

The Hinterland of Petra from the Edomite to the Islamic Periods: The Jabal ash-Sharāh Survey (1996-1997)

History of the Project

In order to complement the general inventory of Petra's monuments which was conducted by L. Nehme, the French Institute of Archaeology in the Near-East (IFAPO/Amman) decided to start a survey project at Jabal ash-Sharāh.¹ In May 1995, J. Besançon working on his geomorphologic study of Petra and its surroundings, pointed out the high density of archaeological remains standing at Jabal ash-Sharāh.² The "Jabal Shara Survey" campaigns, carried out in the spring of 1996 and 1997, intended to characterize the occupation of Petra's hinterland from the Edomite to the late Islamic times. At this time, the investigation excluded the Prehistoric periods, which will hopefully be surveyed in a forthcoming campaign. In addition, this research did not consider the archaeological remains situated along the aṭ-Ṭayyiba - Wādī Mūsā modern road or lying under the modern city of Wādī Mūsā, which were surveyed in the autumn of 1996 by the Wādī Mūsā Water Supply and Wastewater Project.³ This is a preliminary report of the two first seasons.⁴

The Surveyed Area

Dominating Petra from the west, Jabal ash-Sharāh is a relatively high mountainous zone rising to a height of 1784 m (Jabal al-Marājīn). It presents geographic parameters rather different from the natural context in which the Nab-

ataean capital developed. From a climatic point of view, its rainfall and humidity level in winter are higher than in the sandstone area of Petra. Moreover, due to the geomorphology of the limestone levels, springs are numerous, the waters of which was actually collected by a long-distance canalization network to supply the city in the Nabataean period ('Ayn Mūsā, 'Ayn Dībdība, 'Ayn Brāq).⁵

After preliminary bibliographic research — 122 sites registered by previous travelers between ash-Shawbak and aṭ-Ṭayyiba and documented on three 1/25000 maps — it was decided to limit the survey to the natural extent of the Wādī Mūsā drainage basin. This formation opens towards Petra and extends from its northern ridge, north of al-Ḥayy to Umm Ṣawwāna in the south. The eastern limit of the survey is the natural ridge of the ash-Sharāh mountains going towards the steppe of Udhrūḥ. In the west is the natural border between the sandstone and limestone formations. The surveyed area covers approximately 72 km²; its length is about 15 km from north to south and its width varies from 4 to 7 km.

Previous Research

After the visits of pioneers concentrating on the remains of the Nabataean capital, A. Musil and N. Glueck were the early explorers to describe archaeological sites of the hinterland.⁶ Modern scholars have visited the area in the

¹ I am especially grateful to the members of the Department of Antiquities at Petra, S. Farajat, H. Falahat and M. Shaubaki who helped, supported and participated in the project. For the inventory of Petra's monuments, see L. Nehmé, *AJA*, 100, 1996; id., *L'habitat rupestre dans le bassin de Pétra à l'époque nabatéenne*, *SHAJ*, VI, 1997, p. 289-302; id., *l'Espace culturel de Pétra à l'époque nabatéenne*, *Topoi*, 7/2, 1997, p. 1023-1067; id., *New Perspectives for the Study of Petra: the Archaeological Map of the Nabataean Capital*, *Occident & Orient*, June 1997, p. 3.

² J. Besançon, *Archaeology in Jordan*, *AJA*, 100, 1996, p. 510-511; id., *La région de Pétra (Jordanie), Géographie, environnements et potentiels*, (forthcoming).

³ K. 'Amr et al., *Archaeological Studies, Final Report for Wadi Mousa Water Supply and Wastewater Project*, unpublished report at the Department of Antiquities Registration Centre, December 1996; id.,

ADAJ, 42, 1998.

⁴ For preliminary accounts on this project, see L. Tholbecq, *The Gebel Shara Survey: A new Approach to Petra's hinterland*, *Occident & Orient*, June 1997, p. 21; id., *Archaeology in Jordan*, *AJA*, 101/3, 1997, p. 502.

⁵ Z. al-Muheisen and D. Tarrier, *Ressources naturelles et occupation du site de Pétra*, *SHAJ*, VI, 1997, p. 146-148.

⁶ Outside the actual limits of the municipality of Wādī Mūsā, 13 sites of the area covered by the survey were described by N. Glueck and his predecessors. The names are followed by the "Jabal Shara Survey" site number (JSS#), followed by the JADIS registration number (J.), its equivalence in N. Glueck, *Explorations in Eastern Palestine*, *AASOR*, XV, 1934-1935, 1935 (Gl.), and its eventual reference in A. Musil, *Arabia Petraea, II, Edom*. *Topographischer Reisbericht*, Vienna, 1908 (ME) and R. Brünnow and A. von Domaszewski, *Die Provincia Arabia*, I, Strasbourg, 1904 (PA): Kh. Dībdībah (Bedebdeh) =

last twenty years but no systematic survey was ever conducted in the region. For example, no survey around Ṭawilān was undertaken during the British excavation of this site. Later on, the steppe around Udruh, immediately east of the Wādī Mūsā basin, was surveyed by A. Killick. In general, the area seems largely interpreted to fit military purposes (protective long walls, watch-towers, road network, etc.).⁷ S. Hart surveyed a large part of the ash-Sharāh mountains and excavated several Edomite sites north and south of the Wādī Mūsā basin. Based on surface pottery collections, he first concluded that the occupation of the Edomite plateau was not continuous. For instance, after intensive occupation in the Edomite and Nabataean periods, it seems to have declined around the second century AD and later, except along the *Via Nova Traiana*. This was tentatively explained through the nomadic lifestyle of the inhabitants, the low agricultural potential of the area, the possible fluctuations of the water table after it was pumped out by the Nabataeans, and external political events.⁸ After S. T. Parker's study of the defensive organization of the Province, the growing occupation of the steppe area during the Byzantine periods was emphasized.⁹ D. Graf surveyed the Ḥismā region to characterize its occupation during the Classical periods.¹⁰ Recently, D. Graf studied the road network around Petra in order to establish the directions of the *Via Nova Traiana*.¹¹ After a general overview, he concluded: "Agricultural communities appear to have existed simultaneously with nomadic pastoralist communities from the beginning of the Nabataean state. ...Roman settlements are less extensive and confined mostly to the path of the *Via Nova Traiana*. ...It is not until the Byzantine era that the area east of the *Via Nova Traiana* was extensively cultivated again, as reflected in the substantial signs of agricultural activity all over the plateau".¹²

Aim

Based on those conclusions, our project intended first of all to answer a simple question: according to the relatively poor agricultural resources of Petra and the importance of

archaeological remains visible in the ash-Sharāh mountains, is it possible to determine whether this area was used to supply, at least in the form of a complementary income, the inhabitants of the city? There is no doubt that the ash-Sharāh mountains contributed to the local economy; however, it was important to determine in which manner. Secondly, Jabal ash-Sharāh provides a natural barrier along the entire eastern approach of the Nabataean capital. Was it possible to trace the different thoroughfares to the capital through the village of Gaia (Wādī Mūsā) or other east-west paths? Does the traditional image of caravans travelling to Petra fit with the natural environment? Thirdly, after the establishment of the chronology of occupation, can we perhaps determine the balance between agricultural activities and the potential defensive aspects of the area. As mentioned before, the military aspect could have been over-estimated by past researchers and the role of a local economy neglected.

Method

This work was based on a preliminary investigation of aerial photographs dating from the 1950s, 1970s and 1990s. Using this information, 160 sites were visited, described, sherded and if necessary sketched. Being alone, a systematic survey proved difficult but, at least, the database can now be updated by new discoveries. Therefore, the conclusions presented here must be considered as a first attempt to give a preliminary analysis about the area. As A. Killick underlined, it is critical to establish a rigid typology when several settlements have several functions (for instance, both agricultural and defensive).

The Mapping Aspect

One of the priorities of this project was to create a database for an archaeological map of the limestone area overlooking Petra. These maps are essential tools to study the History and Archaeology of Jordan, especially in areas of intense urban and agricultural development such as the district of Wādī Mūsā (FIG. 1).

A 1/15000 map has been produced indicating the main

= JSS 6, J. 1997.015, Gl. 133, ME, II, 2, p. 235, PA, 1, p. 409-415; al-Mikhwān, JSS 13, J. 2097.015, Gl. 149; Kh. aṣ-Ṣafa, JSS 14, J. 2097.014, Gl. 150; Kh. Sārah, JSS 95, J. 1996.008, Gl. 111; Kh. Daḥāḥah, JSS 132, J. 1996.037, Gl. 113, ME, p. 134, E. H. Palmer, (1871) called it "D'haah"; 'Ayn Hijin, JSS 135, J. 1996.027, Gl. 112; Kh. al-Minya, JSS 134, Gl. 114; Kh. al-Far', JSS 114, Gl. 118, ME, p. 221, 234; Kh. Umm Lawzah, JSS 7?, Gl. 173, ME, II, 1, p. 328. Springs: 'Ayn al-Qrayah, Gl. 131, 'Ayn al-Ḥayy, Gl. 151, ME, II, 1, p. 43, 'Ayn al-'Aliyya, Gl. 115, 'Ayn al-Far', Gl. 117; also Kh. Suwākh, Gl. 116 not identified.

⁷ For preliminary results, see A. Killick, Udruh and the Trade Route through Southern Jordan, *SHAJ*, III, 1987, p. 173-179; id., The Udruh Region, in A. Killick (ed.), *Udruh, Caravan City and Desert Oasis - A guide to Udruh and its surroundings*, Hampshire, 1987, p. 26-35.

⁸ S. Hart and R. K. Falkner, Preliminary Report on a Survey in Edom, 1984, *ADAJ*, 29, 1985, p. 255-278; S. Hart, Some Preliminary

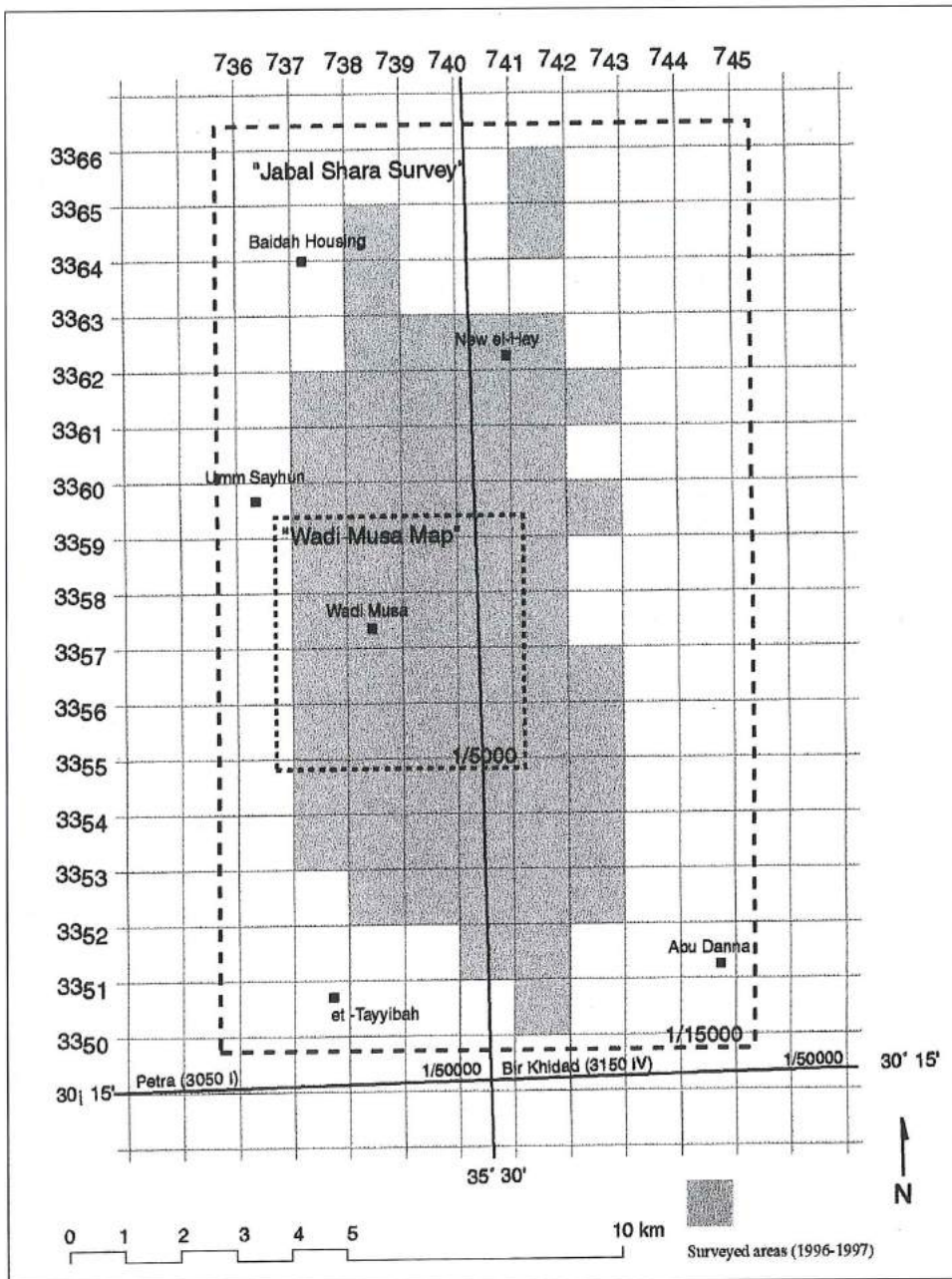
thoughts on Settlement in Southern Edom, *Levant*, 18, 1986, p. 51-58; id., The Edom Survey Project 1984-1985: The Iron Age, *SHAJ*, III, 1987, p. 287-290.

⁹ S. T. Parker, *Rome and the Saracens*.

¹⁰ D. Graf, Nabataean Settlements and Roman Occupation in Arabia Petraea, *SHAJ*, IV, 1992, p. 253-260; id., The Nabataeans and the Hisma, *In the Footsteps of Glueck and Beyond, The Word of the Lord Shall Go Forth Essays in Honor of David Noel Freedman in Celebration of his Sixtieth Birthday*, eds. C. Meyers and M. O'Connor, Philadelphia, p. 647-664.

¹¹ D. Graf, The *Via Nova Traiana* in Arabia Petraea, *JRA*, Suppl. Series 14, *The Roman and Byzantine East*, Ann Arbor, 1995, p. 241-267.

¹² D. Graf, *op. cit.*, 1992, p. 260; see also Z. Fiema, *Economics, Administration and Demography of Late Roman and Byzantine Southern Transjordan*, Ph. D. Dissertation, University of Utah, 1991.



1. Map showing the extension of the "Jabal Shara Survey" (1996-1997).

roads, the major springs, and the 160 newly surveyed archaeological sites.¹³ The map also indicates local toponyms newly surveyed by H. A. Falahat.¹⁴ The collection of more than 250 toponyms and their location on the map was indeed a substantial effort after it was dis-

covered that several toponyms mentioned in the Byzantine Petra scrolls survived through ages till today in the memory of the inhabitants of Wādi Mūsā.¹⁵ The concentration of the remains inside the limits of the municipality of Wādi Mūsā was such that it was decided to

¹³ This map is based on the 1/50000 maps available for the area (Bir Khidad, 3150, IV - Petra, 3050, I). After enlargement of the original map, the contours lines have been redrawn (L. Tholbecq) and computerized (Helene David). Several new roads were added and drawn with the help of R. Saupin (topographer). Springs and sites have been noted. Therefore, the accuracy of this map is limited but will satisfy the need of the archaeologist and the historian alike.

¹⁴ This enquiry completed the first attempt of mapping the local toponyms which occurred in the photo-plan realized between 1974 and 1977 by the French Geographical Institute (IGN/Paris). The toponyms mentioned on those photographs were based on the

work of T. Canaan (*JPOS*, IX, 1929, p. 136-218 and X, 1930, p. 178-180) and a new field inquiry done by G. Charles, J. T. Milik, M. Gory, J. Starcky and F. Zayadine in the mid 70s; see M. Gory, *Travaux effectués par l'Institut Géographique National de France*, *ADAJ*, 21, 1976, p. 79-86.

¹⁵ Petra Scroll inv.#10 and 98 contains toponyms of which about a half dozen can be related to modern ones with certainty (information kindly given by R. Daniel); for a preliminary account, see M. Kaimio and L. Koenen, *Reports on Decipherment of Petra Papyri* (1996/97), *ADAJ*, 41, 1997, p. 459-462.

produce a second 1/5000 map, based on the cadastral plan.¹⁶

The Occupation of Jabal ash-Sharāh: A First Approach

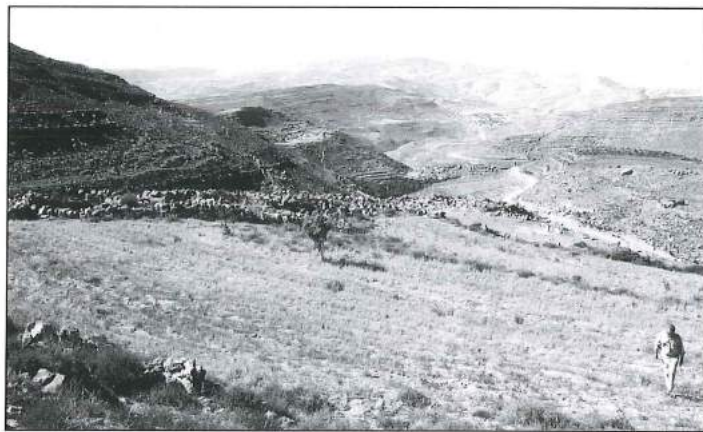
This paper will adopt two different approaches of the area: first, we will try to establish the main occupational chronological sequences.¹⁷ Within those periods, the archaeological evidence will be analyzed in terms of regional access routes through Jabal ash-Sharāh, regional defense, and the settlement and economic background.

Iron Age

Besides the main research of M. Lindner and his team in the sandstone area and on the western escarpments of ash-Sharāh,¹⁸ the Iron Age is represented by the well-known site of Ṭawilān.¹⁹ South of Wādī Mūsā, Khirbat Daḥāḥa (JSS 132; FIG. 2) is a major site already visited by early travellers, which was occupied from the Edomite to the early Islamic period. Associated with an important spring, it was situated on a main southern access to the Wādī Mūsā basin. Another major Iron Age site is Khirbat al-Qarāra/al-Muzayr'a (JSS 74; FIG. 3), on the left side of Wādī al-Qarāra, north of Wādī Mūsā. It shows exceptionally well-preserved terracing walls and structures. Its location indicates that perhaps the site was at some point connected with Ṭawilān. A third important Iron Age lies on the northern limit of the survey area, at the top of a hill along the Wādī Mūsā - ash-Shawbak road, above Wādī 'Anabah (JSS 001). In fact, less than 10 % of the sites investigated have Iron Age pottery (13 sites). The other Iron Age evidence is situated on the western edge of the plateau but, at first sight, the remains are not very impressive. At least, in terms of density, the Iron Age occupation of the area does not seem extremely different from the one evidenced earlier by S. Hart north and south of the Wādī Mūsā basin. It is worthwhile to mention that no painted Iron Age pottery was found in the survey.

Hellenistic Period

Second and first century BC pottery was found on less than 5 % of the sites. For this period, one site proved to be rather interesting (JSS 117). It is situated on the foothill of Sha'bat adh-Dhab', north of the entrance pass of Wādī al-



2. Khirbat Daḥāḥa (JSS 132), from the south.



3. Structures and terraces at Khirbat al-Qarāra/al-Muzayr'a (JSS 74).

Far'. Except for Iron Age and one Nabataean sherd, all of the pottery dates from the second to the first century BC. The function and limits of the site are not clear, but it is situated on a natural route reaching Wādī Mūsā from the south-east, closed by several strongholds (Khirbat al-Far', JSS 114 and JSS 115). Site JSS 115, just to the south, shows also a large range of Hellenistic sherds. The sporadic presence of Hellenistic pottery on Jabal ash-Sharāh indicates that the mountains started to be resettled in the second and first centuries BC.²⁰

Nabataean and Roman Periods

Not surprisingly, the majority of sites (more than 55%) contained Nabataean pottery (first to early second century

¹⁶ This map does not show the contour lines but the modern road network of the city. It is a pleasure to thank here Kamel Mahadin (then Director-General of the Petra Region Council) and the Council department who allowed me access to the cadastral maps of the district of Wādī Mūsā. I am especially grateful to K. 'Amr who did not count her time when helping me in making this map.

¹⁷ K. 'Amr (Department of Antiquities) gave a first preliminary reading of the pottery in the spring of 1998. It is important to note that, at the 160 surveyed sites, nearly a quarter had no sherd or no good secure ceramic diagnostics. Nevertheless, if the absence of sherds does not signify a hiatus, its presence must be considered as a period indicator. On the methodological problems of the sampling

technique, see T. P. Harrison, *Intrasite Spatial Analysis and the Settlement History of Madaba*, *SHAJ*, VI, p. 137 and references.

¹⁸ M. Lindner (*et al.*), *An Edomite Fortress and Late Islamic Village near Petra (Jordan): Khirbat al-Mu'allaq*, *ADAJ*, 40, 1996, p. 111-135.

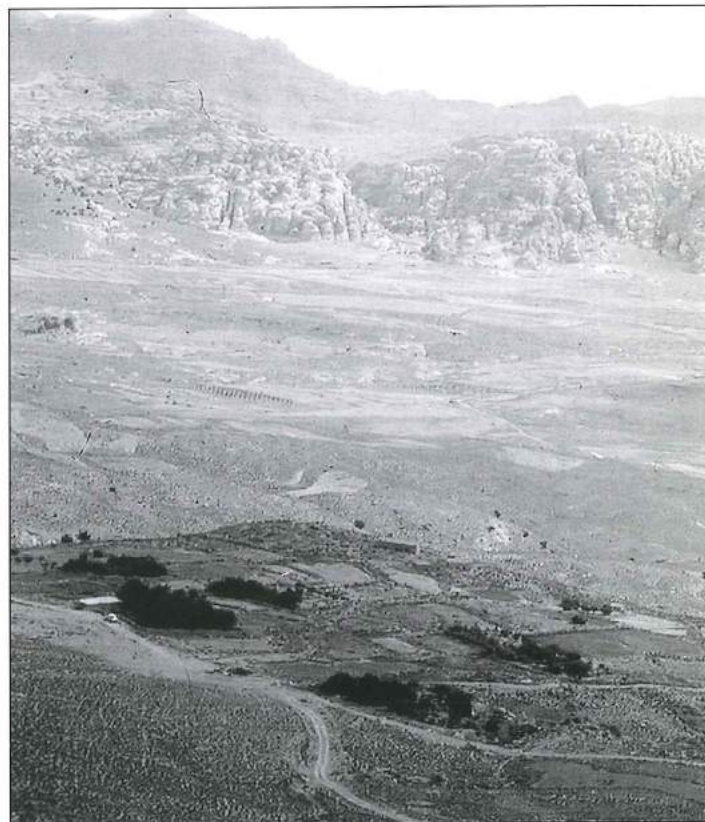
¹⁹ P. Bienkowski, *BAMA*.

²⁰ For other Hellenistic finds in the area, see D. Graf, *op. cit.*, 1992, p. 255, footnote 18; the nomadic or more sporadic occupation of the area is not evidenced through archaeology, but this occupation probably started earlier and must have completed the image of the built settlements on later periods also.

AD) in surface collections. At this time, Jabal ash-Sharāh was intensively settled. Of course, without excavation, it would be unwise to define all the settlements. Nevertheless, several conclusions can be presented here. Apparently, the major natural access routes to the Jabal were settled. Strategic areas were controlled from the heights (watch-towers, e.g. JSS 12 or JSS 142) and the *defilés* secured by small outposts (JSS 48, JSS 64). Those sites dominate large areas around the ridge of the basin (above Bayḍa plain or the eastern steppe). This is particularly evident in the eastern limit of the Wādī Mūsā basin which is protected by a series of sites, small forts and watch-towers, connected with long walls running along the ridge of the basin (JSS 85, JSS 122, JSS 123, JSS 143). In addition, the main access routes from the steppe were at some point controlled (e.g. JSS 4, Minat al-Ḥṣān, on Wādī 'Arja, connected to Udhruḥ, JSS 32, on the way to Dibdibah) as were the passes entering the basin (e.g. Raqabat Umm Qarramah, JSS 18 or Khirbat Kafr Aṣḥam, JSS 158). Of course, the date of those structures can hardly be based on surface collected sherds. Whether Jabal ash-Sharāh was the focal point of arrival of traditional trade routes from the eastern steppe remains a hypothesis not yet proved through archaeology. It is certain that the Jabal ash-Sharāh region could have provided the needed supplies for the caravans after their crossing of the Ḥismā or the plateau. But it would be worthwhile to examine if at least part of the commercial links coming from Ḥismā did not cross the escarpments from al-Ḥumayma directly to Wādī 'Arabah. Nevertheless, evidence for the as-Saha route was provided by two sites of Jabal ash-Sharāh (JSS 92 and JSS 93) that were interpreted as animal enclosures associated with a big quadrangular structure (JSS 94). That could have been the last station on the way to Wādī Mūsā (through Wādī 'Uqbat Ḥammād) with all the area east of it providing the necessary grazing. There is no need to discuss the road network, because this question has been adequately addressed in the past, but one may add two elements: First, there is an important north-south road along the western edge of the plateau, parallel to the *Via Nova Traiana*. There, it is possible to recognize the traditional network connecting the various cities of the plateau during the Iron Age period. Secondly, and more important, Jabal ash-Sharāh was crossed by at least one east-west axis connecting Bayḍa to the steppe and avoiding Wādī Mūsā and Petra itself through the area of Mikhwān and the well-known settlement of 'Ayn Dib-

dibah (FIG. 4).

On the other hand, as mentioned above, the climate of the Jabal and its springs created a favorable environment for dry cultivations such as cereals. It is known that several springs from the western slope of Jabal ash-Sharāh provided water to the city of Petra through canalization systems but other springs attracted settlements (such as al-Mikhwān, al-Ḥayy, Umm Ṣawwāna). In the vicinity of the upper ridges (over 1600 m high), which may have been forested in antiquity,²¹ the zone must have been propitious to pastoralism. On the other hand, at the natural limit between sandstone and limestone, wine press remains have been found on the western slope of the ash-Sharāh escarpments (e.g. JSS 102). They are most probably associated with the numerous presses found for instance on the Bayḍa plain.²² This could support the idea of vegetation zones based on the elevation of Jabal ash-Sharāh. Indeed, in the intermediate zone, the traces of ancient agricultural activities are numerous. As a common feature with an-Naqab or the surroundings of Petra itself,



4. Khirbat Dibdibah, from the north.

²¹ I first thought that it could be what Juvenal referred to when he mentioned the "Nabataean forests". But François Carré suggests that "saltus" could also mean a gorge or a *défilé* (pers. com.). The reference to the "Nabataean gorges" could fit with the geographical context and the image a Roman writer of the first century could have of Petra (... *latus nisi sustinet orbes / grande ebur et magno sublimis pardus hiatu / dentibus ex illis quos mittit porta*

Syenes / et Mauri celeres et Mauro obscurior Indus / et quos deposuit Nabataeo belua saltu / iam nimios capitique graues. - Juv., Satura XI, 122-127).

²² K. 'Amr *et al.*, *op. cit.*, 1998; Z. al-Muheisen, *Maîtrise de l'eau et agriculture en Nabatène: l'exemple de Pétra*, *Aram*, 2:1, 1990, p. 205-220, esp. pl. X, XII and XIII.



5. Khirbat al-Baq'a (JSS 90), from the southwest.



6. Bir Sārah (JSS 95), structure with associated cistern.



7. Cemetery to the northeast of 'Ayn Mūsā (JSS 159).

several upper valleys are cultivated and blocked by transversal retaining walls. It is tempting to see in those terraces typical Nabataean features (even though that technique could have survived afterwards). Connected to those upper valleys, there are quite a number of single or multiple structures, frequently connected with natural caves or associated with cisterns. They can probably be interpreted as farms or agricultural units (e.g. Khirbat Umm Qarramah JSS 25, Khirbat al-Baq'a JSS 90, FIG. 5, and JSS 109). Other cisterns of various shapes, and associated with structures are plentiful. Built cisterns are rare, outside of the well-known but poorly documented Bir Sārah (JSS 95, FIG. 6), but other examples are probably concealed by the ruins. Neither complex canalization systems like the ones known in the sandstone area nor any *qanawāt* of which examples exist in the eastern steppe have been found. Terraces on the slopes of the wadis are common and show different patterns. The permanent presence of stone stacks in the landscape is an omnipresent testimony to the agricultural activities of generations of cultivators. Sometimes, long walls are built on the tops of the hills of which the slopes are divided in long parallel parcels. The study of several terraced areas has been undertaken based on aerial photographs, but those traces are difficult to date. A close field examination, an enquiry of the modern interventions in the landscape and some archaeological probes are the necessary complements to such a study.

The quantity of Roman pottery (second and third century AD) on several of those sites indicates that the annexation did not affect local activities and economy. On the contrary, the presence of Roman pottery on 30 % of the surveyed sites could indicate that the apparent slow-down of the international trade of Petra was balanced by the development of local or inter-regional trade. At this level of research, it is hazardous to establish if there was a

decrease in the occupation of the area in the third or late third century.²³ Part of the *Via Nova Traiana* was surveyed, in the area of al-Ḥayy; with several preserved connected structures along its sides. JSS 24 was a large enclosure connected to the road but unfortunately nowadays destroyed by the building of the modern settlement of new al-Ḥayy. JSS 53 is an important tie where the *Via Nova* crosses several east-west accesses to Gaia. Valuable information could be provided by the excavation of the cemeteries evidenced around Wādī Mūsā; at least one necropolis close to 'Ayn Mūsā (JSS 159, FIG. 7) was exposed by robbers.²⁴ Another cemetery of Wādī Mūsā (at an-Naqla) was recently excavated by the Department of Antiquities. Among others, a site also situated in the heights above 'Ayn Mūsā could also have been a cemetery (JSS 80). Those various sites could be the different necropolises of the nearby village of Gaia and its suburbs.

Byzantine and Islamic Periods

Compared to what we know through excavations in the city of Petra itself and the information given by the Petra

²³ Such a generalization must be based on excavations.

²⁴ For a similar feature in the area, see H. Kurdi, *A New Nabataean*

Tomb at Sadagha, *ADAJ*, 17, 1972, p. 85-87, and p. 163-166.

scrolls, the evidence of Byzantine occupation of Jabal ash-Sharāh is limited. For the Early Byzantine period (fourth - fifth centuries AD), around 10 % of the sites are represented. The Late Byzantine occupation (sixth - seventh centuries AD) is represented by less than 5 % of the sites. Several hamlets were still occupied during those periods (JSS 128, with numerous associated cisterns). As a matter of fact, the late occupation of the area could be connected to the traditional route through Transjordan along the ancient *Via Nova*. More conclusively, the concentration of Byzantine sites seems at first sight slightly different from that of the eastern zone around Udhruh which was apparently more intensively settled during these periods than Jabal ash-Sharāh itself.

Concerning the Islamic periods, according to this first surface collection of sherds, there seems to be a gap in the occupation of the *Jabal* from the eighth century AD to the Ottoman period. For the Ayyubid and Mamluk periods, it is remarkable that the handmade geometrically painted pottery is totally absent, unlike at the Crusader settlements of Petra, the villages of Wādī Mūsā or from other sites in the sandstone area. The Ottoman period is represented by 10 % of the sites, in addition to the recently probed site of Khirbat al-Mu'allaq (cf. *supra*).

Preliminary Conclusions

In 1967, J. Starcky suggested that Gaia could have constituted the original Nabataean settlement prior to Petra itself but this idea is not supported by recent research.²⁵ Inscriptions and archaeological evidence have proven the existence of one or several villages connected to different springs. At "Eljī"/Iljī, a temple to Baalshamin dedicated in AD 25, domestic buildings and necropoloi have been discovered. The 1996 rescue excavation of the Department of Antiquities in Iljī revealed occupational levels from the first century BC to the late Byzantine period and, after a gap of few centuries, occupations in the Ayyubid, Mamluk and Ottoman periods.²⁶ The different kilns excavated at az-Zurrāba are dated from the first to the sixth centuries AD.²⁷ Finally, the 1997-1998 excavations at Khirbat an-Nawāfla has yielded exceptional continuous data from the first century BC to the Ottoman period with only two small gaps in the late third century AD and sometime during the late Islamic period. This is especially important for the Early Islamic periods, which have not been adequately studied before in the area.²⁸ That the Wādī Mūsā basin was occupied before the circus of Petra itself is therefore

not established. But a new image of the relation between the two areas can be proposed: they were probably settled at the same time but their roles were different.

The high concentration of sites in the Jabal ash-Sharāh region has often been explained by the presence of the *Via Nova Traiana*. This first conclusion must be balanced by a characterization of the sites in terms of both, chronology and function. Several valleys are the natural access through Jabal ash-Sharāh to Wādī Mūsā/Gaia. The natural parameters and geographical position of the Wādī Mūsā basin were therefore ideal for interregional activities, at least during the Classical periods. While it is obvious that the region was intensively occupied in the Nabataeo-Roman period, it becomes clear through this investigation that its natural resources have been exploited and contributed to supply the inhabitants of Petra, and other cultivable areas such as Bayḍā.

On the other hand, the natural resources of the area made the Wādī Mūsā basin an ideal area for the processing of goods or industrial/artisanal productions. For example, the continuing production of ceramics during the Nabataean and Roman periods at az-Zurrāba were encouraged by the presence of clay sources ('Ayn aṭ-Ṭinah or 'Ayn Amūn), water and fuel for the kilns. Other inter-related production activities must have existed in the area and stimulated the local economy. It could be suggested that the inner part of the basin could have been one of the production zones where goods were redistributed, giving Petra its economic pulse. Its surroundings could have provided the necessary supplies for both, local consumers and international traders. After the end of international commerce and the abandonment of the ancient city itself, the Jabal ash-Sharāh area was rich enough to supply several communities which survived in the Wādī Mūsā basin for centuries. We can therefore suggest that, in the Nabataean period, the caravans coming from the Far East stopped at Jabal ash-Sharāh for rest, while the goods were transformed, redistributed and transferred through Petra to reach the western emporia of the Nabataeans. But once again, the evidence from survey investigations cannot be used as conclusive evidence of occupation without archaeological excavations of these areas. This is an attempt to establish an image suggested by a preliminary interpretation of both natural and archaeological surveyed sites. Excavation will hopefully provide new evidence and keys for interpreting of the history of Petra and its surroundings through the ages.

²⁵ J. Starcky, Pétra et la Nabatène, *SDB*, VII, 1967, col. 987.

²⁶ K. 'Amr *et al.*, A Preliminary Note on the Wādī Mūsā Salvage Excavation 1996, *ADAJ*, 41, 1997, p. 469-473; *AJA*, 101, 1997, p. 515-516; on the archaeological evidence of Iljī / Wādī Mūsā, see R. Brünnow and A. von Domaszewski, *op. cit.*, p. 429-430; F. Zayadine, Recent Excavations and Restorations of the Department of Antiquities (1979-1980), *ADAJ*, 25, 1981, p. 350 and p. 459; D. Tarrier, Baalshamin dans le monde Nabatéen, à propos de dé-

couvertes récentes, *Aram* 2:1, 1990, p. 197-203.

²⁷ F. Zayadine, Recent Excavations at Petra (1979-1981), *ADAJ*, 26, 1982, p. 380-393; D. Homès-Fredericq and H. J. Franken, *Argile, Source de Vie, Sept millénaires de céramique en Jordanie*, Brussels, 1985, p. 186-190 and Pl. XIV; K. 'Amr, Preliminary Report on the 1991 Season at Zurrabah, *ADAJ*, 35, 1991, p. 313-323.

²⁸ Personal communication with K. 'Amr.