of the city were built;
- on the summit of the main high mountains, from Jabal al-Khubtha to Jabal al-Nmayr, where sanctuaries were made accessible through processional ways bordered by small ex-votos;
- on the intermediate levels of the mountains with terraced slopes, such as al-M'aysra, where some of the sanctuaries are associated with large rock-cut houses;
- in remote and relatively hidden places such as Qattâr ad-Dayr, on the way up to the Dayr, the two Isis sanctuaries – one in the area of the Wadi as-Siyyagh and one at the foot of the Jabal Hârûn –, Sidd al-Ma'jîn, and even the so-called Obodas Chapel in an-Nmayr. It has now been established that some at least of these sanctuaries were not used much beyond the Roman annexation in AD 106, and were therefore used mainly in the Nabataean period.

In Petra, it is thus possible to conclude that the religious space is extremely diluted in the urban environment. The banqueting halls, 118 of which have been recorded¹³ and 40 of which may have a religious function considering their archaeological context, are the central element of the sanctuaries. This is the case in a large number of isolated ones, such as the Nmayr, where L. Tholbecq has put to light at least four such places, three of them roofed and one of them open air¹⁴, all of which are built in a relatively narrow terrace surrounded by cliffs. Some areas of the site, such as al-Madras, may even have been almost entirely devoted to banqueting halls and to the *symposia* which met in them¹⁵.

Hegra shares with Petra the importance of the banqueting halls but the distribution pattern of the monuments is very different. Let us examine first the question of the banqueting halls. Until the research conducted recently on the site, the only banqueting hall known so far was the so-called Dîwân, a large roofed *triclinium* cut at great expense at the entrance of the Jabal Ithlib, the group of high outcrops which lie northeast of the site¹⁶. It is a large room, ca. 10 by 12 m and 8 m high, widely open, the entrance of which is flanked by pilasters. Three benches are carved in the rock on the east, south and west sides of the room. Apart from this *triclinium*, the archaeological survey undertaken between 2002 and 2005 and the excavations carried out in 2008 have led to the discovery of several new installations. We have first recorded, southeast of Jabal Ithlib (see fig. 4 for location), a rough open air installation on top of an isolated outcrop around and over which are carved several niches and betyls¹⁷. Inside the Jabal Ithlib proper (fig. 9), surveys and excavations revealed the existence of three more banqueting halls, associated with niches and, as is often the case, water basins. One of these is entirely built in masonry¹⁸ (fig. 10), the other is entirely rock-cut¹⁹ while the building technique of the third, Ith 38.1, is mixed, probably because the level of the rock was not high enough for a bench to be carved, hence the grooves that were cut all around, in which chips of crumbling sandstone were forced. It is possible that other banqueting halls existed in the Jabal Ithlib area but are either light installations which have left no visible trace in the landscape or are installations which are still

¹² NEHMÉ 1997, 1032–1038; NEHMÉ ET AL. 2006, 89–90.

¹³ TARRIER 1988 and NEHMÉ 2003.

¹⁴ Brünnow no. 290 and 291, N19, and a *triclinium* built in masonry in front of Brünnow no. 291 (a *stibadium* which was put to light in 2005 in front of niches Brünnow no. 287 may have a different function). See THOLBECCQ, DURAND 2005, 303, and THOLBECCQ, DURAND, BOUCHAUD 2008 (forthcoming).

¹⁵ NEHMÉ 1997, 1039.

¹⁶ JAUSSEN, SAVIGNAC 1909-1914, 405–411.

¹⁷ NEHMÉ ET AL. 2006, 98–102, § “Colline «Stèles et graf.»”, Ith77m, fig. 65, p. 101. In the book recently published by H. al-Fassi, a photograph of this installation is given pl. XIII, on p. 105. The caption has “ground burial”, but it is certain that it is not a funerary monument.

¹⁸ NEHMÉ, (AL-)TALHI, VILLENEUVE (forthcoming).

¹⁹ It is numbered Ith 54. Cf. DENTZER ET AL. 2005, 64, pl. 9.4 and NEHMÉ, (AL-)TALHI, VILLENEUVE 2008 (forthcoming).

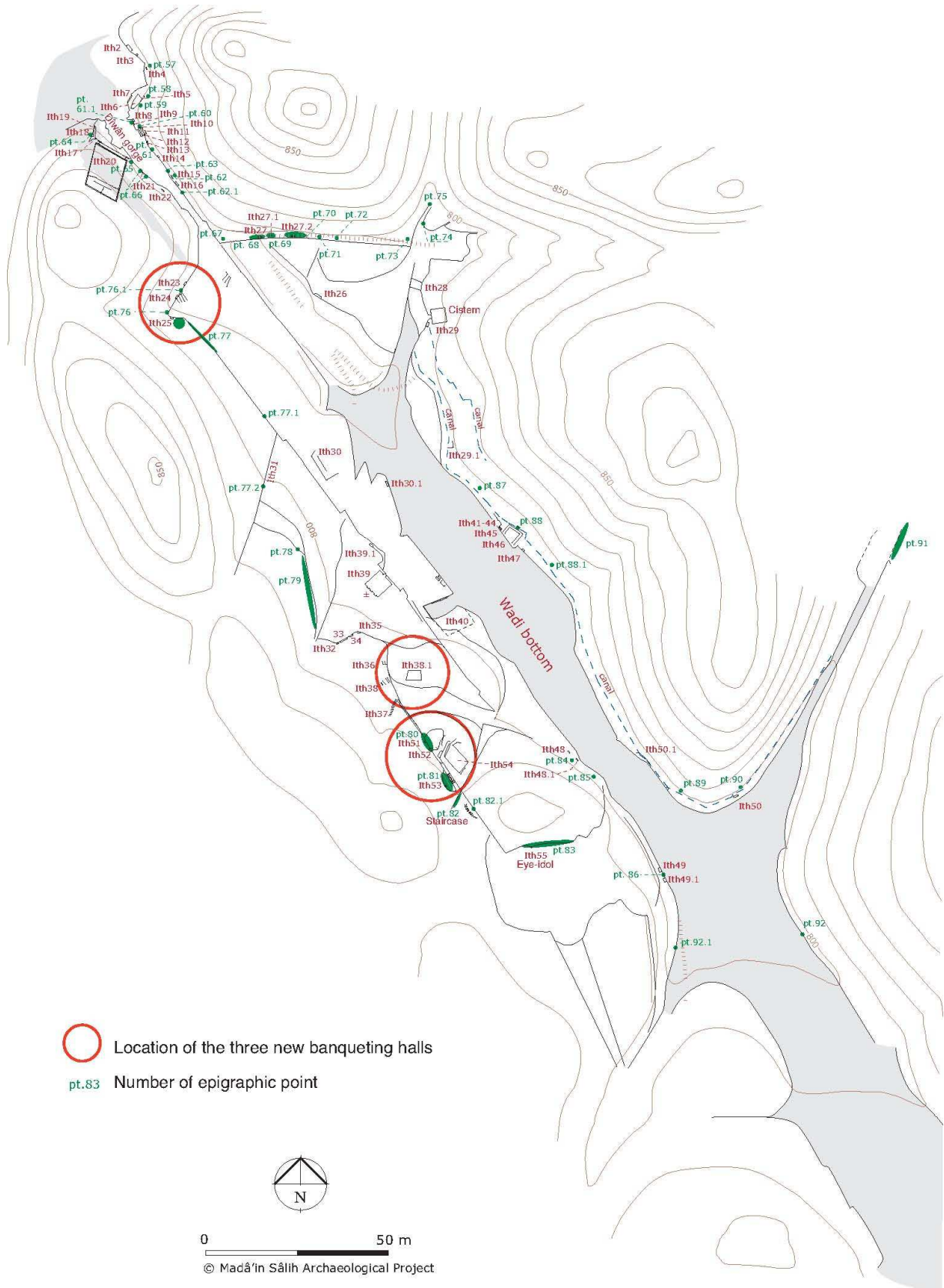


Fig. 9 – Map of the internal part of the Jabal Ithlib area.

buried in the sand. All in all, it seems that the Jabal Ithlib was, very much like al-Madras in Petra, an area easily accessible but relatively far from the turmoil of the city, with its own water resources provided, in the case of the Jabal Ithlib, by one cistern. In this area, several meeting places for religious *symposia* were installed at a certain distance from each other and used independantly, each one of them being attended by its own members, who have often carved their signatures in the vicinity of the meeting places, forming sometimes lists of proper names. The only exception to this pattern is the Dīwân, which may have been used



Fig. 10 – Newly excavated *triclinium* built in masonry in the Jabal Ithlib area.

by more than one *symposium*, according to a calendar of religious festivals we know nothing about.

As far as the distribution pattern of the religious monuments is concerned, it is much simpler in Hegra than it is in Petra. Apart from the Jabal Ithlib and its surroundings, there are only nine identified religious monuments in Hegra²⁰, three of which are betyls carved in the vicinity of tombs, three more are niches or groups of niches, and the last two are rock-cut niches with betyls carved on two of the rocky outcrops which rise in the residential area. Therefore, in Hegra, we have on the one hand an area with banqueting halls for the religious *symposia*, and on the other hand isolated monuments which are not really significant for such a large site. This is probably not all that existed and there may be more to discover, either *intra-muros* or *extra-muros*, in the form of larger sanctuaries or temples. Several traces of monumental architecture, with fallen columns, column drums and capitals, have been surveyed and may belong to these.

All in all, one can trace, in and around Hegra, several circles which partly cover each other:

- the city *intra-muros*, which represents only a small part of the site but which has a very central position in it. This city has been explored through a geophysical detection and is being excavated by a Saudi-French team of archaeologists;
- the Nabataean necropolises, made of monumental and ordinary tombs;
- the *tumuli* necropolis, west and southwest of the site, the date of which is still not known and which may belong to a settlement which has not been identified yet;
- the area with the banqueting halls, in the Jabal Ithlib;
- the oasis, which forms, like the Bayda plain and the Jabal ash-Sharâ slopes near Petra, the granary of Hegra. The oasis lies in the areas in which the agricultural lands are the most abundant, in the north and northwest parts of the site. One should note that among the macro-remains which have been sampled by Charlène Bouchaud in 2008, there are full wheat seeds as well as rachis which attest the existence of a local irrigated agriculture. There were indeed, in Hegra, agricultural resources which made it possible for a city to develop and which helped feeding passing people.

Form a wider perspective, one last aspect should be examined, and that is the integration of the site into a wider regional context. We have not been able to survey the whole area around Madâ'in Sâlih but thanks to the detailed survey we have made in some areas and to visits by car in others, the following comments can be made (fig. 11). In the southwest, there is a large area with dissected sandstone outcrops, which reaches almost the foothills of Harrat al-'Uwayrid. This is where are found all the *tumuli* but this also a

²⁰ NEHMÉ ET AL. 2006, 90–91.

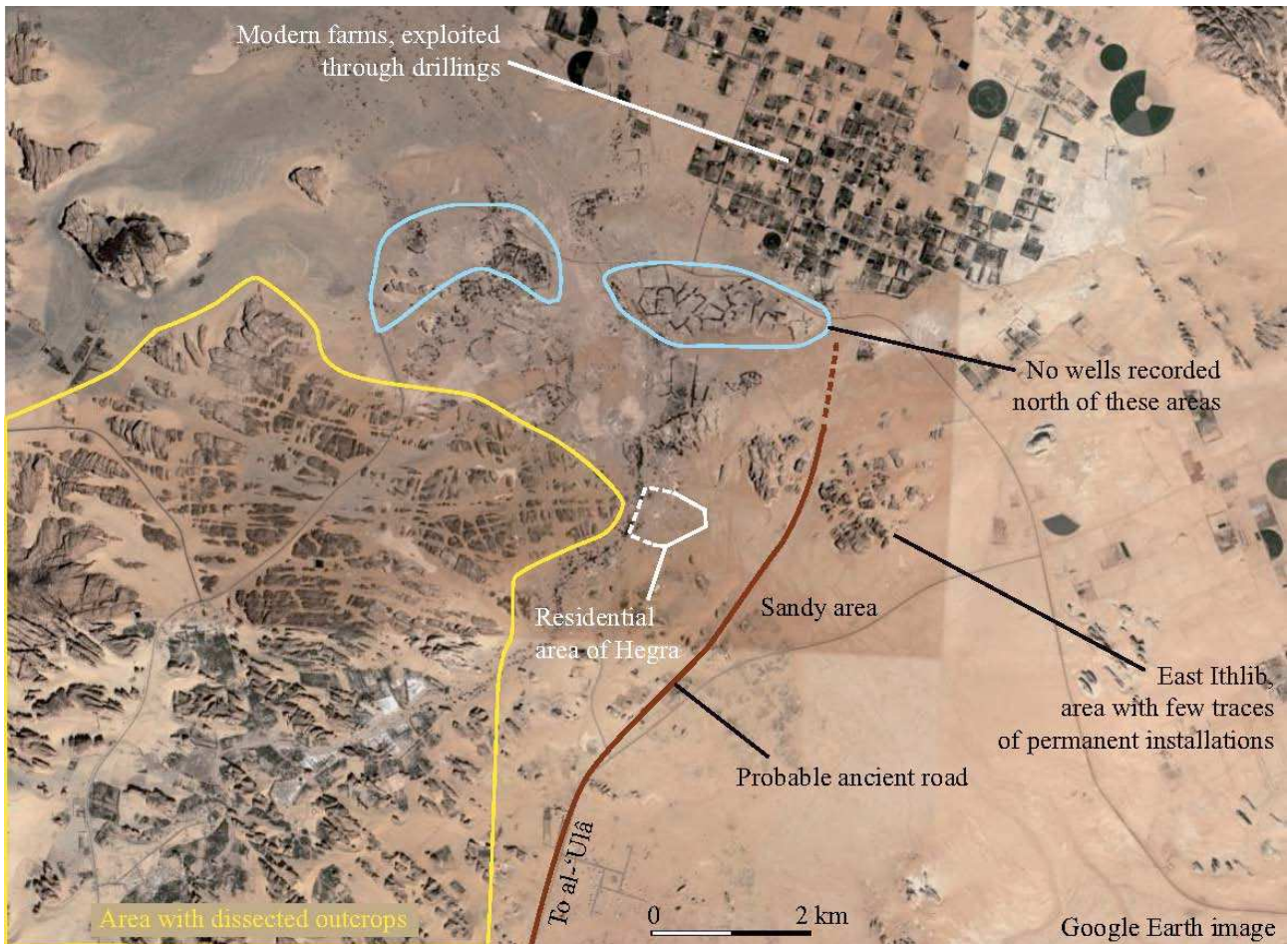


Fig. 11 – Google Earth image showing the areas around the site.

relatively repellent area. In the northwest, nothing was noticed beyond the wells and the furthest traces of agricultural exploitation, but this does not mean that there was nothing. In the north, the ancient oasis may theoretically have occupied the whole plain of al-Hijr, up to the sandstone mountains which bar the horizon. The north part of this plain is now being cultivated with the help of drillings. We have surveyed part of this area, the closest to the site, and it seems that the furthest wells of the ancient oasis are relatively far from the extreme limits of the plain, but this remains to be confirmed. In the east, one arrives rather quickly to large areas of sand accumulation, not very suitable to human occupation. The most conspicuous element of the landscape is the continuation of the Jabal Ithlib, beyond the modern fence. The survey of this area by several members of the team was motivated by the question whether it belonged to the ancient site of Hegra or not. The result from the survey showed that there are very few structures, whether rock-cut or built in masonry. Most of the ancient remains which have been recorded are rock-drawings and graffiti in various languages and scripts. The nature of the remains is more reminiscent of a sporadic occupation by nomads or other passer-by than of a settled occupation. Finally, in the south, the quantity of remains, mainly epigraphic, increases as one gets closer to al-'Ulâ, the ancient capital of the kingdom of Lihyân. Between the sites of Madâ'in Sâlih and al-'Ulâ, the remains are distributed on each side of a north-south road which is the major communication axis in this area. We assume that this axis goes as far as Mabrak an-Nâqa, a very impressive gorge, ca. 12 km north of Hegra, one side of which is completely covered with inscriptions²¹. Beyond this point, the real question concerning the regional context of Hegra is the network of caravan

²¹ The references of these inscriptions are given in NEHMÉ 2010, 46, n. 51.

tracks to which it is linked beyond the north-south axis we have just mentioned. There are two possible itineraries for the caravan track which presumably joined Hegra and Petra in Antiquity. The first is the one which runs alongside the Hijâz railway and the Darb al-Hajj ash-Shâmî, that is the pilgrimage route from Damascus to Mecca. The second, called Darb al-Bakra, has been surveyed recently by a team directed by professor Ali al-Ghabban²². It runs west of the Hijâz railway and, mainly in its northern part, several clusters of Nabataean inscriptions have been recorded. The archaeological and epigraphic remains of the Darb al-Bakra are being prepared for publication.

In conclusion, we may say that Hegra benefitted from very favorable geographic conditions which allowed for the development of a city during the Nabataean period. Before that, the main site in the region was al-'Ulâ, and after that, in the Umayyad period, Hegra was probably abandoned to the benefice of al-Mâbiyât, 25 km south of al-'Ulâ, which is being excavated by a team from King Saud University. This shift from Hegra to Mâbiyât reflects probably a major shift in the organisation of the territory in this area of northwest Arabia, with a desire to move from the Nabataean-Roman site to another newly founded settlement.

Laila Nehmé
CNRS, UMR 8167
E-mail: laila.nehme@ivry.cnrs.fr

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