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Madian revealed? Assessing the history and archaeology of the oasis of al-Bad‘ in northwestern Arabia

Madian (or *Midian/Madyan*)¹ is entwined with the biblical figure of Moses and the history of the Hebrews and northwestern Arabia.² The people (or country) of Madian, traditionally located near the Gulf of ‘Aqaba south of Canaan, is mentioned nearly 60 times in the Bible, while references to them are found ten times in the Qur’ān. Two of the most significant episodes of the Old Testament are the reception of Moses by the prophet Jethro³ in Madian after his flight from Egypt,⁴ and later the offering of a sacrifice to God on Mount Sinai, near Madian, during Exodus.⁵ Madian is thus linked to the origins of Israel and the many theories associated with it.⁶ Conversely, in the Qur’ān the people of Madian are accused of idolatry⁷ and dishonest business practices by Shu‘ayb, a prophet sent by God;⁸ the people subsequently die as a result of God’s wrath⁹ and a divine earthquake.¹⁰ Madian is therefore of

importance for the faithful of the three religions of the Book. The aforementioned episodes in Madian have been a recurring theme in medieval Western pictorial art through to modern genre films.

The location of the Madian region, originally thought to have been revealed through examination of the route taken by the pre-Israelite exiles to Mount Sinai, has sparked intense debate since the 19th century. Although the boundaries of the land of Madian are still very vague, its location south of Edom and in northwestern Arabia has gained growing consensus among archaeologists and historians, unlike that of Sinai.¹¹ One of the main problems with its identification lies in the equivocal nature and use of the entity “Madian.” It is employed alternately as an ethnonym and as a regional toponym in biblical texts and traditions,¹² as well as functioning as the toponym of a city (and sometimes a region) in Greek and Islamic sources.¹³ Even today, like the travellers of the 19th and 20th centuries, many authors use the term Madian to refer to the strip of land (sometimes referred to as the “Peninsula”)¹⁴ located between ‘Aqaba/Ayla, Tabuk and Sharmā, and which extends as far as Ras Sheikh Ahmed.¹⁵

1. We will mainly use the most common form of *Madian* here, whereas *Madyan* corresponds to the Arabic transcription; *Midian* (or *Midyan*), which is the Hebrew transcription, will not be used in this article. Otherwise, we only use the term “Midianite” for the so-called “Midianite pottery,” like all previous studies on this subject.
2. RÖMER 2015, pp. 51-70, 73; ROBIN & GHABBĀN 2017; TEBES 2020.
3. Also named Reuel and Hobab the Kenite. On this point, see ALBRIGHT 1963; TEBES 2020: “Midian and the origins of Yaweh.”
4. Exodus 2.15-22.
5. Exodus 18.1-27.
6. See LEVY *et al.* (eds.) 2015, notably FAUST 2015, MULLINS 2015.
7. According to BEESTON 1968, there is a possible link between the Madianites of the Qur’ān and the “people of the Thicket” who allegedly worshipped the Nabataean deity Dushara.
8. Associated with Jethro in the Arab-Islamic tradition; see FIRESTONE 2003, p. 390.
9. Coran 11.84-97; 22.42-45; 29.36-37; FIRESTONE 2003.
10. A different version in which God stirs up a scorching wind against the inhabitants of Madian is found notably in Ḥimyarī,

Geography, p. 676 § 25.33 (14th century) and Maqrīzī (1895), p. 538 (15th century).

11. BONACCORSI 1904; MUSIL 1926, Appendix IX, p. 285-287; PHILBY 1957; HASSON 1995, pp. 13-15, n. 41; KERKESLAGER 1998; POTTS 2010, pp. 72-74; RÖMER 2015, p. 55; PAYNE 1983, p. 163, suggests that the Madianites were groups of people living around the land of Canaan before being driven back to Northwest Arabia.
12. The term is, however, absent from other contemporaneous literary sources (in particular Neo-Assyrian annals), which makes Jérôme Norris believe that Madian does not denote a tribe, but is instead possibly an eponym (thank to J. N. for this comment).
13. DUMBRELL 1975; ROBIN & GHABBĀN 2017.
14. E.g. JADO *et al.* 1990; WYN HUGHES *et al.* 1999.
15. BEKE 1878; BURTON 1879a; PHILBY 1957.

The location of the Madian city—if indeed there is such an entity—is therefore an enigma. While some scholars consider placing it north of the Hijāz,¹⁶ there is a general scientific consensus that Madian is the oasis of al-Bad‘¹⁷ (sometimes known as al-Bid‘¹⁸) in the Tabuk province.¹⁹

Today, al-Bad‘²⁰ (Figure 1) is often identified as the city of “Madyan” in its Arabic form مدين.²¹ Local traditions support this association and connect several regional sites with biblical myths; for example, the well of Moses is identified with the Bi‘r Sa‘idni at al-Bad‘.²² The magnificent natural parade of Tayyib al-Isim²³ on the coast of the Gulf of ‘Aqaba is further believed to be where the Hebrews arrived after crossing the Red Sea. However, the “Spring of Moses” (‘Ayn Mūsā)²⁴ and what Beke identifies as the “Mosque of Moses” in Madian are in the port of Maqnā, west of al-Bad‘.²⁵ Jabal Lawz and the al-Badr/Hallat al-Badr volcano²⁶ are also often considered to be

the actual locations for Mount Sinai and Horeb, yet the mountain of the Bible is traditionally placed in Sinai at Jabal Mūsā not far from the monastery of Saint Catherine.

Far from constituting evidence for identification, these somewhat “folkloristic” names were nevertheless spawned by a long tradition of locating Madian in the al-Bad‘ region.²⁷ The correspondence between the Islamic Madyan and al-Bad‘ is based on a reading of Arab-Islamic sources that leaves little doubt as to its location (see § 5).

A review of the texts and data today, indicates the existence of copious literature on Madian and a growing body of archaeological and geographical information on al-Bad‘ itself in recent years.²⁸ After a long period of neglect, interest in this area has been revived by the emergence of local tourism.²⁹ Like several other gigantic projects that are part of ultra-modern developments by the Saudi authorities in western Arabia, the Neom project³⁰ in the “Madian” region, centred around the city of Sharmā to the north of the Red Sea, will fully reshape the ancient landscape and attract thousands of tourists.³¹

In the following pages, the multidisciplinary and diachronic approach—according to major periods of the history of Madian and al-Bad‘, beginning with the first human settlements at the oasis up to and including modern times—is based on the results of a Saudi-French mission that has been underway since 2017.³² This allows connecting factual data from primary observations, which are difficult to interpret in historical terms, and evidence found in literary sources which are often equally troublesome to date and validate. The object of this article is to answer the following question: in the absence of a mention of Madian found *in situ*, what are the archaeological traces (if any?) supporting or refuting the link between Madian and the oasis of al-Bad‘?

16. Other proposed locations: Al-Ḍuba (WISSMAN 1970, pp. 525-526); al-Qurayya (GHAZZI 2010, p. 213); Mudayna sites in Moab (BEN DAVID 2017) or Kafīr Manda near Tiberias (see FIRESTONE 2003, p. 390).
17. Or the port of Maqnā, after BEKE 1878, pp. 343, 351, and BURTON 1879a.
18. 19th-century travellers and even 20th-century scholars often referred to al-Bad‘ by the toponym of Mughayr Shu‘ayb, the “caves of Shu‘ayb” (e.g. BOWERSOCK 1996, p. 558; BAUZOU 2016, p. 87), which refers directly to the prophet of the Qur‘ān. The toponym actually designates only one area within the oasis and is therefore unsuitable for describing the oasis as a whole. This term appears in the 13th century according to A. al-Ghabbān, who provides a complete history of it (GHABBĀN 2011, pp. 110-111).
19. Particularly, BURTON 1879a, pp. 117-125; BONACCORSI 1904, p. 533; MUSIL 1926, Appendix IX, pp. 278 ff.; PHILBY 1957, p. 211; BUHL & BOSWORTH 1986, p. 1146; KNAUF 1988, p. 5; KERKESLAGER 1998, pp. 147, 156-157; RÖMER 2015, p. 55.
20. The meaning and origin of the toponym al-Bad‘ remain uncertain. According to BURTON 1879a, pp. 86, 100, a spring located near the Jabal Ṣafra bore this name, which would in turn have given its name to the wadi and the oasis, after the drying up of the Bi‘r Sa‘idni; this is sometimes confirmed by the current inhabitants of the oasis. Al-Bad‘ thus means the appearance of water (in this case). For RÜPPEL 1829, p. 187, the name “Beden” is related to an ibex.
21. E.g. MUSIL 1926, pp. 109, 278-279. See §.
22. Idriṣī, *Geography*, p. 333. “On the banks of the Colzoum Sea is the city of Midian, larger than Tabuk and the well of Moses where he watered the flock of Jethro [...] They say that this well is (now) dry, and that we have raised above a construction.” PHILBY 1957, p. 215.
23. INGRAHAM *et al.* 1981, site 200-81.
24. PHILBY 1957, p. 227: “Ain al Tabbākha [...] which local legend connects with the story of Moses.” See also, ALSALEH 2017.
25. BEKE 1878, pp. 348-350.
26. BEKE 1878, p. 436.

27. MUSIL 1926, pp. 278-282; ROBIN & GHABBĀN 2017.
28. We also refer to the work of our Polish and Saudi colleagues in ‘Aynuna, namely excavations led by Michał Gawlikowski, Karol Juchniewicz and Abdullah al-Zahrani (e.g. JUCHNIEWICZ 2017, GAWLIKOWSKI *et al.* 2021).
29. Notably, GHABBĀN *et al.* (dir.) 2010.
30. Available at: <https://www.neom.com/> (accessed 14 June 2021).
31. But also certainly the “adepts” of the location of the “real” Mount Sinai in Arabia, based on the proposals of BEKE 1878 and MUSIL 1926, pp. 296-298, notably KOENIG 1964 and 1971; DUNN 2014. For a complete bibliography on this subject, see TEBES 2020. We also refer to ANSARY *et al.* 2002, pp. 83-86.
32. Under the direction of G. Charloix, S. A. Sahlah and assisted by W. A. Badaiwi (CHARLOUX *et al.* 2021a-c).



Figure 1 - Nabataean rock-cut tombs at al-Bad' oasis (© BDAP al-Bad' Archaeological Project, CNRS, H. Raguet HRD5244).

■ 1/ THE OASIS OF AL-BAD'

Geographical setting

Situated east of the Gulf of 'Aqaba in a seismic region,³³ the oasis of al-Bad' (28° 29' 34" N; 35° 00' 26" E) occupies an area about 7 km long with variable widths estimated minimally between 0.5 km and 2 km maximally from north to south. Its elongated shape is attributed to its location at the outlet of a transverse valley (i.e., a gorge) of the Wādī 'Afāl, at the apex of a vast, triangular-shaped sedimentary plain known as the Lisan Basin (or the "Wādī 'Afāl triangle" composed of Quaternary deposits: alluvium, gravels, and mixed sand and gypsum) (Figure 2).³⁴ This broad wadi, at least 50 km is oriented north-south,³⁵ deeply transects the northern part of the Arabian Shield (Hisma Plateau), tracing a furrow across high mountains (notably the Jabal al-Lawz^{2,7} 85 m). In

the past the Wādī 'Afāl, which runs parallel to the 'Aqaba Gulf, provided the most direct access to Jordan-Palestine from the eastern Red Sea coast (in particular from the harbours of 'Aynuna³⁶ and Sharmā). The oasis controlled this pathway in antiquity, which explains its important role in the region's development.³⁷ Other small east to west run-offs tributaries feeding the Wādī 'Afāl also created natural communication routes. For instance, the Wādī al-Ḥamda provided direct access from al-Bad' to the harbour of Maqnā on the Gulf of 'Aqaba.

The oasis of al-Bad' is located in the top part of a transverse valley formed by Wādī 'Afāl; the system of faults ('Afāl west fault) that created this valley contributed

33. ELAWADI *et al.* 2013; FNAIS *et al.* 2016.

34. CLARK 1987; WYN HUGHES *et al.* 1999.

35. This wadi forms the lower part of the Wādī al-Abyad.

36. Sometimes identified as Leuke Kome. On this point, see GHABBĀN 1993; NAPPO 2010; JUCHNIEWICZ 2017.

37. See also GHABBĀN 2011, pp. 112-113, map VIII, indicating the existence of a second road parallel to that of 'Aynuna, passing through Qālis to reach al-Aghrā'. Nevertheless, Ghabbān does not develop the issue of the north-to-south road located along Wādī Batina, despite abundant inscriptions.

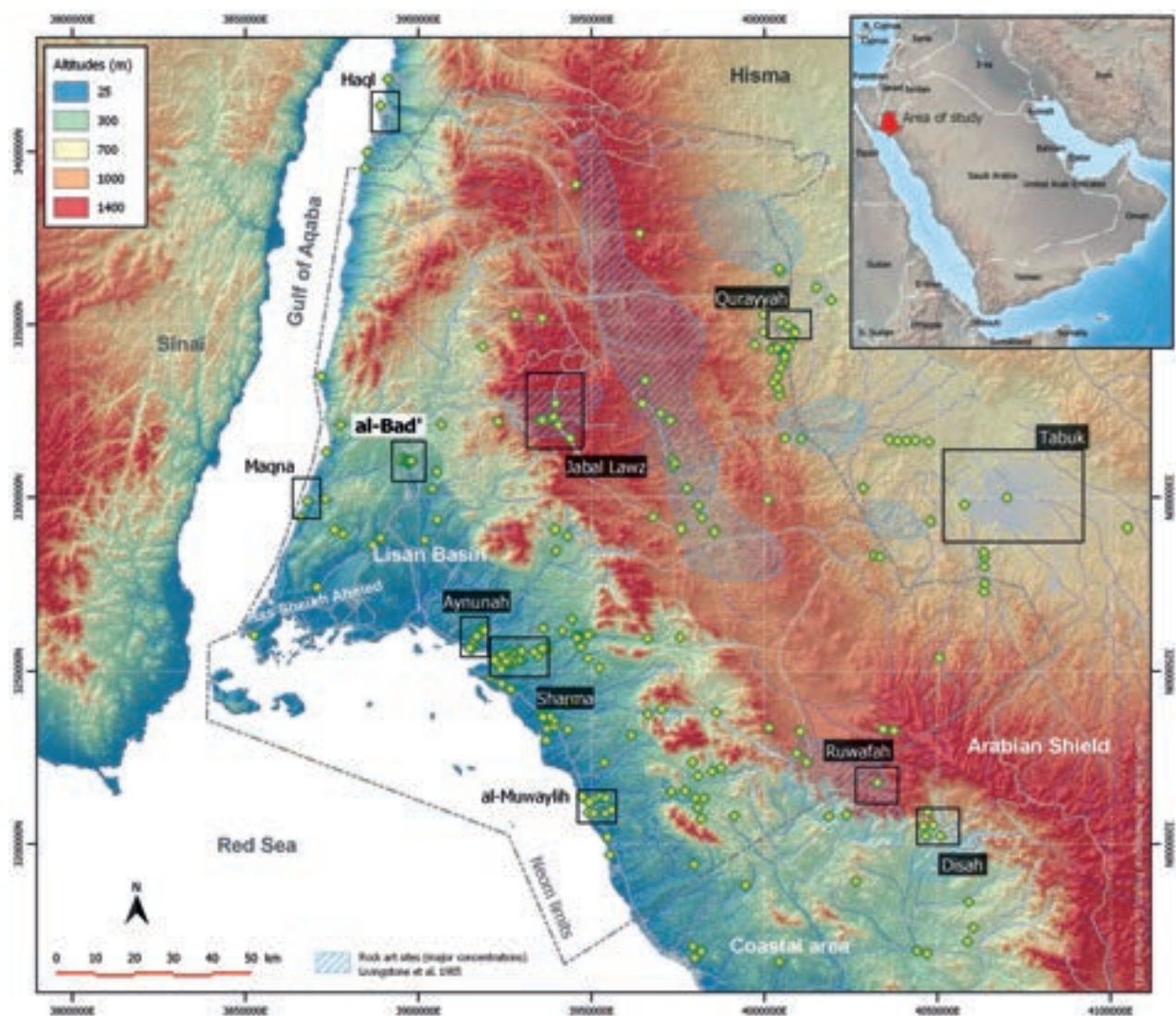


Figure 2 - Map of the Madian region with its main heritage sites discussed in the text; the yellow dots are additional archaeological sites identified during previous surveys (© BDAP, figure by G. Charloix).

to the accumulation of fossil aquifers at this location (Figure 3). The wadi ‘Afa’ here cuts through the Miocene sedimentary formations of Nutaysh (also called Burqan)³⁸ and al-Bad’ (also called Ghawwas),³⁹ which compose the mountains bordering the oasis (Mushalla to the west and Safra to the east). Successive Plio-Pleistocene, Pleistocene and Holocene deposits created a series of terraces of various kinds (boulders, pebbles, gravel, sand, silt) now visible on either side of the current course of the wadi.⁴⁰

38. CLARK 1987: “Nutaysh formation: poor quality sandstone and marl;” BATAÏNEH *et al.* 2012.
 39. CLARK 1987: “Bad’ formation: conglomerates, marl, and gypsum and coral limestone;” BATAÏNEH *et al.* 2012.
 40. DESRUELLES & COSANDEY 2019.

Historiography

The site of al-Bad’ has, until today, been marked by a dearth of studies, probably due to both the sensitive nature of its identification and the difficulty of accessing it. Early in the 1980s, however, before the intense development of modern infrastructure, Saudi authorities were aware of the significance of the area and provided protection for the archaeological sites by erecting a series of metal fences (following the results of the Saudi Comprehensive Survey) (Figure 3).⁴¹ The late 20th-century city of al-Bad’ therefore mainly developed outside the major historical

41. Notably, INGRAHAM *et al.* 1981.

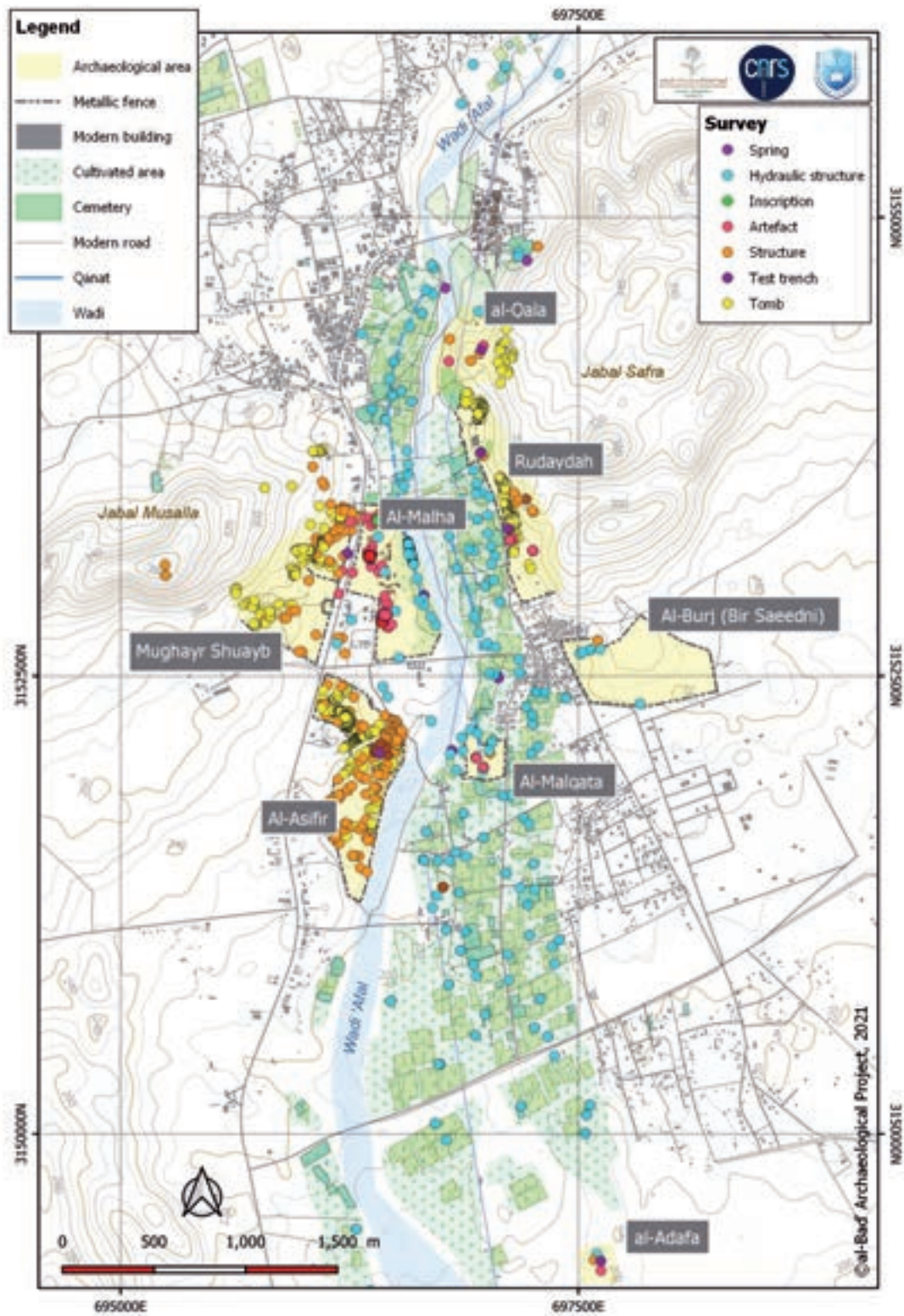


Figure 3. Location of archaeological sites at the oasis of al-Bad' (© BDAP, figure by G. Charloux).

areas to the west (sites of Mughayr Shu‘ayb, al-Malḥa and al-Aṣīfir) on the eastern base of Jabal Mūṣālla. To the east of Wādī ‘Afāl, another wide district named al-Disa⁴² extended farther south of Jabal Ṣafra, outside the main wādī bed and also away from the major archaeological zones (named al-Qala‘, Rudayda, al-Burj, al-Malqaṭa and al-Adafa). Today, fields and palm groves stretch out along both sides of Wādī ‘Afāl, particularly on the alluvial terraces on its east bank south of Rudayda site, and to a lesser extent on the west bank opposite the site of al-Qala‘.

The oasis was visited and mentioned several times by Arab geographers during the medieval period,⁴³ and by Western travellers following Rūpe l’s visit in 1829.⁴⁴ The earliest detailed descriptions, made by Burton,⁴⁵ Musil and Philby, were later complemented by more scientific surveys following Parr’s study in 1968,⁴⁶ sometimes with regional perspectives.⁴⁷ As noted by L. Nehmé,⁴⁸ the use of often confusing toponyms complicated the identification of archaeological remains and sites (for further detail on the various toponyms, see Figure 4).

Preliminary field research has recently been conducted on a few Islamic-period remains at the Malqaṭa and al-Burj areas,⁴⁹ as well as at the Nabataean rock cut tombs of Mughayr Shu‘ayb.⁵⁰ Our project has undertaken a comprehensive survey and conducted excavations in the oasis since 2017.⁵¹

42. ANSARY *et al.* 2002, pp. 38-39.

43. MUSIL 1926, Appendix IX, pp. 278-282; ANSARY *et al.* 2002, p. 17.

44. The site was not visited by C. Beck in 1874 (BEKE 1878, end map).

45. Stone artefacts were published in BURTON 1879b, while the coins found in the Rudayda area (BURTON 1879a, pp. 92-93, “Siyāghah sector”), and currently stored in the British Museum, were recently studied by T. BAUZOU (2016).

46. See also RESSEENI 1992, pp. 99-100, folders 2-4.

47. Several studies echo the earlier visitors’ descriptions of the site: GROHMANN 1963, pp. 56-59; SARTRE 1982, p. 25; BOSWORTH 1984, pp. 60-61; WENNING 1987, pp. 107-109; GATIER & SALLES 1988, pp. 175-76; RASHID 2003, pp. 167-69.

48. NEHMÉ *et al.* 2015, p. 50, note 95.

49. GHABBĀN 2011; BADAIWI 2014.

50. BADAIWI 2011; NEHMÉ *et al.* 2015, pp. 49-53; SUHAIBANI & FAWAZ 2018.

51. Extensive excavations at the al-Malḥa site began in 2018, while targeted test pits were carried out in other historic areas at al-Bad‘ in 2019. High-resolution aerial photographs of each area were taken with a drone and georeferenced and integrated into a GIS relational database. Remote sensing, collection of surface material, architectural study and 3D models of rock cut facades of tombs, architectural study of a 20th-century village, preliminary analysis of pottery, as well as geophysical, geoarchaeological and hydrological examinations, were also undertaken during five field campaigns.

2/ AL-BAD‘ BEFORE ONSET OF THE MADIAN PERIOD

The “history” of the al-Bad‘ region did not begin with the Madian period, but dates back to a much more distant past in the Palaeolithic period. Its first traces can now be found still scattered throughout the region.⁵²

The Late Neolithic installation

The oldest indications of permanent/semi-permanent occupation within the confines of the oasis date to the Late Neolithic, the first half of the 7th millennium BCE.⁵³ At that time a small community settled on a high terrace of conglomerates at the al-Aṣīfir site (Figure 5), which is comprised of a series of loose sand hips covered by a recent Holocene reg of rocky desert pavement. Lithics and shells were collected in February 2019; this was followed by a first sounding made at the base of one of the monticules (S127). A clear stratigraphy was revealed here, with an abundant lithic assemblage of local cherts and quartz, as well as worked shells used for bead production. Within an approximately 0.5 m-deep stratigraphy, al-Aṣīfir yielded more than 1,000 lithics including tools, of which arrowheads represent the most common type, which allows us to perform techno-typological comparisons with neighbouring regions. It also revealed an extremely rich organic assemblage, including large wood-charcoal fragments and faunal and botanical remains. Although no architectural remains have been identified in the sounding, the finds (seeds, lithics and bones) indicate that a fully developed agro-pastoral society resided at the oasis nearly 9,000 years ago, a few centuries after the settlement in Wādī Sharmā 1, which is located 63 km to the southeast.⁵⁴ The oasis therefore potentially constitutes a missing link with later seasonal pastoral nomadism observed in other parts of northern Arabia and the margins of the Southern Levant.⁵⁵

A probable late fourth-millennium BCE village

Following this first installation, there is a long gap of four millennia in the archaeological record that remains unresolved.⁵⁶ A few sherds and one ¹⁴C dating of charcoal

52. BURTON 1879b, pp. 300-301 (lithics); INGLIS *et al.* 2019; CRASSARD *et al.* 2020.

53. CHARLOIX *et al.* 2021c; CRASSARD *et al.* in preparation.

54. FUJII *et al.* 2018.

55. Cf. ROLLEFSON *et al.* 2014; GUAGNIN *et al.* 2021.

56. The rock art in the region, in particular in the Batina and Areet (Ḥisma) wadis, is, however, abundant and seems to offer evidence of a relatively long pre- and proto-historic presence (LIVINGSTONE *et al.* 1985; ANSARY *et al.* 2002, pp. 61-78).

Toponyms employed in the article (equal to AL-RESSEENI 1992 and BADAIWI 2011 (except al-Adafa and al-Qala'))		RÜPPEL 1829, pp. 219-220	BURTON 1879a, pp. 79-111, 136-172	MUSIL 1926, pp. 108-118, fig. 38 (map)	PHILBY 1957, pp. 211-222, 257-260	PARR <i>et al.</i> 1972, pp. 30-35	INGRAHAM <i>et al.</i> 1981, pp. 70, 74-75, 79	LIVINGSTONE <i>et al.</i> 1985, pp. 130, 141-142	ANSARY <i>et al.</i> 2002, pp. 28-39
	Oasis of al-Bad'	Beden	Maghâir Shu'ayb	Madian (village of al-Bed' to the north)	Bad'a	Al-Bad' (Mugha'ir Shu'ayb)	Al-Bad' area: sites 200-82-87 (corresponding to the fenced sites)	Magha'ir Shu'aib site 200-S108	Al-Bid'
1	Al-Burj (also called Bi'r Sa'idni or Sa'idni Well)	/	Bi'r el-Sa'idâni (pp. 98-100)	Al-Mâlha (pp. 118-119)	Al-Burj (pp. 214-216)	Jethro's well	Probably 200-86 (pp. 75, 79, pls. 82, 84-85); Islamic site and pottery; Ottoman period; Nabataean pottery	/	Bi'r al-Saeedni (pp. 31-36, fig. 13)
2	Al-Adafa (not fenced)	/	/	/	/	/	/	/	/
3	Al-Aşîfir	/	/	/	/	/	Possibly 200-84 (pp. 71, 74-76, pls. 84-85); "isolated cairns and superimposed on walls;" "Madianite" and Hellenistic pottery	/	/
4	Al-Malha	/	El-Malkâ/ El-Khammârah (p. 101)	Hawra (pp. 108-109, fig. 38)	Raqabât al-Mâliha (pp. 217-219)	Tawratiyah (33) (see also GHABBÂN 2011, p. 176)	200-83 (p. 76, pls. 82, 84-85); Nabataean/ Roman pottery	/	Al-Maliha (pp. 30-31, figs. 10-11)
5	Al-Malqata	/	/	Al-Malqata (p. 118)	Malqata (pp. 216-217)	Al Malqata	Probably 200-87 (pp. 75, 79, pl. 85); Islamic site, with possible evidence of ancient irrigation; Ottoman period; Midianite and Nabataean pottery	/	Al-Malqatah (pp. 36-37, fig. 14)
6	Mughayr Shu'ayb	El Bibau (pp. 219-220)	Maghair (p. 84)	Mořâjer Šu'ejb (pp. 109-116)	/	/	Mughair Shu'ayb 200-82 (pp. 74-76, pls. 81-82, 85); "Midianite" pottery; Nabataean to Roman period	200-S108 (pp. 130, 141-142)	Maghair al-Bid' (pp. 28-30, fig. 9)
7	Rudayda	/	Khashm el-Muttali'; Siyâghah sector (pp. 91-92)	/	/	"Al Malha?"	Probably 200-85 (pp. 71, 74); "the stone circular structures [...] represent foundation walls of an Iron Age or late first millennium settlement;" "Midianite" pottery	/	Probably Al-Rudaidah (Mutnat al-Rudaidah, fig. 12), but confusion with Aşîfir Also Maghair al-Kuffar (today in the northern half of Rudayda)
8	Al-Qala' (not fenced)	/	El-Muttali' (?) (p. 88; "Yellow hill," p. 89)	/	/	/	/	/	Possibly Al-Burj? (p. 36)

Figure 4 - The toponyms for al-Bad' according to previous studies; studies by Arabic geographers are not included (© BDAP, figure by G. Charloux).

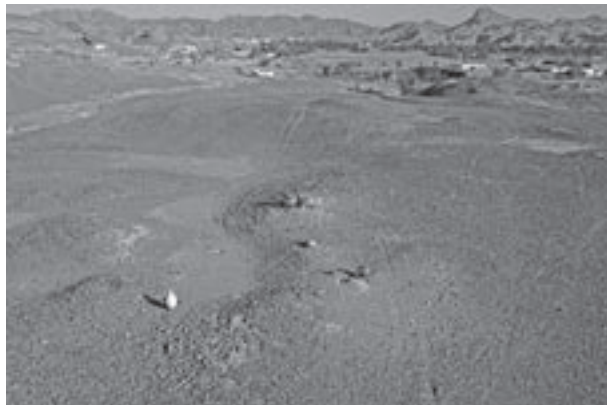


Figure 5 - The al-Aṣfīr site, and beyond the tell south of al-Malḥa (© BDAP, figure by G. Charloux).

from a hearth (Figure 29, top: 50111), however, seem to suggest an installation from the end of the fourth millennium BCE on the site of Rudayda, on the other side of Wādī ‘Afāl (Figures 6 and 10). Stone dwellings consist of small domestic structures that featured hearths, a threshold, bench seats and holes for positioning a tripod on the hearth. The collected artefacts are sparse: a few flint tools (among them one sickle blade), a shell bead and a loom weight, as well as two small copper alloy fragments. The few ceramic sherds suggest contact with several sites in the Southern Levant from the Early Bronze Age I (EB I, ca. 3800-3000 BCE), in particular pottery from Tell Ik anu which represents late or developed phases of that age.⁵⁷ This permanent habitation, which was probably extensive, testifies to the establishment of a village at the fringes of the agricultural areas in the valley. At that stage only the oases of Taymā’ (period 11a) and Qurayya have provided lasting installations from this period in Arabia; these are especially distinctive due to their impressive ramparts.⁵⁸ North of al-Bad’ the closest contemporaneous site is Wādī al-Yutum B (EB 1-2) at ‘Aqaba/Ayla.⁵⁹ Consequently, the discovery of an extensive occupation that is easy to access and to excavate constitutes a major discovery, particularly for our knowledge of the evolution of “proto-oases” in northern Arabia, and points to possible links with the Southern Levant⁶⁰ and the transition to an “oasis economy” during the following millennia.⁶¹

57. Eliot Braun, personal communication.

58. HAUSLEITER & EICHMANN 2018, pp. 20-24; LUCIANI 2019.

59. BRÜCKNER, EICHMANN *et al.* 2002. The transitional Chalcolithic to EB I sites of Tall al-Magass and Tall Hujayrāt al-Ghuzlān in Aqaba seem to precede that of Rudayda by one or two centuries (KHALIL & SCHMIDT [eds.] 2009).

60. See an hypothesis in CHARLOUX *et al.* 2021.

61. See GEBEL 2016; DINIÉS 2019.

3/ MADIAN: AL-BAD’ IN THE FIRST MILLENNIUM BCE

Textual sources and the “Midianite” pottery

The history of Madian is intrinsically linked to the biblical narrative, especially the Pentateuch, which remains the main written source attesting to its existence.⁶² Many researchers consider that Madian constituted a major political power in northwestern Arabia during the late second millennium BCE,⁶³ despite being poorly documented and having uncertain geographic and chronological boundaries.

Son of Abraham and Qetura (his second wife), the figure of Madian is, in Genesis, the father of Epher, Ephah, Hanoch, Abida and Eldaa, and particularly the uncle of Sheba and Dedān.⁶⁴ In Exodus, the Midianites are a hospitable people of wealthy merchants and pastoralists associated with the great tribes and cities of northern Arabia (Qedar, Nebayot, Taymā’, Dedān) or Saba’.⁶⁵

As Knauf explains,⁶⁶ Midianites are viewed with suspicion and even animosity after the Exodus episode.⁶⁷ Growing rich through raids and looting,⁶⁸ Madian is said to have participated in military clashes with the Hebrews prior to the establishment of the monarchy in Israel ca. 1000 BCE. His many adversaries were located at the fringes of the kingdom of the Southern Levant: Edom north of ‘Aqaba/Ayla, Mo’ab north of Edom and south of Ammon, and Israel, which makes it possible to circumscribe the region Madian occupied in northwestern Arabia.⁶⁹ The Midianites were reputed to be key players in the region political power struggles,⁷⁰ acting as intermediaries between local factions (Mo’ab, Israel).⁷¹ Sometimes identified with the semi-nomadic *Shasu* mentioned in Egyptian sources,⁷² the Midianites possessed wealth (in gold)⁷³ and vast herds,⁷⁴ but also cities and numerous camps.⁷⁵ They thus appear as nomadic, pastoral people involved in peaceful caravan trade, as

62. RÖMER 2015, pp. 51-70, 73.

63. KNAUF 1988.

64. Genesis 25.1-4.

65. RETSÖ 2003, pp. 128-129; ROBIN & GHABBĀN 2017, p. 372.

66. KNAUF 1988, pp. 150-170.

67. See also DOZEMAN 2008.

68. Judges 6.3-5.

69. KNAUF 1988, pp. 1-6, ab. 1; RETSÖ 2003, p. 128.

70. DUMBRELL 1975, pp. 331-332.

71. Numbers 22.4-6.

72. For example, see PARR 1988; STAGER 2001; FAUST 2015.

73. Numbers 31.50-54; Judges 8.26.

74. Cattle and sheeps/goats, donkeys (Numbers 31.32-34); camels (Judges 6.5; 7.12; 8.21).

75. Numbers 31.10.



Figure 6 - Rudayda south: pottery from the Early Bronze Age (top) uncovered from SD501 (bottom) (© BDAP; top drawings and photographs by J. Laroye; bottom photograph by G. Charloux .

well as sedentary groups, cultivators and belligerents.⁷⁶ As the Madianites did not have a single ruler but instead many kings,⁷⁷ they were probably comprised of various clans and tribes in varying states of alliance.⁷⁸ Madian was therefore not a centralised power, but a “vast tribal confederation with changing contours.”⁷⁹ Moreover, no capital city is mentioned in the textual sources or historical accounts, and it is therefore difficult to confirm the existence of a toponym (city) Madian at the end of the second millennium BCE.⁸⁰

The main episodes of Madian’s history (notably that of Exodus, but also the conflicts after the creation of Israel) are believed to run parallel with the period between the end of the second millennium BCE and the beginning of the Persian era. It is believed that Moses would have lived in the thirteenth or the 12th century BCE, contemporary with the reigns of Ramses II or Ramses III.⁸¹

On philological grounds, it is understood that the biblical text does not represent a singular incident but rather is likely a complex compendium of several. Some, which for the oldest traditions of the Pentateuch were written at the latest between the 8th century BCE, while others, the most recent date to the Hellenistic era around the 3rd to 2nd centuries BCE.⁸² Madian is indeed mentioned by Isaia, confirming its existence before the late 8th/early 7th century BCE.⁸³ Because of its heterogeneous and diachronic formation—the importance of which from the 6th to 4th centuries BCE is indisputable⁸⁴—the Pentateuch must be “seen as theological or ideological constructions rather than historical records.”⁸⁵

For the majority of academics, the Exodus did not take place in the manner presented in the Bible. The historical reality of the Exodus from Egypt to Canaan remains, however, supported by many researchers, although it has been difficult to demonstrate archaeologically.⁸⁶

76. BONACCORSI 1904.

77. Numbers 31.8; Judges 8.12.

78. Tribes or clans of Kenites and Amalekites would have been part of Madian (STAGER 2001, pp. 108-10; see also TEBES 2020: “Midian and the origins of Yahweh” with references).

79. ROBIN & GHABBĀN 2017, p. 372; see also DUMBRELL 1975, p. 337.

80. Qurayya, a major city in Northwest Arabia at the time, would, however, be an excellent contender for a regional capital (see STAGER 2001, p. 110; GHAZZI 2010).

81. DOZEMAN 2000.

82. RÖMER 2015, pp. 7-22.

83. It would also emphasise his association with Saba’ and Dedān in Genesis (25.2-3).

84. RÖMER 1996, p. 22.

85. RÖMER 2015, p. 3.

86. See FAUST 2015. For example, BIETAK 2015, based on various arguments, included the contemporaneous presence (LBA/IA1) of the same four-room house type in Canaan and Egypt. In any case, it is difficult to rely on the descriptions of the

The veracity of the reference to Madian in the time of Isaia and up to the Hellenistic period thus becomes problematic: memory of a more or less legendary and then vanished politico-regional entity? Unless the politico-social context of this Madian is modelled according to an entity contemporaneous to the writing of the Bible in the first millennium BCE? The question remains open to debate.

Impinging on this debate is the emergence of the inscription Ghabbān-Robin al-Zaydāniyya 1, discovered near Taymā’, which mentions Madian for the first time outside of the biblical framework (Figure 7):

[Bnbr b-Ṭ’n s’dd Mdyn]

[Bnbr son of Ṭ’n, the wisdom (or the destroyer) of Madyan]



Figure 7 - The Ghabbān-Robin al-Zaydāniyya 1 inscription (after ROBIN & GHABBĀN 2017, p. 390, fig. 6 [detail]; courtesy of F. Egal).

According to C. Robin,⁸⁷ its “ancient” Taymanitic palaeography dates back to the first centuries of the first millennium BCE, but this must be treated with caution: the use of Taymānitic is generally dated to between 600 and 400 BCE,⁸⁸ but may have been used long before that indeed, at least as early as the 8th century BCE.⁹

This inscription seems both to provide the first chronological clue confirming the philological criteria and to identify an approximate location for Madian⁹⁰ in Northwest Arabia.⁹¹

Pentateuch to understand precisely the socio-economic and chronological context of Northwest Arabia at the end of the second millennium BCE (cf. KNAUF 1988, pp. 1-42).

87. ROBIN & GHABBĀN 2017, p. 380, fig. 6.

88. MACDONALD 2004.

89. MACDONALD 2010, p. 10.

90. The ambiguity of the term does not, however, allow us to locate Madian in the immediate vicinity of or at a greater distance from Taymā’.

91. Another, onomastic, argument links the Madianite king Salmunna/Salmunnā’ (Judges 8.5-21) to the North Arabian

Previously, the history of Madian had been associated with the beautiful Qurayya painted ware (QPW), originally called "Midianite pottery,"⁹² an association that attempted to confer physicality to Madian's political power and locate it geographically and chronologically.⁹³ The term "Midianite pottery,"⁹⁴ however, arguably link heterogeneous and multi-period ceramic assemblages to a poorly identified people.⁹⁵

This ware, recognisable by its bi-coloured decoration of painted lines and zoomorphic figures, was produced in northwestern Arabia and in the Southern Levant during the second millennium BCE.⁹⁶ There was no consensus⁹⁷ until recently on its production date supposedly between the 13th and the 10th/9th centuries BCE (LBA-IA1).⁹⁸

Based on recent excavations and the study of a pottery kiln in Qurayya,⁹⁹ M. Luciani recently proposed to distinguish a regional Standard Qurayya Painted Ware (SPQW), produced between the 17th and 15th centuries BCE,¹⁰⁰ from a Classic Qurayya Painted Ware (CPQW) ca. 15th to 11th centuries BCE, the latter found in Timna especially (Hathor temple) and elsewhere.¹⁰¹ Other later ceramic traditions, (Taymā' Early Iron Age Ware (TEIAW), ca. 11th to 9th centuries BCE; Sana'iye Painted Ware, ca. 9th to 7th centuries BCE; Edomite painted ware (STNP), ca. 8th to 4th/3rd centuries BCE; al-Ula painted pottery: ca. 6th to 3rd centuries BCE),¹⁰² would then perpetuate a form of stylistic continuity¹⁰³ unique

deity Salm who appeared in Taymā, but also probably in Dūma and Qurayyah (LEMAIRE 1995, p. 69).

92. PARR *et al.* 1970, p. 240; KALSBECK & LONDON 1978; ROTHENBERG & GLASS 1983.

93. E.g. KNAUF 1988, pp. 15-25; STAGER 2001.

94. On this point, see the summary in TEBES 2020.

95. Although generally used as a geographic designation by scholars, it continues to be employed in general literature, rendering the subjects of study somewhat ambiguous (e.g. RÖMER 2015, pp. 55-56).

96. PARR *et al.* 1970, pp. 230-238; BAWDEN 1983; ROTHENBERG & GLASS 1983; PARR 1988; TEBES 2013; SINGER-AVITZ 2014; INTILIA 2016; LUCIANI & ALSAUD 2018.

97. SINGER-AVITZ 2019 (13th to mid-11th centuries BCE).

98. See TEBES 2013; INTILIA 2016.

99. The abandonment of the production kiln at Qurayya dates back to before the 13th to 12th centuries BCE (LUCIANI & ALSAUD 2018, fig. 8; LUCIANI 2019, p. 141).

100. LUCIANI & ALSAUD 2018, p. 172.

101. INTILIA 2016; LUCIANI 2019. See also the two types of ceramics at Taymā', grouped under the QPW category, in HAUSLEITER 2014, p. 407.

102. M. Luciani also envisages several other new categories: AKPW (ca. 8th to 5th centuries BCE), ADPW (late first millennium BCE(?)) (LUCIANI & ALSAUD 2018). For an example from the middle Iron Age, see LUCIANI 2019, p. 151.

103. In addition, there are other types of decorations, including the wedge- and circle-impressed pottery (ca. 6th to 4th centuries BCE; ZORN 2001).

to the material record of northwestern Arabia.¹⁰⁴ Over the *longue durée*, the decorative trend moves towards more marked geometrisation and simplification. This blurring of the multiple categories, the outlines of which are still poorly defined for the most recent ones, has resulted in reducing the duration of occupation of the QPW collection sites to the Late Bronze Age/ Iron Age I, and therefore supports a connection with Madian.¹⁰⁵ It remains possible, however, that the entity Madian can be dated to after the SQPW-CQPW, as the inscription Ghabbān-Robin al-Zaydāniyya 1 seems to show, and that it existed at least until the Hellenistic period and was therefore unrelated to QPW. Conversely, one should not exclude that the Madian entity is more ancient and goes back to the second millennium BCE, then in connection with the QPW. Perhaps, Madian also persisted throughout the first millennium BCE in relation (or not) to other painted wares. In any case, the QPW would only be a (plausible) component of the Madian entity, but in no way proof of its existence. Moreover, Egyptian expeditions in the northwest of the region (as far as Taymā') under Ramses III,¹⁰⁶ possibly for economic purposes, probably did not put an end to this Madian entity, of which we know very little in fact.¹⁰⁷

Archaeological remains at the oasis of al-Bad'

Surprisingly, relatively few QPW sherds were collected during previous surveys in the region and at al-Bad' in particular,¹⁰⁸ with only one probable example of CQPW.¹⁰⁹ These surface sherds thus reflect a vague chronology, which has sometimes been used in a speculative manner.

Recent archaeological investigations now emphasise a high density of occupation during the first millennium BCE

104. TEBES 2013, 2015; HAUSLEITER 2014; ROHMER & CHARLOUX 2015.

105. Many of the sherds qualified as QPW by INTILIA 2016 and published by the Saudi Comprehensive Survey are only mentioned, with no illustration other than those shown in the published plates. In view of recent developments, this potentially distorts the proportions of ceramic types, which affects understanding of the chronology of the sites and the extent of this type's appearance.

106. Notably, SOMAGLINO & TALLET 2011. See also SPERVELSLAGE 2019.

107. In the 1980s, Parr suggested an abandonment of the QPW at the end of the Late Bronze Age/New Kingdom (PARR 1988).

108. PARR *et al.* 1970, p. 240, only mentioned them, but of which type remains obscure; See also PARR *et al.* 1972, p. 33 (see comment in ROTHENBERG & GLASS 1983, p. 73); INGRAHAM *et al.* 1981, pp. 74-75, pl. 81, no. 4 (site 200-84; probably CQPW, cf. Figure 11), no. 14 (site 200-82: Mughayr Shu'ayb, uncertain type), no. 19 (site 200-81: Tayyib al-Ism, doubtful); compare with INTILIA 2016, pp. 244-245.

109. INGRAHAM *et al.* 1981, pl. 81, no. 4 (site 200-84).

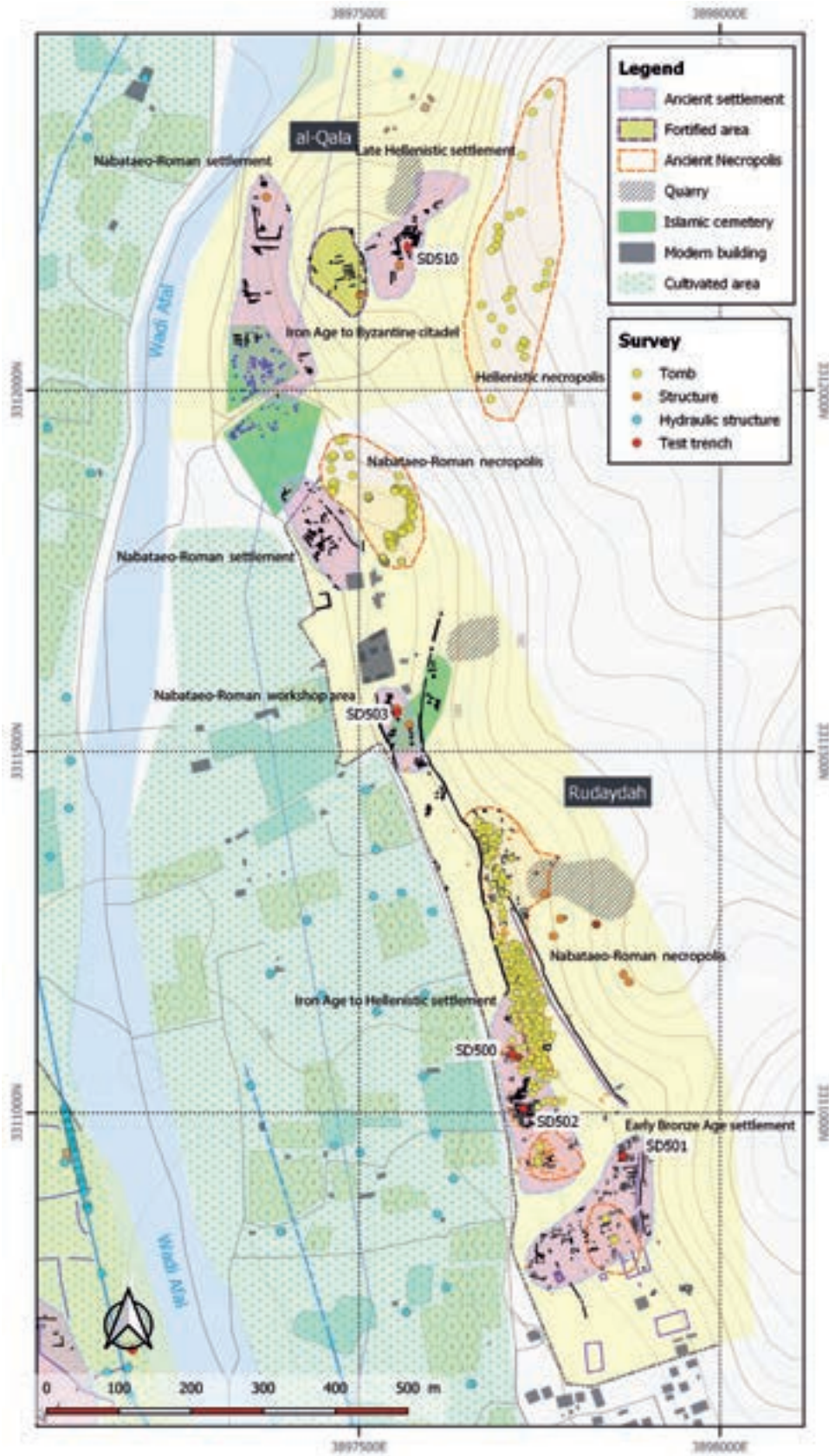


Figure 8 - Map showing the sites of Rudaydah and al-Qala' on the eastern bank of the Wādī 'Afāl at al-Bad' (© BDAP, figure by G. Charloux).



Figure 9 - Iron Age to Hellenistic-period settlement at Rudayda South (© BDAP, figure by G. Charloux).

at the oasis, the oldest of which probably falls at the end of the second millennium BCE.

The occupation at this time appears to be concentrated on the eastern shore of Wādī 'Afāl (the Rudayda and al-Qala' sites) on a gypsum and colluvial terrace located at the base of Jabal as-Şafra, which dominates the alluvial plain by about 4-5 m (Figure 8). The multi-period installation seems very extensive there (about 1.6 km in length north to south), albeit discontinuous and heterogeneous. Two settlement sites (Rudayda South and al-Qala') and a necropolis (al-Qala' East) date back to this vast chronological range (first millennium BCE). The first two were disturbed by what are probably more recent (perhaps Nabataean) necropolis. Two other areas have a preliminary date only: Rudayda North and al-Qala' West. The global picture for the area therefore remains incomplete, for a period spanning from around the 8th to the 3rd centuries BCE, with a probable first occupation between the end of the Late Bronze Age and the Iron Age marked by CPQW.¹¹⁰

110. Further to the occupation dating to the late fourth millennium BCE and the digging of later (probably Nabataean) graves

The layout of the remains visible on the surface of Rudayda South encompasses a settlement that is difficult to define, extending over approximately 200 × 80 m¹¹¹ on the edge of the natural gypsum terrace and overlooking the palm grove (Figure 9). The settlement seems to be made up of both rooms carved into the rock and built walls, according to an interconnected logic of semi-buried and elevated habitat (Figure 10). Despite a north to south and east to west orientation of the walls and built-up quadrangular rooms, no large-scale planning of the remains has been revealed at this stage through the survey work based on high-resolution aerial images.

Two soundings, SD500 and SD502, yielded two main architectural phases, to a depth of approximately

is the discovery of numerous sherds from the 1st century CE at the southern edge of Rudayda, which could complement the oasis historical context for this period.

111. To which it might be conceivable to add 200 × 170 m in the area located south of Wādī Darak, although this area could also be linked to the occupation dating to the end of the fourth millennium BCE.

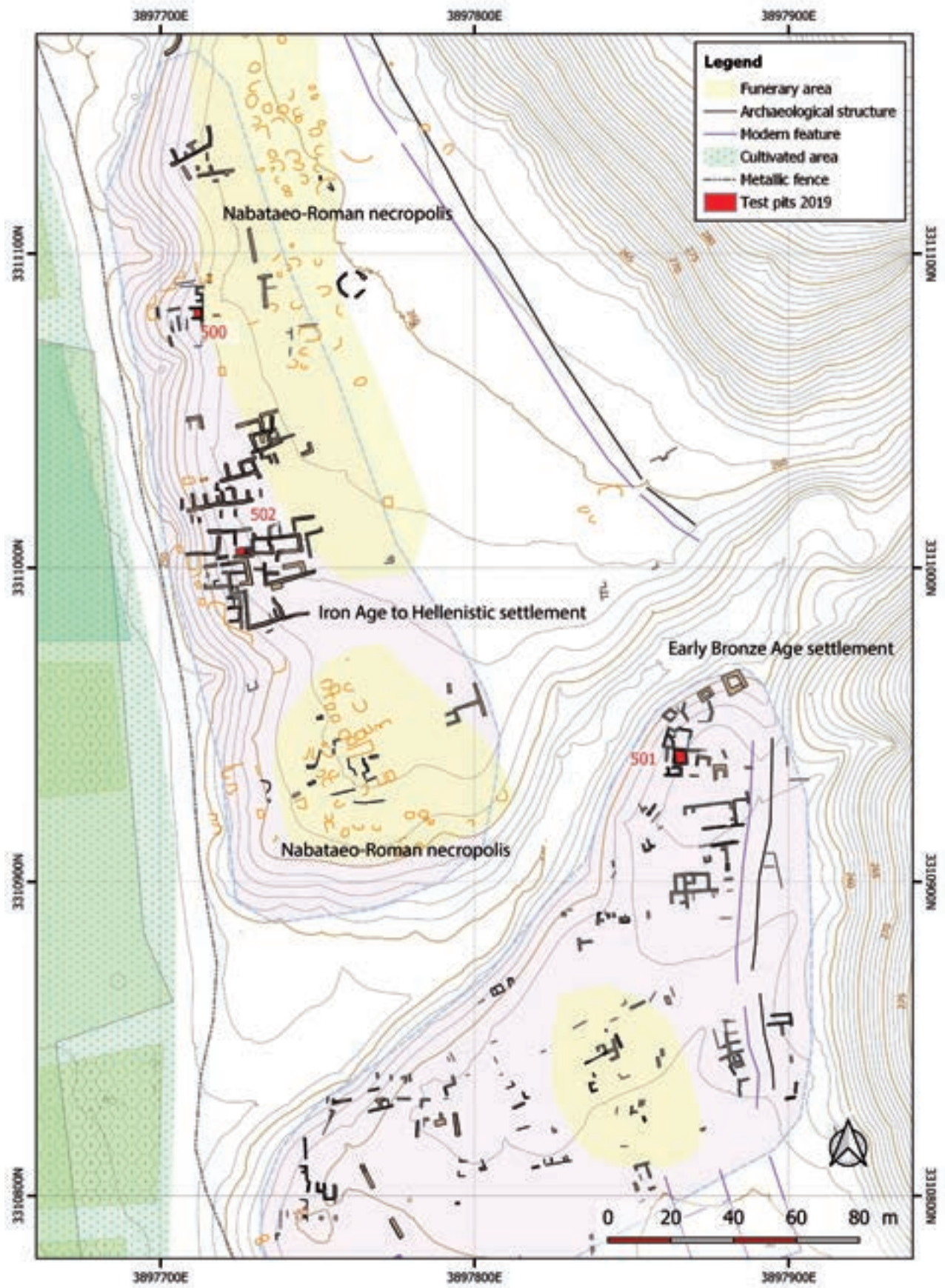


Figure 10 - Plan of the settlements in the southern part of the Rudayda site (© BDAP, figure by G. Charloux).

1 m above the bedrock. Ceramic assemblages, mostly comprising open forms and cooking jars, are both sparse and barely distinguishable from one phase to another at this stage of the research.

The first phase, dated to between the 8th and 6th centuries BCE according to the ¹⁴C dating of a charcoal fragment (Figure 29: 50011), was only identified in the lower deposits of SD500 and derives from a context still poorly understood. This lower phase is associated with postholes dug into bedrock, which could indicate the establishment of mobile populations before the construction of a more solid superstructure.¹¹² This apparently mixed level notably includes a CPQW sherd (Late Bronze Age/Iron Age I and therefore pre-8th century BCE)—which one might be tempted to connect with the postholes—and another with painted braces evoking later painted pottery wares of the first half of the first millennium, as well as a sherd with the engraving of the legs of a horse or a camel (Figure 11) evoking mid-first-millennium BCE rock art depictions around Taymā' (North Arabian Style, see OLSEN 2017).

In the upper level—which yielded results that seem more reliable—another sherd with painted braces and a wedge- and circle-impressed pottery sherd correspond well to the late 5th- to mid-3rd-century BCE dating of a large hearth (Figure 29: 50008).¹¹³ These also correspond to the date of another hearth in the lower phase of SD502 (Figure 29: 50215). Several sherds with painted lines of the same period were also collected from the surface of this area.

Both soundings have revealed a mid-first-millennium domestic occupation—with traces possibly originating in the late second millennium BCE—which can potentially be pursued farther north to the al-Qala' site.

Previously mentioned only by Burton in the 19th century,¹¹⁴ the site of al-Qala', rediscovered in 2017, is composed of three areas (Figure 12).¹¹⁵ The lower western area (approximately 300 × 80 m) contains large stone and mud-brick structures, among them one possible communal building made of hewn gypsum ashlar. This area, which was possibly connected with the upper area to the east, remains unstudied until now.

The upper area consists of a fortified promontory and is completely covered by stone structures; the large upper terrace (100 × 60 m) dominates the surroundings by a height of almost 60 m. The settlement was protected by a fortification wall with a preserved segment about

12 m long consisting of perfectly jointed sandstone blocks along the edge of a cliff (Figure 13). This area might have experienced a long occupation, due to its specific strategic location, possibly dating from the Iron Age. Although no trace of this period has been identified yet, a sample of dry twigs taken from an entresol in a stone building located on the slope provided a calibrated date of 804-563 BCE (Figure 29: twigs).

To the east, the remains of a dense occupation, composed of terraces and walls more than 1 m thick, extend perpendicular to the eastern flank of the cliff within a narrow gully and on a sloped terrace of the northwestern face of the Jabal Şafra massif. This site, which stands above the bottom of the wadi, was hidden by the nearby promontory and provided a protected location with restricted accessibility. Small rectangular rooms on a large surface (approximately 150 × 50 m) and abundant quantities of cooking and storage vessels indicate the occurrence of domestic activities in this area during the Hellenistic period.¹¹⁶

A 3 m-deep sounding (SD511), conducted inside the rectangular rooms in the centre of the gully, supports a 3rd- to early 1st-century BCE date through the ¹⁴C dating of a fireplace (Figure 29: 51117), along with a contemporaneous assemblage of broken domestic vessels¹¹⁷ (Figure 14).¹¹⁸ Excavation showed deep stone foundations and the probable presence of multiple-storey houses with a possible cellar beneath. We can therefore conclude that there was a dense Hellenistic village here.

The pursuit of archaeological surveys has notably allowed the discovery not far to the east of a pre-Islamic necropolis on the heights of Jabal Şafra covering an area estimated at almost three hectares (approximately

112. Possibly like the early levels of Hegra (ROHMER & CHARLOUX 2015).

113. ZORN 2001.

114. BURTON 1879a, pp. 88-89.

115. The site remains unprotected today.

116. Surface finds included fish plates, table amphorae with square rims, a button base of a Rhodian amphora and one orange sherd with red-painted lines recalling NPFW sherds (probably Schmid's phase-one type: SCHMID 2000). One rough carinated bowl may, however, be more recent (1st to 3rd centuries CE). This assemblage is nearly completed by the discovery of a small, realistic terracotta horse head, with globular eyes, a mane engraved with oblique lines and a harness (Figure 14); it is comparable with more models found at Busayra (SEDMAN 2002, pp. 381-387). A late 4th- to 1st-centuries BCE silver tetradrachm that resembles Athenian owl models (Thomas Bauzou, personal communication; BAUZOU 2016, pp. 88-90) also comes to this area according to Maatiq Atiah Maatiq al-Omiri (SCTH representative).

117. With a rather different pottery typology than Rudayda South.

118. Compare the painted bowl (Figure 14) with those from Qasr al-Bint Phase II and El Habis (RENEL & MOUTON 2013, p. 75, fig. 23), and other pottery forms with PARR 1970 (phase five). See also BERLIN 2015.

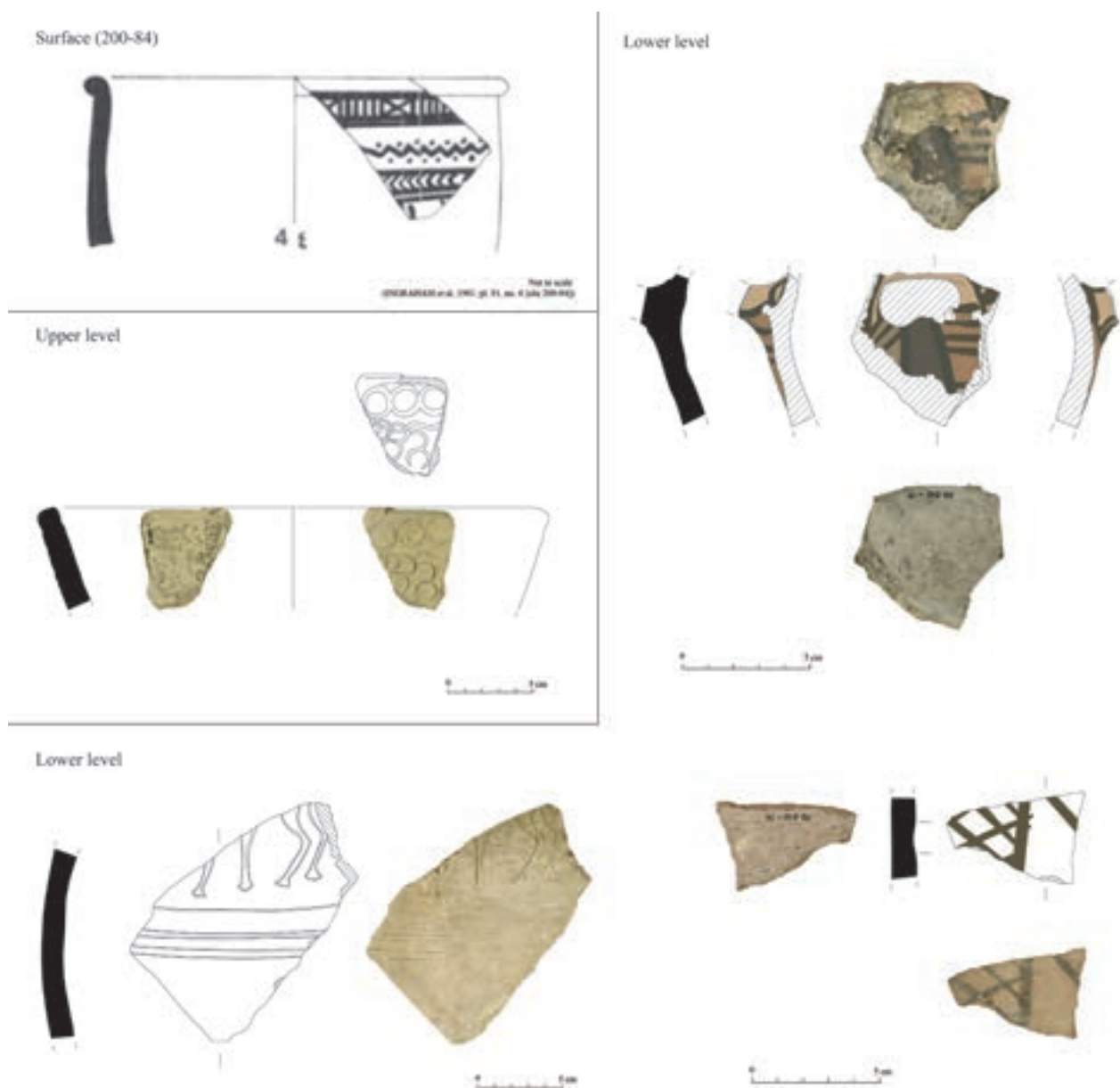


Figure 11 - Ceramics, among them CQPW top right and a wedge and circle-impressed pottery sherd found on the upper level, coming from Rudayda South, sounding 500 (© BDAP, figure by J. Laroye).

390 × 90 m) (Figure 12).¹¹⁹ The 26 identified graves are rectangular, generally measuring between three and four metres on their sides (Figure 15). Constructed of small blocks of gypsum, only their foundations remain

preserved in one or two courses.¹²⁰ This necropolis seems to be linked to the site of al-Qala', which is probably contemporaneous with it.

119. It does not preclude the possibility of other in the many cavities in the Jabal; speleological examinations will be necessary in the future.

120. The relatively coarse ceramic assemblage seems to date back to the second half of the first millennium BCE, but a more complete examination must be carried out on this material.

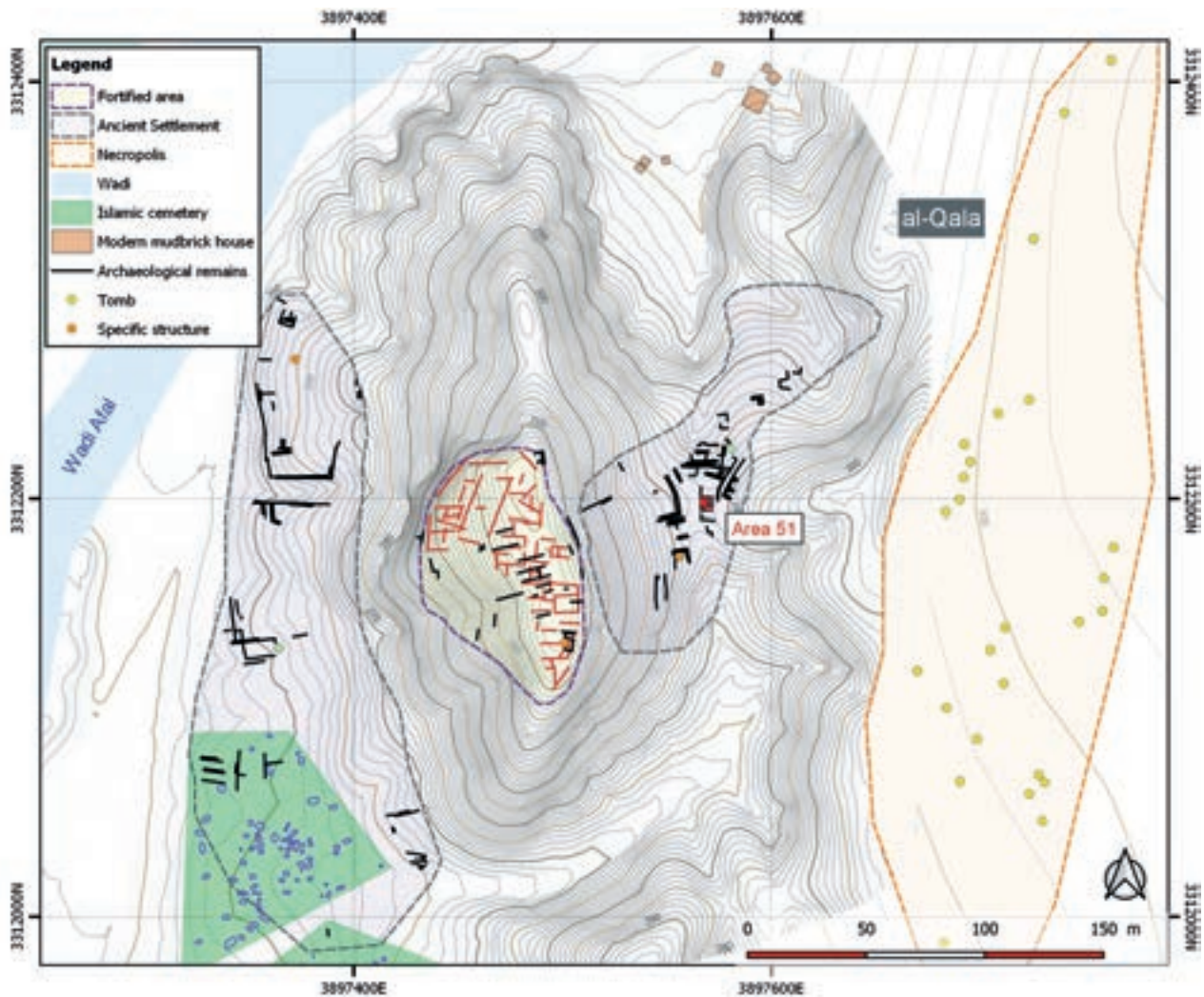


Figure 12 - The Hellenistic settlement at al-Qala' East and its nearby necropolis, both situated to the east of the citadel; the red lines indicate Bruno Gavazzi and Paul Bernard's interpretation on geophysical imagery (© BDAP, figure by G. Charloux).

These archaeological evidences now make it possible to propose the existence of a dense occupation during the first millennium BCE in the Rudayda area, as well as a diffuse human presence in the Late Bronze Age or in the Iron Age I.

From approximately the end of the second millennium BCE, contacts seem to have been established with the Southern Levant via 'Aqaba/Tell el-Kheleifeh and perhaps as far as Timna¹²¹—where a few QPW sherds were found—but also with other sites in northwest Arabia.¹²² Surprisingly, no site on the coastal road presents a real stratified context for this period or evidence of a

built environment, which could suggest the presence of nomadic/semi nomadic populations, within the framework of still emerging regional trade, especially via the oasis of Qurayya on the most direct north-to-south track

These desert populations, difficult to comprehend, dominated the region until the Iron Age II, similarly to what took place in the Negev.¹²³ The foundations of a fortress from the 8th century BCE at Tell el-Kheleifeh and then of a long settlement, perhaps until the Hellenistic period,¹²⁴ coupled with the increase in trade on this north-to-south route, may have progressively led to the increase role of nomadic/semi nomadic groups on the Wādī 'Afāl traffic axis. The establishment of a village at Rudayda,

121. FINKELSTEIN 2014a, pp. 122-136.

122. INGRAHAM *et al.* 1981 (sites 200-36, 200-37, 200-38, 200-39, 200-40, 200-41); INTILIA 2016, p. 190, fig. 11.

123. FINKELSTEIN 2014b.

124. FINKELSTEIN 2014a; PARKER 2007.



Figure 13 - The citadel at al-Qala', possibly dating from the Iron Age to the Byzantine period (© BDAP, photograph by K. Guadagnini).

and perhaps of a citadel at al-Qala', also seems to indicate the existence of a network more connected to other major sites in the region than first recognised, in particular at the mouth of Wādī Sharmā and probably at 'Aynuna, both of which comprised elevated fortified sites.

The status of the oasis in the middle of the first millennium BCE until the coalescing of the Nabataean polity remains to be determined:¹²⁵ was it an autonomous caravan station or dependent on a regional power?¹²⁶ Until the 4th to 3rd centuries BCE the settlement seems mainly to have occupied the southern part of the site of Rudayda

in the form of a small village established adjacent to agricultural terraces in the valley. This settlement was probably contemporary with the existence of a settlement farther north, adjacent to al-Qala', in connection with the citadel.

From the 3rd century BCE to the beginning of the 1st century BCE, in a possibly murky geopolitical context, occupation developed on the site of al-Qala' East, under the protection of the neighbouring stronghold.¹²⁷ The artefacts and vessels of this period suggest repeated contacts with the northern regions and in particular that of Petra, and also indicate intense trade; these suggestions do not, however, preclude (for the moment) that the oasis was already under Nabataean control at that time.¹²⁸

125. According to RETSÖ 2003, pp. 297-298, the region of al-Bad' was part of the territory of the Banizomaneis/Bythemanéoi tribe during the second half of the first millennium BCE.

126. An inscription of a king of Dedān, discovered at Bajda in wadi Batina (photograph presented at the Neom exhibition in the visitor centre of al-Bad' in 2019-2020) highlights probable contacts with al-'Ula at that time. Apart from the fact that the Gulf of 'Aqaba was called Lihyante Gulf (Laeanites/Aelanites) in antiquity (Diodorus III.43; Strabo XVI.4.18; Ptolemy, *Geography* VI.7), no written source placing Dedanite or Lihyante (not even Persian Achaemenid, see EPH'AL 1982, pp. 201-204) at al-Bad' has been discovered.

127. Curiously, we have, to this day, uncovered no evidence of human occupation during the first millennium BCE on the west bank of Wādī 'Afāl, perhaps due to the small wadis that cut the area, possibly a cause of lower quality and smaller extent of the agricultural terraces. However, this observation may merely be the result of archaeological bias as it is based on casual acquaintance with the area.

128. RETSÖ 2003, p. 305; GRAF 2006; GRAF 2013, p. 50.

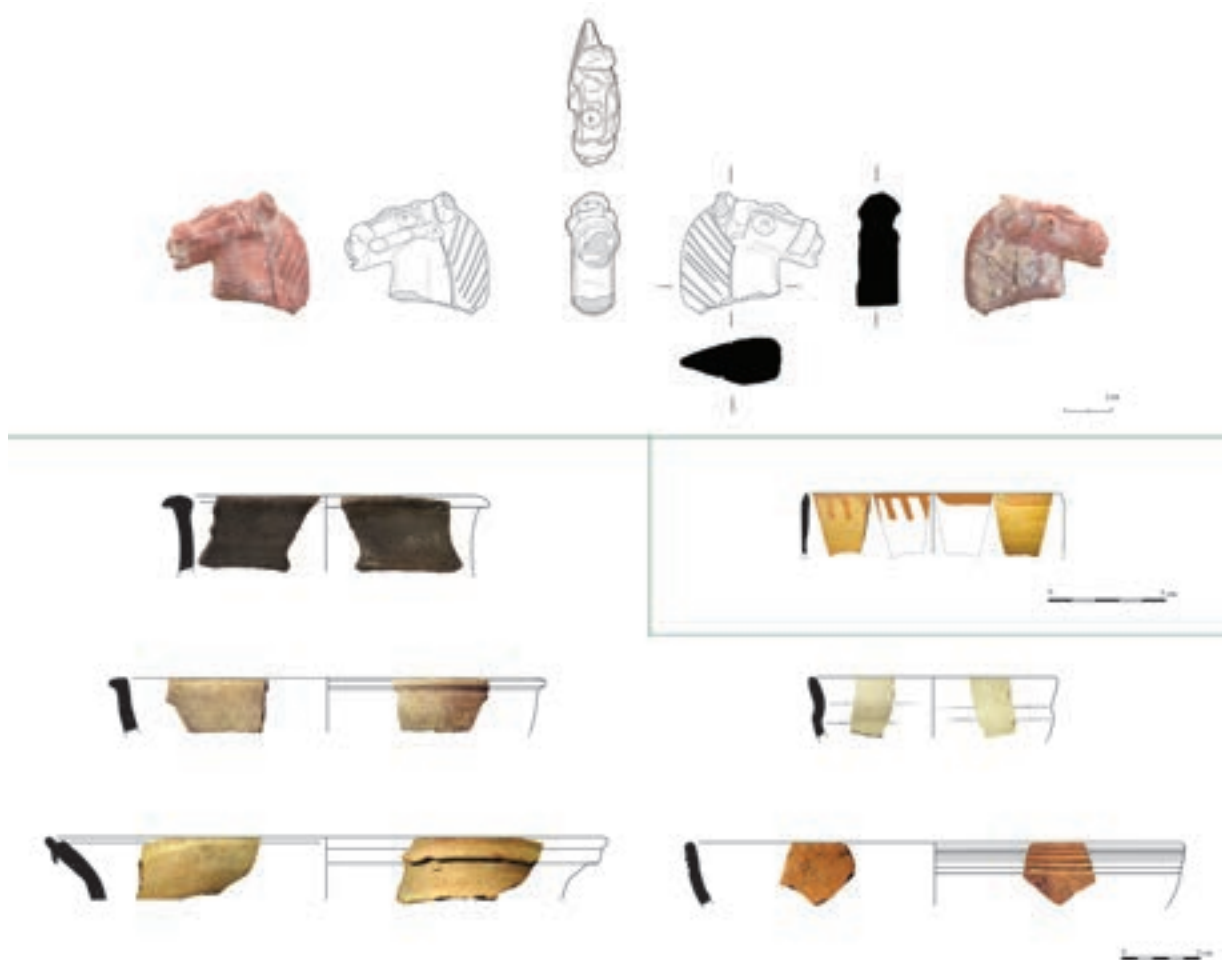


Figure 14 - Archaeological material from the site at al-Qala' East; horse head recovered from the ground surface, pottery from SD511 (©BDAP; drawings by J. Laroye; photographs by S. Sahlah).



Figure 15 - The eroded remains of a square tomb in the necropolis of al-Qala' (© BDAP, photograph by K. Guadagnini).

■ 4/ MADIAMA: AL-BAD' FROM THE NABATAEAN ERA TO THE EVE OF ISLAM

Textual sources

“Madian” appears as a toponym for a town among classical authors. In the 1st century CE, Flavius Josephus explained that Moses would have settled in *Madiana* on the coast of the Red Sea (Eritrean Sea), after his flight from Egypt.¹²⁹ In the 2nd century, Ptolemy distinguished two “Madian”—one possibly a duplicate¹³⁰—both located in the Northwest of Arabia Felix:¹³¹ *Modiana* is a port on the coast of the Red Sea, south of *Madiama*, which is located inland as confirmed by Eusebius of Caesarea and Saint Jerome,¹³² who place *Madiam* in the Saracene Desert, east of the Red Sea.¹³³ Further supporting this link between *Madiama* and the oasis of al-Bad' is the proximity of *Madiama* and the town of Macna mentioned in the same list by Ptolemy¹³⁴: it is hard not to associate Macna with the harbour of Maqnā 20 km from the oasis of al-Bad'.¹³⁵ Thus, it seems plausible to locate *Madiama* at al-Bad'. No classical description, however, provides any information on the oasis environment at that time. *Madiama* is also not mentioned in the *Notitia dignitatum* of the 4th century, unlike 'Aqaba (Aila, *Dux Palaestinae*), suggesting a withdrawal of Roman troops from the region before that date, as was notably shown for Hegra at the end of the 3rd century CE.¹³⁶

The South Arabian and Arab-Islamic textual sources make it possible to gain some understanding of the populations living in the region of al-Bad' and perhaps at the oasis itself, on the cusp of Islamisation. The tribe of Judhām (see § 5) settled throughout the Ḥisma region (“Land of Judhām”), at least since the mid-6th century CE, possibly moving from the Najd or South Arabia.¹³⁷ Ibn Ishaq seems, however, to consider a direct link between the Shu'ayb and Judhām tribes.¹³⁸ Associated with, and

later absorbed by, the Lakhm and 'Amila tribes,¹³⁹ the tribe of Judhām was one of the Arab federates of the Byzantines that fought against the troops of the prophet Muhammad at Mu'ta in 629 CE, then Yarmuk in 636 CE.¹⁴⁰ Before converting to Islam, the Judhāmītes were apparently mostly Christian, but also certainly comprised Jewish and possibly pagan peoples (see §) .¹⁴¹

Al-Bad' from the Nabataean to the Byzantine period

Along with Hegra (Madā' in Sālih) and Dūmat (Dūmat al-Jandal), al-Bad' is considered to have been one of the main Nabataean sites in northwestern Arabia.¹⁴²

The area of Mughayr Shu'ayb, which contains more ostentatious tombs, is the most well documented by previous travellers and explorers.¹⁴³ Field data (pottery, coins and inscriptions) collected during previous surveys¹⁴⁴ confirmed a dense occupation from the middle of the 1st century BCE to the 2nd century CE, but also until the Byzantine period.¹⁴⁵ Recent observations enable us to understand more clearly the organisation of the Nabataean-Roman occupation at the oasis, which comprised a main city surrounded by necropoleis and a series of small dispersed hamlets.

The main city developed in the central area of al-Malḥa on colluvial and conglomerate terraces located on the west bank of the wadi (Figure 16). We suppose a current urban area of approximately 26 ha (850 × 300 m), although extension of occupation below the modern village and

129. Flavius Josephus, *Antiquities* II.11. A more probable classical reference to this location of Madian in northwestern Arabia exists in a Greek version of the Hebrew Bible, in KERKESLAGER 1998, pp. 153-158.
130. ROBIN & GHABBĀN 2017, p. 375, note 37.
131. Ptolemy, *Geography* VI.7.
132. Eusebius, *Onomasticon*, p. 70 (Madiam: § 124, in Eusebius, and § 125, in Jerome).
133. They add that a second city of Madiam is located near Arnon and Areopolis, and whose ruins are still visible.
134. Ptolemy, *Geography* VI.7.
135. MUSIL 1926, pp. 114, note 30; 312.
136. FIEMA & VILLENEUVE 2018.
137. CASSEL 1966, vol. 1, pl. 245; vol. 2, p. 264; HASSON 1995, pp. 9-10, 13-14; ROBIN & TAYRAN 2012, p. 546 and fig. 1, 6-11 (inscription Murayghān 3 mentioning the conquest of Judhām by Abrahā, probably dated 552 CE). Cf. also §.
138. HASSON 1995, p. 36.

139. SCHIETTECATTE & ARBACH 2016, p. 6.

140. BOSWORTH 1984, p. 56.

141. HASSON 1995, pp. 20-25; see here p. 125, § 5. Jews lived in neighbouring Maqnā and signed a treaty with the Prophet (MUSIL 1926, p. 115 note 30; Wāqidi, p. 557). In the 9th century, Jews from the Beni Okbe tribe would still be present there (HASSON 1995, p. 25).

142. PARR *et al.* 1972, p. 33; GATIER & SALLES 1988, p. 176.

143. Notably, RÜPPEL 1829, pp. 219-220; PHILBY 1957; NEHMÉ *et al.* 2015; see also Figure 4.

144. Since 2017, 44 coins have been collected from al-Malḥa (42) and al-Malqāṭa (2). Approximately half of them were found on the ground's surface (21), and the others were discovered through excavation (mainly from Areas 1 to 3). Although highly eroded, Nabataean coins, as well as a silver Lagid tetradrachm, have been identified. A dozen additional coins were shown to us by a local informant (Maatiq Atiah Maatiq al-Omiri); among them were one tetradrachm (said to be from Qala'), one owl coin as well as four Nabataean coins, five Roman (2nd to early 4th centuries CE), one Mameluke and one that we were unable to identify (thank to T. Bauzou for his preliminary identification from photographs).

145. Notably, MILIK 1972; PARR *et al.* 1972, p. 33; INGRAHAM *et al.* 1981, p. 76, pl. 82 (site 200-83); LIVINGSTONE *et al.* 1985, pp. 141-142; ANSARY *et al.* 2002, p. 51; NEHMÉ 2003; NEHMÉ *et al.* 2015, p. 50, n. 98; BAUZOU 2016.



Figure 16 - The site of al-Malha, north and south beyond the mud-brick village; note also the hills of al-Aṣīfir in the background (© BDAP, photograph by K. Guadagnini).

to southwest where dispersed walls were found, is not excluded (Figure 17).¹⁴⁶

The soundings that reached the bedrock in Areas 1, 2 and 3 appear to show the beginnings of occupation of the sector in the second half of the 1st century BCE and a dense installation in the Roman to Byzantine period (2nd to 4th/5th centuries CE; Figure 18). The reason(s) for this apparently radical transition from the previous period remains enigmatic, but there is the suggestion of integration into the Nabataean kingdom and a phase of prosperity. Today the site is subdivided into two parts (northern and southern) by a small wadi.

1. **The northern part**¹⁴⁷ reveals a vast expanse of domestic and public buildings from the Nabataean to Byzantine period, extending at least as far as Tell 1 (and the early Islamic building) to the north.

Numerous remains of walls were found on the surface in this area along with a large cistern (approximately 25 × 20 m) made of granite blocks with a thick hydraulic coating, all of which are enclosed in a space approximately 180 × 70 m by a perimeter wall.¹⁴⁸

A deep sounding opened in Area 1 revealed a thick wall of large block that was reminiscent of the masonry

of Roman public building (Level 1).¹⁴⁹ On the upper level (2), sealed tombs, probably from the Byzantine period, indicate a change in the function of the area, after the Nabataean-Roman period and before the Islamic development.¹⁵⁰

Farther south, two large tells (2 & 3) display massive constructions. Tell 3 is particularly imposing with thick and long walls of uncertain function visible on its surface. On the nearby smaller Tell 2, the excavations (in Area 2) revealed an almost square (25 × 26 m) building (A) featuring 17 rooms in its upper phase (Figure 19). Three phases from the Nabataean (Phase 1) to the Byzantine period (Phases 2-3) were identified.

The deepest phase (1) was only excavated in a few rooms in the northwestern part of the building, but it could already evoke the typical South Levantine Roman “courtyard house.”¹⁵¹ It also yielded a private bathroom dating to the Nabataean period. The hydraulic architecture is composed of small contiguous basins, separated by a corridor, all of which are coated with white hydraulic plaster near a heating zone (*praeefurnium*). A bronze lamp with acanthus leaves and two dolphins was uncovered in a basin. This suggests that the building was probably devoted to the private accommodation of elite individuals, not far from their(?) monumental tombs. Phase 2, and to a lesser extent Phase 3 which is less known due to strong erosion, showed changes in the plan of the building and in circulation within it, and yielded a large quantity of complete domestic vessels, including large jars.

Farther east, in the area of Mughayr Shu‘ayb—but also certainly belonging to the same urban entity—we identified a possible Nabataean-Roman military fort, which has been largely destroyed by the modern road (Figure 20). Its western segment extends over 75 m and its northern limit over 40 m; the walls are 2 m thick. Standard bowls, cooking pots and NPFW sherds (Schmid’s phases 2a-c types) suggest a 1st-century CE date of function, but later use also remains possible. It would therefore well be put into relation with the discovery of a military document¹⁵² that mentions an auxiliary soldier in the al-Adafa area (Figure 3).¹⁵³ This could support the presence of Roman military detachments in the oasis, and possibly of some local administrations.

146. This question remains unanswered as the declassified Corona satellite imagery reveals no difference of extension of the southern tell (3) between the 1970s and today. We could, however, envisage a larger Nabataean occupation that had reduced in size by the Byzantine period.

147. A large area to the east was disturbed by a modern village and cultivated areas with *qanats* and wells. This village, built during the beginning of the 20th century, was investigated in 2018 (DARLES 2020).

148. The northern area around Tell 1 is covered by several recent Islamic tombs.

149. According to an inhabitant of the oasis, the fragmentary monumental Latin inscription coming from a public building and published by PARR (1970) was discovered 100 m east of this area.

150. See below.

151. KOLB 2000, pp. 277-296 (e.g. Oboda, Mampsis, Sobata); TOURTET & WEIGEL 2015.

152. A small lacunary metal plaque with Latin inscriptions on both sides.

153. See the contribution by F. Villeneuve in this issue.

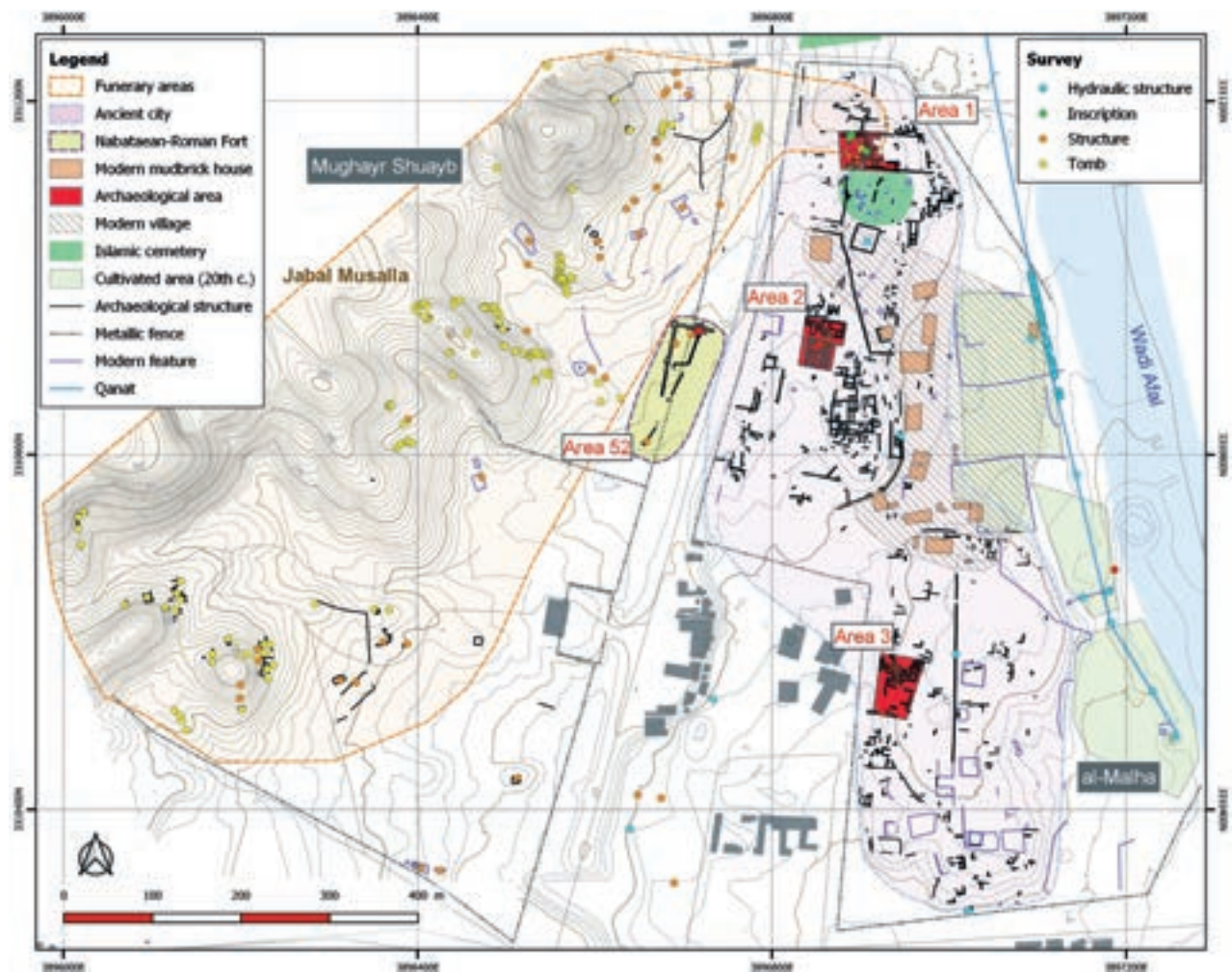


Figure 17 - Map of the central area of the oasis of al-Bad': Mughayr Shu'ayb and al-Malḥa (© BDAP, figure by G. Charloux).



Figure 18 - Nabataean Painted Fine Ware (NPFW) and Byzantine/Late Byzantine pottery from Areas 1 and 2 at al-Malḥa North (© BDAP drawings by J. Laroye; photograph by G. Charloux).



Figure 19 - General view of the building A in Area 2 (Tell 2) during excavations of the private Nabataean bathroom (© BDAP, photograph by B. Durand).



Figure 20 - A possible military fort at Mughayr Shu'ayb as seen from the air, showing the white lines of the main walls on the surface (© BDAP, photograph by K. Guadagnini).

2. *The southern part* of al-Malḥa (Tell 4, approximately 350 × 200 m) was probably the residential area during the Nabataean to Byzantine period (Figure 21). Below modern scattered breeding structures, the gypsum walls, which are more visible on the western half of the site, form the outlines of a residential compound of houses with small rooms that were roughly oriented to the cardinal points. A deep sounding identified four architectural levels in terraces. Although the traces of the oldest level have almost disappeared, Level 2 (eight phases) seems to go back to the Nabataean to Roman period (ca. 1st [and 2nd?] century CE; Figure 29: 30217), while Level 3 appears to date to the Roman to Byzantine period (3rd to 4th centuries CE, Figure 29: 30089). At the southwestern end of this tell, there is a circular mound 25 m in diameter that was once probably a tower and that may have delineated the edge of the residential area. A 190 m-long water channel in the centre of this area indicates water management at the site.

Another major component of the urban organisation of al-Bad' during the Nabataean to Roman period is evidenced by the presence of multiple necropoleis (Figure 1). The most well-known is Mughayr Shu'ayb, which runs for about 800 m along the eastern flank of Jabal Mūsālla (Figure 22) and which once extended north of al-Malḥa,¹⁵⁴ as indicated there by the discovery of Nabataean funerary inscriptions and Byzantine tombs. A Jewish-Palestinian funerary inscription in Aramaic (O.W10010-1/BDJPA1),¹⁵⁵ found reemployed in the masonry of the Early Islamic building in Area 1, evidences the construction of a tomb at least up until the 4th century CE, which could be put in relation with untouched tombs nearby.

At Mughayr Shu'ayb, 30 monumental tombs were identified (23 noted by Philby, groups B-D),¹⁵⁶ with two shaft tombs and 101 pit graves at the base of the massif, while small archaeological tells and structures, possibly towers, have been recorded to the east.

154. In the 14th century, Ḥimyarī, *Geography*, p. 676, § 25.34, describes the tombs of Mughayr Shu'ayb: they are "houses" carved into the rock (about 20 cubits in dimension), empty and marked by an unpleasant odour due to the presence of numerous bones.

155. See NEHMÉ & NORRIS in the next issue of this journal.

156. Among the 31 monumental tombs identified in the western part of al-Bad' (30 in Mughayr Shu'ayb and one in al-Aṣīfir), only 7 have rock-cut facade with sculpted decorations (around 5-6 m high and 3.5-4 m wide), 11 have undecorated facade and 13 tombs do not have preserved façades (BIGOT *et al.* in *preparation*). Most monumental tombs have a central chamber and occasionally a second one is found on one side. Rectangular loculi were cut into their walls and/or graves were cut into their floors. One unique aspect of these tombs is the presence of stepped features and benches to sit on at their entrance (NEHMÉ *et al.* 2015, pp. 50-51).



Figure 21 - The residential area (3) in at al-Malḥa South: deep sounding and surface clearing, looking northeast (© BDAP, photograph by G. Charlot).

Farther to the southeast, al-Aṣīfir's tomb field (approximately 500 × 340 m) extended the Nabataean-Roman necropolis (Figure 23). It includes the remains of one rock cut tomb¹⁵⁷ and more than 475 pit graves, many of which have been looted. Hewn into brown sandstone and sealed by white gypsum slabs, these rectangular pit graves are sometimes up to 2 m deep and could accommodate several individuals (adults and juveniles) on two (or more) levels.

Another previously unknown major pre-Islamic necropolis is located at Rudayda, as proven by archaeological and geophysical surveys. The 244 identified pit graves are similar to those found at al-Aṣīfir and post-date the Iron Age settlements which they cut into in several locales. A long partition wall (possibly more than 600 m in length) apparently separated the necropolis from contemporaneous living areas.

The image of al-Bad' during classical antiquity is that of a medium-sized urban agglomeration subdivided according to societal and hierarchical considerations and surrounded by necropoleis (Mughayr Shu'ayb, al-Aṣīfir, Rudayda) on both side of the wādī (Figure 24). Scattered hamlets, initially dated by surface pottery (in particular NPFW), complete the urban landscape of the oasis. At al-Aṣīfir, south of al-Malḥa, an ancient inhabited area covering about 180 × 110 m was dominated by thick terracing walls made of cobbles; this Nabataean-Roman area stood on the summit of an ancient alluvial terrace of conglomerate. To the east of Wādī 'Afāl, in the al-Burj area, a settlement featuring dwellings (400 × 200 m; 8 ha) was supplied by Sa'idni Well through water channels. Finally, another concentration of ancient domestic structures was discovered at Rudayda North, probably

157. PHILBY's group A (PHILBY 1957, p. 257).

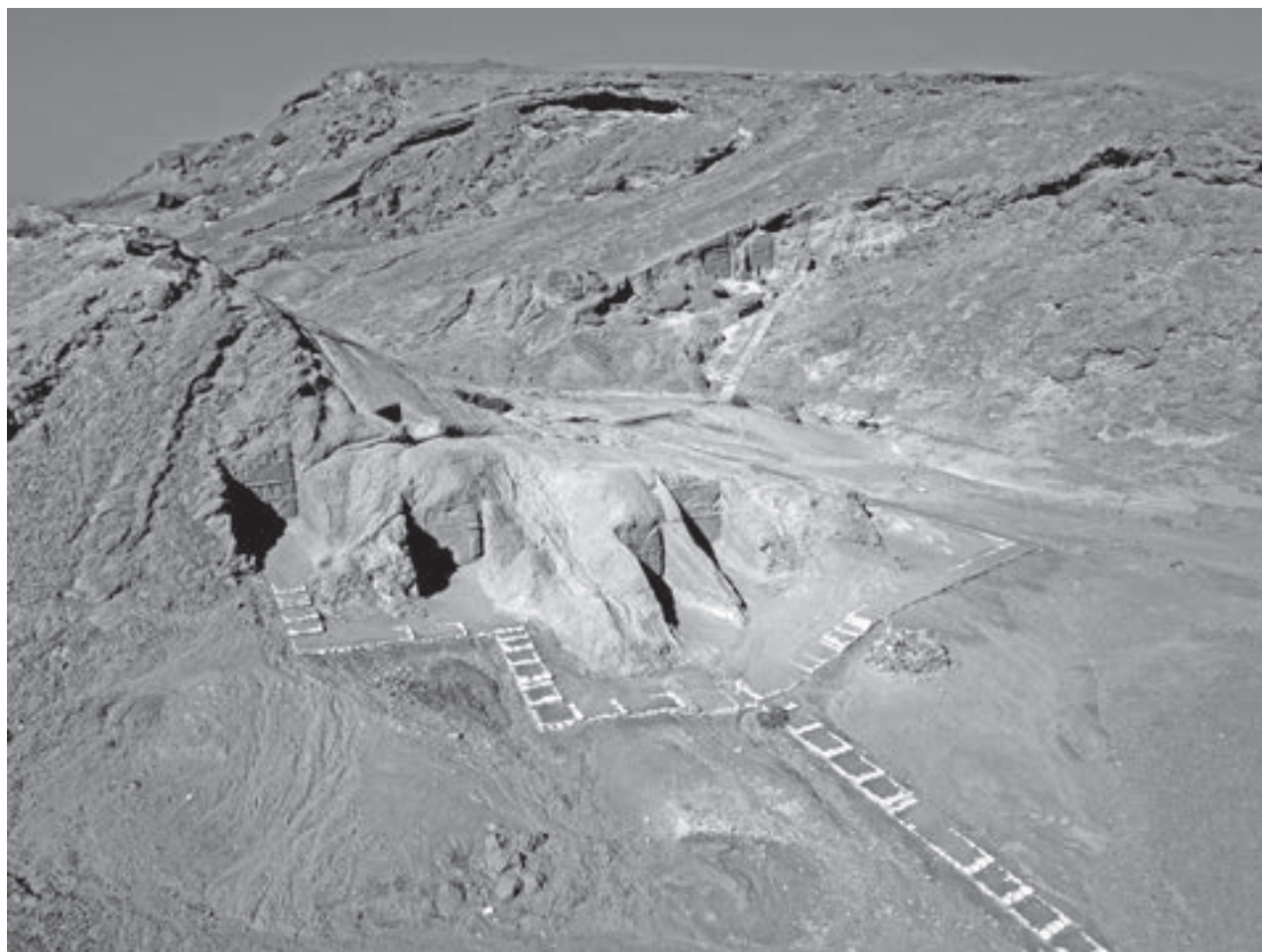


Figure 22 - The Nabataean tombs of Mughayr Shu'ayb at al-Bad' (© BDAP, photograph by K. Guadagnini).

extending towards al-Qala' West and measuring 850×40 m.¹⁵⁸ Gypsum quarries and a pottery kiln excavated in 2019 (SD503, Rudayda) support the presence of a work hop and production centre near the living quarters.

The agricultural zone in the Nabataean to Roman period was apparently even more developed than it is today, in particular on the eastern bank of the wadi, as confirmed by the presence of a water channel 460 m long in the area of al-Adafa (Figure 3). It is in this area that NPFW sherds and the 142 CE military document¹⁵⁹ were found adjacent to the agricultural partition walls.

158. With the exception of the al-Aṣīfir settlement, which features a large amount of Nabataean-Roman pottery retrieved from the surface, these two later sites have not yet been firmly dated. The present interpretation is based on the type and method of the construction of the walls, and on a few undiagnosed pottery sherds.

159. See VILLENEUVE in this issue.

From this description, it may be seen that al-Bad' shares many similarities with the oasis of Hegra.¹⁶⁰ Both of these oasis-cities are located in natural cirque, intersected by a wadi, and stand in the centre of a wide alluvial plain surrounded by necropoleis. Situated in a hyper-arid environment, they developed comparable water-management and agricultural strategies,¹⁶¹ while small hamlets/farms and cultivated areas consisting of palm groves and gardens were located on large alluvial terraces outside the city. Like Petra, they reached their zenith during the 1st century and the first half of the 2nd century CE under Nabataean and Roman rule,¹⁶² and were later

160. NEHMÉ *et al.* 2006.

161. Water was provided by shallow aquifers; see NEHMÉ *et al.* 2006.

162. FIEMA & NEHMÉ 2015, pp. 394-395.

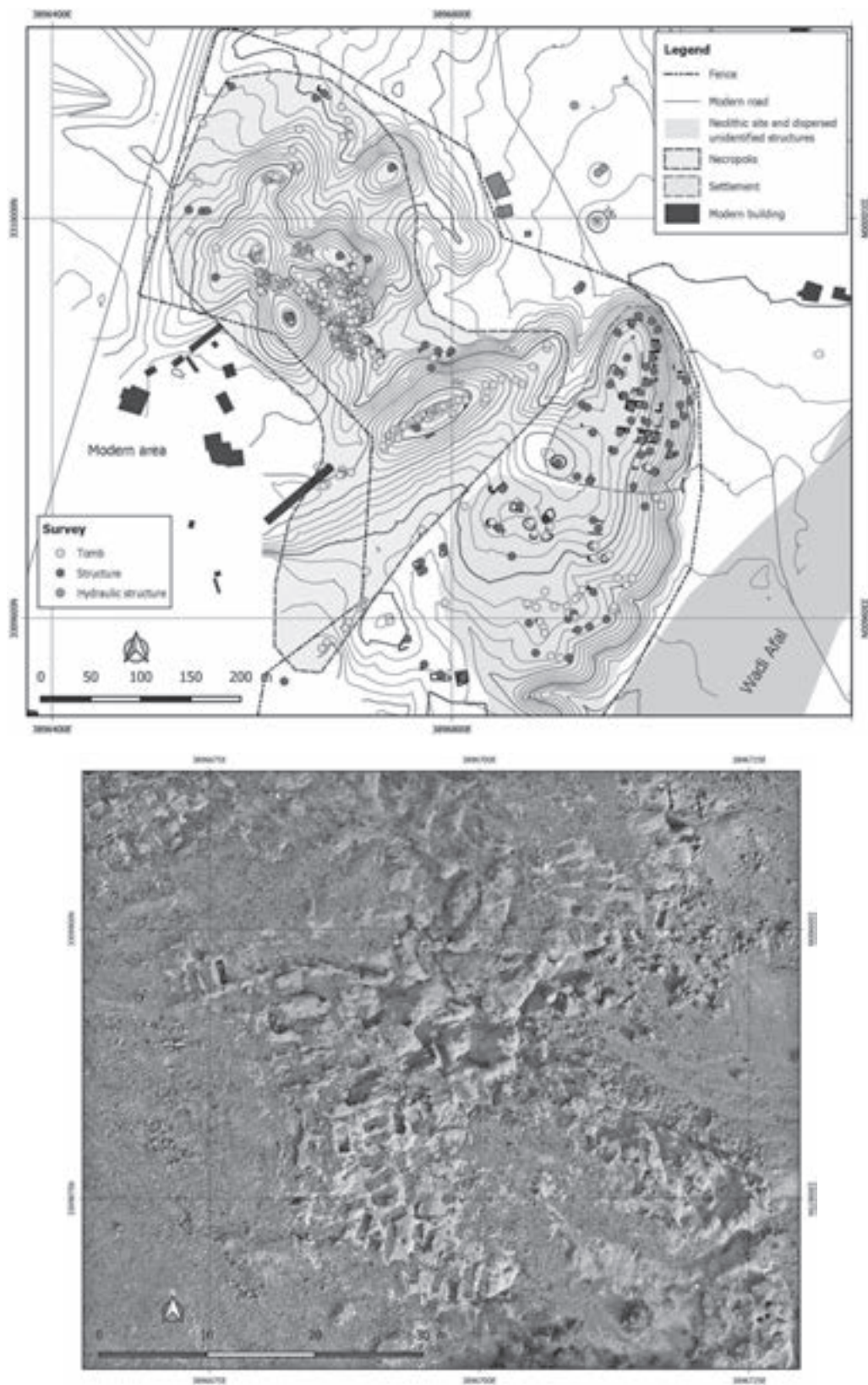


Figure 23 - Distribution map of the archaeological structures at al-Aṣṣīfir (© BDAP, map by G. Charloux using PLEIADES © CNES, 2017, distribution Airbus DS); Aerial view of the Nabataean pit-grave field (© BDAP, photograph by FalconViz).

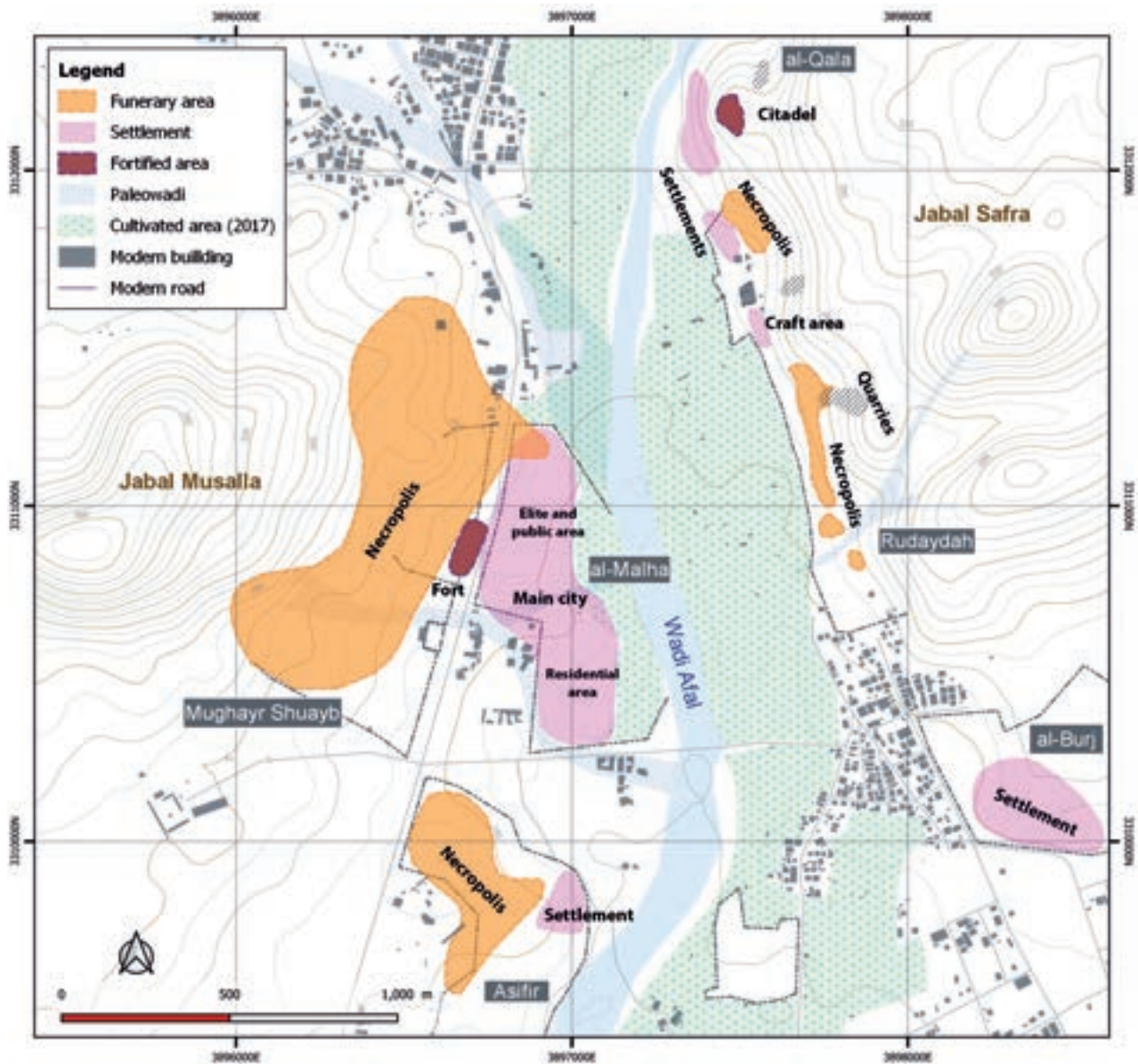


Figure 24 - The main functional areas at al-Bad' oasis during the Nabataean to Roman period, perhaps until the Byzantine period (© BDAP 2021, figure by G. Charloux).

revived during the Byzantine period.¹⁶³ The extent of the settlements at al-Bad', which were then opened to commercial and craft activities, confirm the importance of the site during the Nabataean to Byzantine period. If we consider its main dynamic period, the inhabited part (approximately 45 ha, all inhabited areas combined) is

much smaller than that of Petra (approximately 75 ha) and Hegra (52 ha).¹⁶⁴ It having a status of *civitas*—a small provincial town—comparable to that of Hegra¹⁶⁵ is not

163. In contrast to Petra and Bosra (FOURNET *et al.* 2002; PARR 2007), there is no staging of the public space of the city at Hegra by typical Roman monuments.

164. It is larger than most Nabataean-Byzantine towns in the Negev and Jordan: Mampsis (4.1 ha), Oboda (8.5 ha), Nessana (17 ha), Ruheiba (10.3 ha), Shivta (8 ha), Khirbet Tannur/Dharih (9.6 ha), with the exception of Humayma (approximately 40 ha).

165. FIEMA & NEHMÉ 2015, p. 379.

excluded, although that designation is uncertain.¹⁶⁶ The presence of public buildings—evidenced by the block photographed by Parr in 1968,¹⁶⁷ by a fort and a probable citadel (al-Qala‘)¹⁶⁸—as well as differentiation of living areas (north/south) according to dwelling types and monumental tombs,¹⁶⁹ but also the presence of refined and abundant material culture, indicate that the oasis of al-Bad‘ hosted local elites and functioned as the seat for administration. It was therefore an important regional political power during the Nabataean and Roman periods.¹⁷⁰

The excavations at al-Malha confirm the existence of a dense urban area until the Byzantine period (at least to the 4th century, but possibly later). The construction of a *nefesh* (monument marking a grave or burial) in 326 CE¹⁷¹ could support the possibility of the continuing presence of a local elite in this period, as seen at Hegra and Taymā‘.¹⁷² After a gradual decline during the Byzantine period in the 4th (and perhaps 5th) century, the oasis was seemingly abandoned prior to the rise of Islam, according to Ghabbān, which would explain why only Ayla and Maqnā were mentioned in the accounts of the Muslim conquest.¹⁷³ Al-Bad‘ would thus ultimately share the fate of other great “Nabataean-Roman” oases of Northwest Arabia.¹⁷⁴

The stationary remains and portable artifacts collected during fieldwork suggest a city that was well-connected to trade networks in this period. Spices and aromatics from harbours on the eastern side of the Red Sea were transported between ‘Aynuna, 40 km to the south,¹⁷⁵ and Ayla/‘Aqaba, 120 km to the north, via al-Bad‘. Al-Bad‘ also provided access to the Gulf of ‘Aqaba through the smaller town of Maqnā, which probably functioned as its

own harbour.¹⁷⁶ Although the difficulty of sailing in the Gulf of ‘Aqaba was repeatedly raised,¹⁷⁷ such a harbour enabled maritime exchange network to develop,¹⁷⁸ while products from the sea were easily accessible. Al-Bad‘ also benefitted from the presence of mining resources in the region, among them copper, iron, lead, silver and gold.¹⁷⁹ Turquoise was also found in a ravine between al-Bad‘ and Jabal al-Lawz,¹⁸⁰ while we know that precious stones were exported to Egypt from Arabia at least from the 3rd century BCE, as suggested by Posidippus’ epigrams.¹⁸¹ Local building developments were also facilitated by the presence of a marble quarry at Jabal al-Lawz and a nearby Nabataean workshop of undetermined use from the late 1st century BCE to the 1st century CE,¹⁸² while recent surveys show the presence of gypsum quarries at Rudayda, which provided material for structures on the opposite side of the valley.

All of the archaeological evidence points to the prosperity of the oasis at the start of the first millennium CE and its increased regional influence on the caravan network from the end of the previous millennium. Ayla correspondingly began to develop at the turn of the millennium, perhaps in response to the intensification of Roman maritime trade in the Red Sea, or at least as a result of the increased traffic on the route between Leuke Kome and Petra.¹⁸³

■ 5/ MADYAN: THE OASIS OF AL-BAD‘ DURING THE ISLAMIC PERIOD

Textual sources

The identification of Madyan with al-Bad‘, which comes from Arab-Islamic textual sources,¹⁸⁴ is certain. It is confirmed by the 9th-century Arab scholar al-Ya‘qūbī, who specified that Madyan is located on the pilgrimage

166. Elusa, with its 35 ha, was designated as a *polis*, but in the political context of *Phoenicia* (RUBIN 1996, p. 51).

167. See VILLENEUVE in this issue.

168. Still in use according to the preliminary assessment of the pottery.

169. 31 monumental tombs in al-Bad‘ against 131 (94 decorated) in Hegra and more than 650 in Petra

170. Diodorus and Strabo inform us that the shore of the Laianites Gulf was densely inhabited by many Arab villages, and their inhabitants called Nabataeans (Diodorus III.43; Strabo XVI.4.18). As this assumption comes from Agatharchides (RETSÖ 2003, p. 297), al-Bad‘ was already part of this network of villages prior to the 1st century CE.

171. See NORRIS & NEHMÉ in the next issue of this journal.

172. NEHMÉ 2009, p. 49.

173. GHABBĀN 2011, p. 202.

174. This hypothesis does not contradict NAPPO’s theory of a shift in maritime influence from Leuke Kome to the island of Iotabê (probably the island of Tiran, see MAYERSON 1992 and 1995) during the Byzantine era (NAPPO 2015). It is, however, possible that trade gradually moved away from the overland route in the 4th through 6th centuries CE, which would explain the decline of al-Bad‘, perhaps in favour of its port Maqnā.

175. Studied by a Polish team since 2014; see JUCHNIEWICZ 2017.

176. A Roman installation preceded the fort at al-‘Awayssha in Maqnā, according to PARR *et al.* 1972, p. 35.

177. MAYERSON 1992, 1995.

178. It is worth mentioning that the region remained a hub for illicit traffic for a long time, with the Nabataeans’ involvement in piracy referenced by Diodorus (II.48) and Strabo (XVI.4.18).

179. See KISNAWI *et al.* 1983, p. 82, pl. 79. Gold was mined in Arabia and was an important source of wealth for the Nabataeans, according to Diodorus (II.50) and Strabo (XVI.4.26), as it was prior to that for the Madianites (Numbers 31.50-54; Judges 8.26).

180. PHILBY 1957, p. 213 and site 200-1005.

181. Posidippus, *Lithika*, AB 7; GRAF 2006, pp. 53-57.

182. ANSARY *et al.* 2002, pp. 63-71.

183. Strabo XVI.4.24; PARKER 2007, pp. 687-688.

184. We refer in particular to MUSIL 1926, pp. 279-282; ANSARY *et al.* 2002, pp. 21-23; ROBIN & GHABBĀN 2017.

route between Egypt and Mecca, more precisely between the stations of Sharaf al-Ba'al¹⁸⁵ (south of Ayla and Haql) and 'Aynuna (on the Red Sea south of al-Bad', Figure 2).¹⁸⁶ Contemporaneously, Ibn Khordadbeh also placed it at distance of two stations south of Ayla.¹⁸⁷ This location corresponds precisely to the current position of al-Bad', especially as there is no other major city in the vicinity. According to al-Iṣṭakhrī, writing in the 10th century CE, as well as al-Idrīsī, in the 12th century CE,¹⁸⁸ Madyan is located on the Red Sea (Colzum Sea), this time five stages from Ayla and six stages from Tabūk.¹⁸⁹

Al-Ya'qūbī describes Madyan as an ancient and prosperous city with numerous springs of pure fresh water, but also gardens and palm groves. It also featured a large and mixed population.¹⁹⁰ According to Arab-Islamic sources, Madyan belonged to the territory of Judhām in the Early Islamic period.¹⁹¹ Ibn Ishāq thus related that, at the time of the Prophet, Zayd bin Hāritha carried out a raid there against Judhām, in particular against the harbour of Maqnā.¹⁹² Despite its initial support of the Christian emperor, the Judhām tribe played an important role under the Umayyads.¹⁹³ Numerous graffiti in Kufic, discovered in the region of Bajda and Qā' Bani Murr, east of al-Bad' on the road leading to Tabuk, may also highlight the popularity of the route at the beginning of the Islamic era.¹⁹⁴ In the 10th and 11th centuries, Madyan, still belonging to Judhām,¹⁹⁵ is described as a larger city than Tabuk by al-Iṣṭakhrī and al-Bakrī.¹⁹⁶ It was probably a trading centre for northwestern Arabia.¹⁹⁷

This depiction of the city seems, however, to conflict with later representations, notably by al-Idrīsī in the 13th century, who describes it as poor and without commerce.¹⁹⁸ In the 14th century, the geographer al-Ḥimyarī mentioned the presence of foul-smelling tombs dug into the

rock (Mughayr Shu'ayb), as well as archaeological tells, vestiges of a vanished population.¹⁹⁹ In the 15th century, al-Maqrīzī suggested that "here are still wonderful ruins and gigantic columns."²⁰⁰ These descriptions appear, however, to be mostly paraphrased from earlier sources. One of the most compelling arguments for the abandonment of the site around the 11th to 12th centuries CE would therefore be the appearance of the toponym of Mughayr Shu'ayb in place of Madyan in the 13th century CE when pilgrimage resumed via this route.²⁰¹ Much later, perhaps as late as the 20th century, the oasis appears to have been occupied by inhospitable nomads (Masaid tribes) living in tents.²⁰²

Archaeological vestiges

Early Islamic period

At our present stage of knowledge, two sites currently indicate sedentary occupation at the oasis of al-Bad' during the Early Islamic period: al-Malqaṭa and al-Malḥa North (Figure 3).

Small in size (220 × 230 m), al-Malqaṭa site²⁰³ (Figure 25) has suffered the flash floods of the Wādī 'Aḫāl to the north and has been disturbed by the construction of modern settlements. Its position on a flat alluvial, Holocene terrace in the middle of the palaeo-wadi suggests priority was given to the cultivation of the agricultural areas located near the site. It features an Islamic fort (approximately 70 × 70 m) with circular towers, a wide rectangular cistern (36 × 36 m), as well as stone dwellings on the western half of the site and a mud-brick rampart. Two stratigraphic soundings were opened in the residential area in the 1980s, and two additional ones in 2019 (soundings 530-531). According to Ghabbān, the area experienced Islamic occupation between the 7th and 12th centuries.²⁰⁴ Sounding 531 revealed six main phases above the geological substratum, 2 m below the surface.²⁰⁵ The lower phase (1), which revealed material from the time of the Prophet, goes back to 599-648 CE according to the ¹⁴C dating of a charcoal sample (Figure 26; Figure 29: 531-34).

185. Or al-Sharaf/Sharaf al-Nam. For further details about this toponym, see GHABBĀN 2011, p. 110.

186. Ya'qūbī, p. 441.

187. Ibn Khordadbeh, p. 510 (between Hafa and Ela'rā, unknown toponyms but located south of Ayla).

188. Idrīsī, *Geography*, p. 333; Iṣṭakhrī, p. 20.

189. This is also evidenced by the descriptions reported by Yaḳūṭ al-Hamawī, vol. 1, p. 825, vol. 4, p. 451. Abū l-Fidā, p. 118, explains that the city is located to the west of Tabuk in the 14th century.

190. Ya'qūbī, p. 441.

191. See also §4.

192. Ibn Ishāq, *The life of Muhammad*, pp. 662-664; Bakrī, *Geography*, p. 1201.

193. HASSON 1993.

194. ANSARY *et al.* 2002, pp. 53-59 §27- 19 (Arabic)

195. Bakrī, *Geography*, p. 1201.

196. Iṣṭakhrī, p. 20; Bakrī, *Geography*, p. 1201.

197. According to al-Qazwīni, as is mentioned by MUSIL 1926, p. 281.

198. Idrīsī, *Geography*, p. 333.

199. Ḥimyarī, *Geography*, pp. 676, §5.34.

200. Maqrīzī (1900), p. 540.

201. In particular, GHABBĀN 2011, pp. 110-111; see also note 18.

202. BURTON 1879a, p. 87, counted around 70 tents. See also RÜPPEL 1829, p. 219; PHILBY 1957, pp. 216-217. GHABBĀN 2011, p. 203, also noted al-Jaziri's 16th-century depiction of al-Bad' as "an oasis inhabited by Bedouins."

203. The site was described by MUSIL 1926, p. 118; PHILBY 1957, pp. 216-17; ANSARY *et al.* 2002, pp. 36-37.

204. GHABBĀN 2011, pp. 201-209 §21- 30.

205. Surprisingly, a few NPFW sherds (Schmid's phase two), apparently not related to the site's occupation, were collected from the ground's surface and could indicate the previous extension of the cultivated area during the classical period.



Figure 25 - Aerial orthophotograph and map of the Islamic site of Malqata (figure by FalconViz and G. Charloix).

Primary impressions suggest this site was a hamlet under military protection rather than a planned town.

The construction of a much larger contemporaneous building on the western bank of Wādī 'Afāl at al-Malḥa North, at a distance of more than 1.2 km, raises questions about the link maintained with al-Malqāṭa. The rectangular structure, about 80 × 40 m, is located in Area 1 (Tell 1). It is made of coral limestone blocks and mud-bricks on older gypsum foundations. It consists of a large central rectangle with rooms and corridors (Figure 27).²⁰⁶ The communal nature of the construction seems likely from the long corridors and the surrounding wall, but the entire layout still needs to be better substantiated. The function of this building also remains unknown. The dating of the upper level to the beginning of the Islamic period is supported by pottery analysis.²⁰⁷ Immediately to the north,

irregular stone foundations of possible dwellings seem to be related to the Early Islamic building, as suggested by some circulation paths that appear on the aerial images. These initial findings indicate the presence of a second (perhaps larger) Early Islamic village in this area.

The pilgrimage station

During the Islamic period, and until the establishment of the first mud-brick villages of the 20th century (al-Malḥa and Disa),²⁰⁸ the only settlement site at the oasis seems to have been the pilgrimage station of al-Burj located south of Jabal Ṣafra (Figure 28). The continuity of occupation of the site remains uncertain, however.

Today, the sector is enclosed by metal fence that measures 700 × 500 m, but the Islamic-period site was

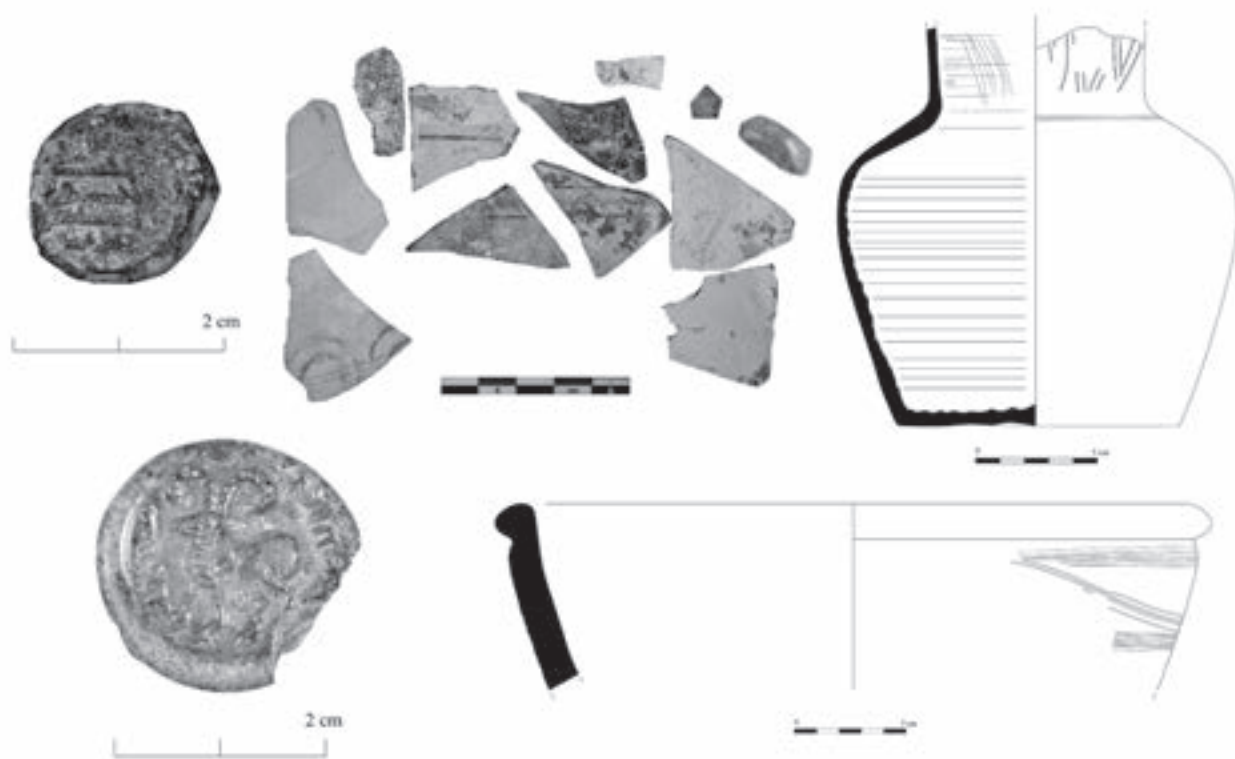


Figure 26 - Early Islamic artefacts from al-Malqāṭa (soundings 530-31: coin, glass ware, button base of a glass vase displaying ibex and bismillah inscription, pottery from phases 1 (bottom, basin, Early Islamic period) and 4 (top, jug, Abbassid period) (drawings by J. Laroye; photographs by S. Sahlah). Thank to G. Chung-To for his expertise.

206. It was previously thought to be a courtyard surrounded by small rooms.

207. Carried out by S. Marchand (IFAO). The date is further supported by the *terminus post quem* of the 4th-century

inscription (O.W10010-1/BDJPA1), which was reused in the masonry of a wall of this level.

208. DARLES 2020.

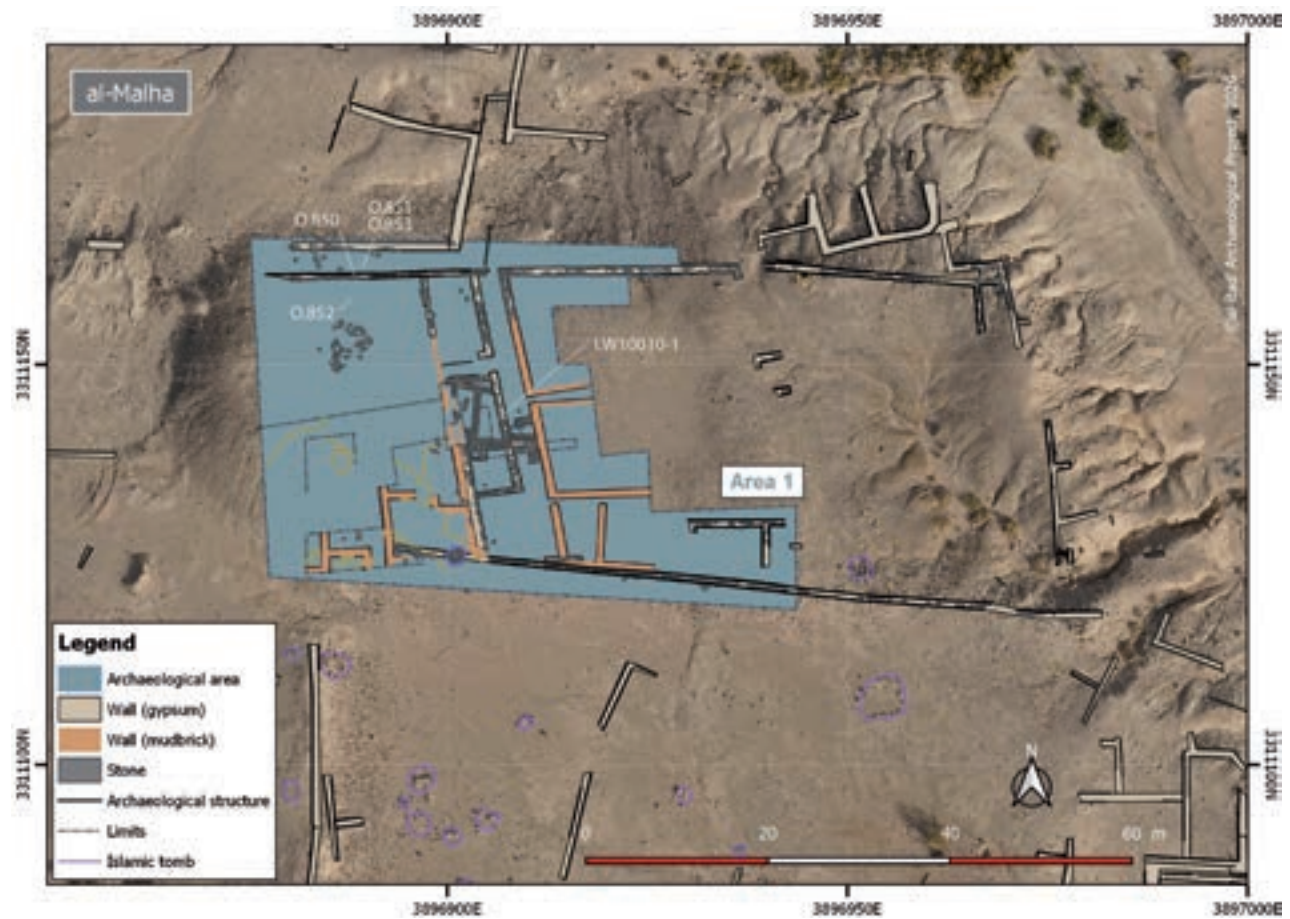


Figure 27 - Al-Malha North: a large Early Islamic building in the northern part of al-Malha, Tell 1 (©BDAP, drawing by G. Charloux; photograph by FalconViz).

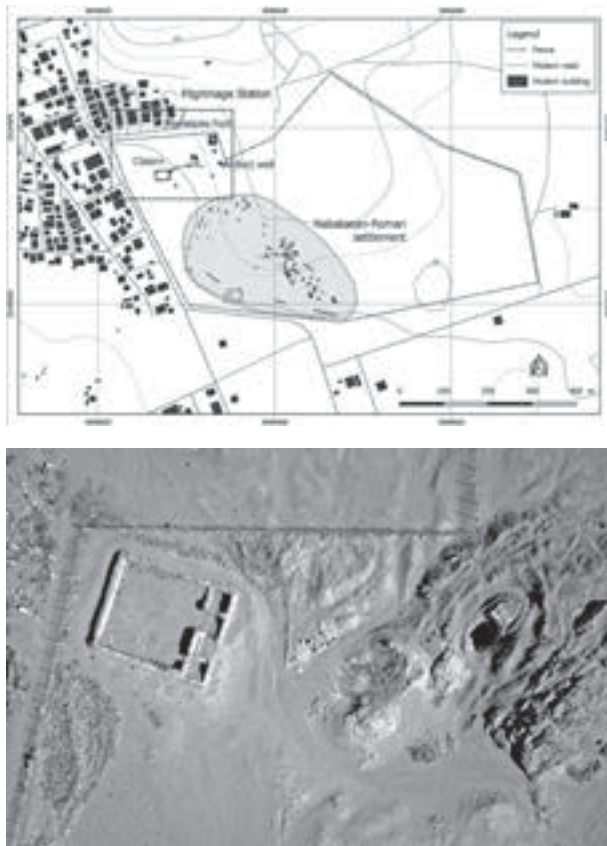


Figure 28 - Preliminary map of the al-Burj area (top) and Sa'idni well near the Mameluke fort (© BDAP, drawing by G. Charloux photograph by FalconViz).

much smaller (160 × 100 m). It was organised around the rock-cut well Bi'r Sa'idni (approximately 4.6 m in diameter),²⁰⁹ which is thought to be the place where Moses drew water and met his future wife Sephora, Jethro's daughter. This well was surmounted by a stone installation in the 10th century CE, according to al-Iṣṭakhrī.²¹⁰ The stone wall surrounding the perimeter of the well is still clearly visible (Figure 28). From the base of the well, a water channel²¹¹ led to a large cistern (32.5 × 22 m), which shows signs of multiple renovations.

A square fort (approximately 21 × 17.5 m), with a well-preserved elevation, was built to the north of the well, in order to protect the area and possibly to welcome pilgrims and their beasts of burden at night. It was recently excavated by W.A. Badaiwi, who discovered a restoration

inscription dating from 1415 CE²¹² that commemorated the investment of Mameluke sovereigns on the Hajj road and at al-Bad' since the 13th century.²¹³

The distinction proposed by the various textual sources between a prosperous "city" in the early days of Islam (Umayyad to Abbasid eras: 7th to 11th centuries) and a town in decline (during the 12th to 20th centuries) somewhat corresponds with the archaeological evidence so far. A marked reduction of the occupied area in the Early Islamic period attests to the transition of the role of oasis, gradually diminishing from small hamlet with a fort (al-Malqaṭa) in the alluvial valley and a possible agrarian village at al-Malḥa North to a Mameluke-Ottoman pilgrimage station (al-Burj). This image echoes that of 'Aqaba during the Islamic period.²¹⁴ The prosperity of this latter oasis declined, possibly following a major earthquake that hit the region in the 11th century.²¹⁵ The successive conquests of 'Aqaba by the crusaders during the 12th century must also be considered as a cause for the interruption of the trade route to al-Bad'.²¹⁶ The resumption of trade traffic during the Mameluke era was not, however, sufficient to allow the development of a sustainable village area.

It is not until the 20th century that mud-brick villages were built on top of the ancient site of al-Malḥa, on the northeastern bank of the wadi (and perhaps in the Disa area, west of al-Burj). These villages were later abandoned and/or replaced by the modern city of al-Bad', at the northwestern and southeastern ends of the oasis. Eventually, the town of "New al-Bad'" was created a few years ago, 6.5 km south of the oasis, and represents a major shift in the occupation at the site.

6/ DISCUSSION

Compared to the other oases of Northwest Arabia, al-Bad' presents a rather exceptional sequence of development, one that covers periods and types of settlement almost unknown today in the region (Figure 29), in particular the Late Neolithic site of al-Aṣṣīfir (period 1), the domestic installations at Rudayda in the late fourth millennium BCE (period 2), and the Iron Age to Hellenistic-period sites (periods 3-4). The citadel of al-Qala' (periods 3-5), which will be more difficult to excavate but very well preserved,

209. See Figure 4 and RASHID 2003, pp. 168-169.

210. And also much later by PHILBY 1957, p. 214; as well by al-Jaziri according to ANSARY *et al.* 2002, p. 34.

211. Another water channel cut into the bedrock and running to the south towards a long drain possibly leads to the "Nabataean-Roman site."

212. BADAIWI 2014.

213. GHABBĀN 2011, p. 112.

214. WHITCOMB 1994, pp. 8-9.

215. *Ibid.*

216. The crusader raids of Renaud de Châtillon at the end of the 12th century, notably by land towards Taymā' and then on the Red Sea, could have had considerable consequences for security and regional trade (Idrīsī, *Geography*, p. 131; MALLETT 2008; GHABBĀN 2011, p. 203).

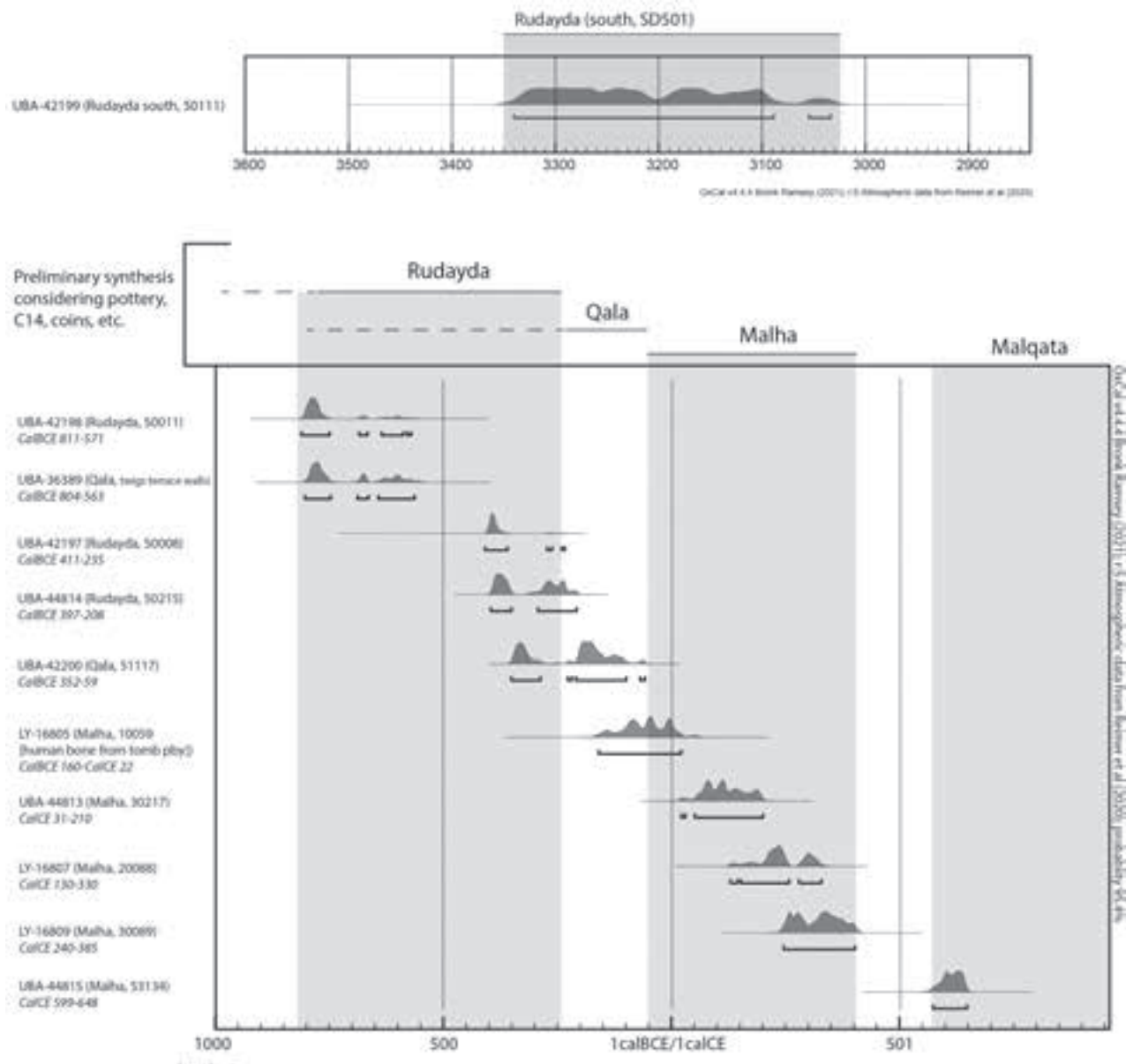


Figure 29 - ^{14}C dating of the sites at al-Bad' oasis. Top: Rudayda SD501 (period 2, EBA1); bottom: Rudayda SD500/502 (period 3, Iron Age), al-Qala' (periods 3 to 4: Iron Age and Hellenistic period), al-Malha (period 5: Nabataean to Byzantine period), al-Malqata (period 6: Early Islamic period) (© BDAP, figure by G. Charloix).

constitutes a major point of reference in the region and is reminiscent of the nearby fortified site of 'Aynuna. The archaeological and heritage potential of al-Bad' is also evident with regard to the Nabataean and Byzantine installations (period 5): the villas, urban areas and public monuments (notably the fort) were an abundant source of artefacts and well-preserved architectural remains, as was also the beginning of the Islamic period (period 6: al-Malqata fort and the al-Malha building, then period 7: al-Burj). The impressive extent of the necropoleis and

the discovery of undisturbed graves should enable better understanding of funerary practices in the region, at least during the "classical" period. Finally, the discovery of a system of qanat and long-distance surface water channels (al-Adafa), as well as the architectural examination of a 20th-century village (period 8 in al-Malha, then periods 9 and 10: modern and contemporaneous cities), complete this initial investigation and allow us to analyse the relationship between the environment context and human settlement at the oasis.

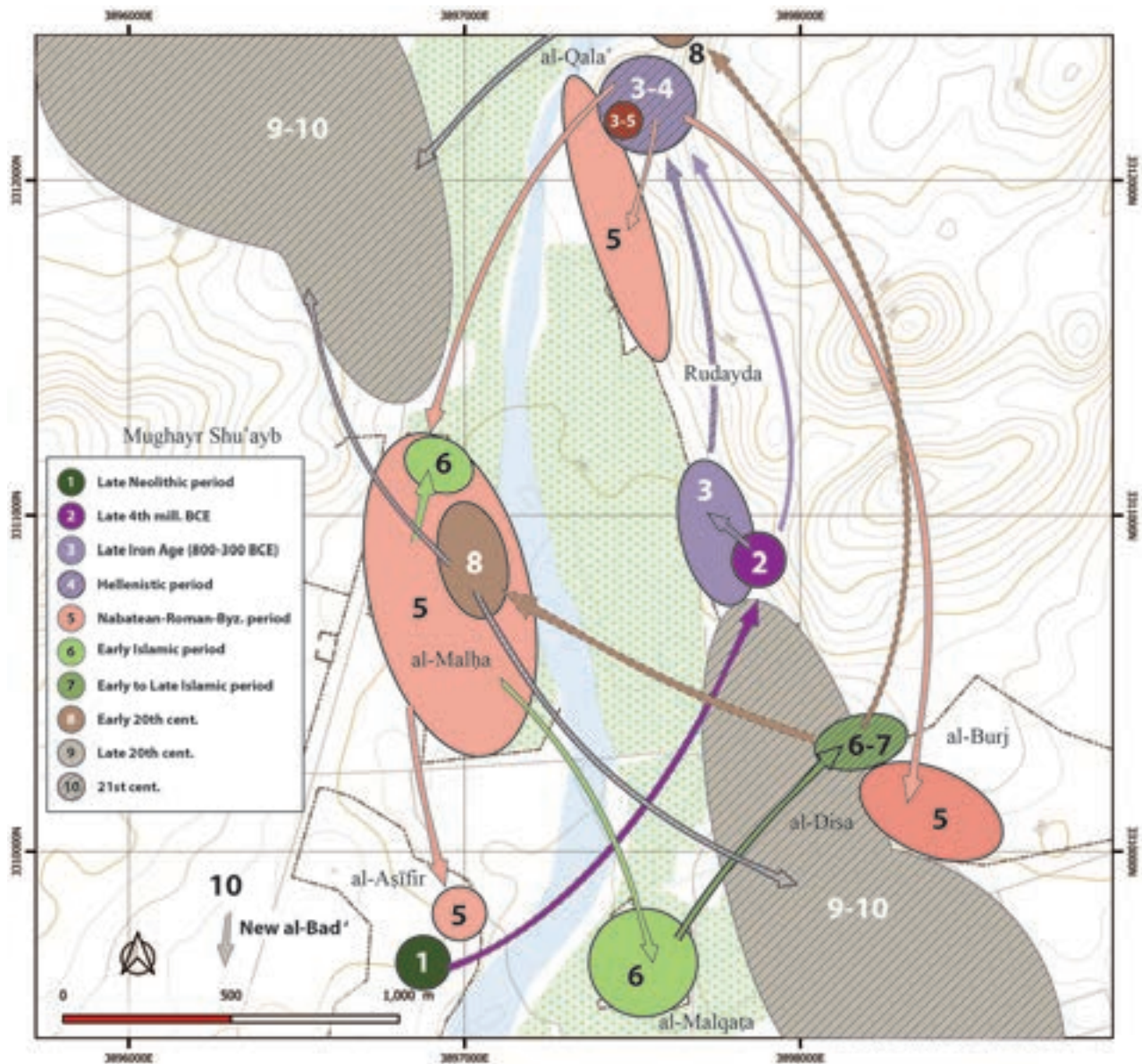


Figure 30 - Schematic map showing the shifts of settlements (necropoleis excluded) at the oasis of al-Bad' over time; the dashed arrow indicates a hiatus (figure by G. Charloux).

In brief, ten preliminary periods of occupation (1 to 10) have been identified, although there are important gaps (Figures 29-30). These shifts in human occupation, revealed through ¹⁴C dating, preliminary studies of artefacts and stratigraphic analysis, show a general picture of long-term changes at al-Bad' that is mirrored at other northwestern Arabian oases.²¹⁷ In actuality, it is discerned through horizontal stratigraphy that may be explained by

various socio-economic and environmental factors. These include aridification and changes in water supply (e.g. at the al-Burj area), sanitary conditions (especially malaria),²¹⁸ cultivation on alluvial ground and flat and uniform surfaces²¹⁹ (al-Malqata, al-Adafa), defence (al-Qala' East), monitoring (al-Qala' citadel), growth of trade and

ephemeral installations (e.g. WHITCOMB 1994; PARKER 2007; KHALIL & SCHMIDT [eds.] 2009).

218. PHILBY 1957, p. 212.

219. Interestingly evoked by GHABBAN 2011, p. 202.

217. Ayla/Aqaba, the "oasis by the sea," has also experienced similar shifts of occupation and periods of abandonment or

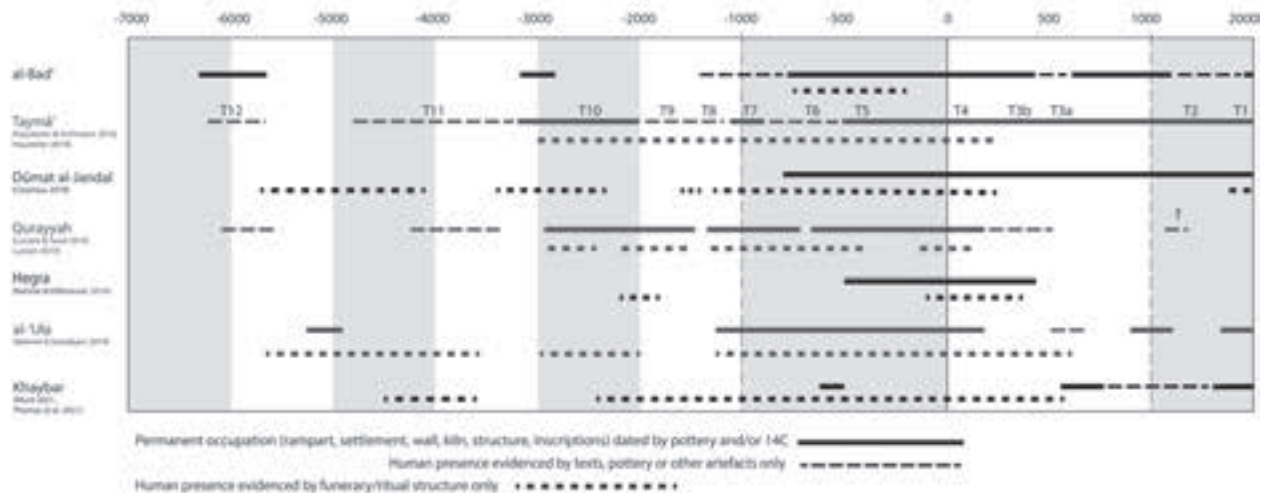


Figure 31 - Schematic diachronic map comparing the shifts in human occupation at the oasis of al-Bad' with other northwestern Arabian oases in late 2020 (figure by G. Charloux).

centralisation of administration (al-Malḥa), acquisition of raw material (quarries at Rudayda and lithic production at al-Aṣīfir), and political imposed tentative of sedentarism (the 20th-century village of al-Malḥa).²²⁰ Although these appear to be basic function, many other explanations are possible. The threat and effects of earthquakes must be considered as an important factor for a possible population shift or abandonment of the region, as observed at 'Aqaba.²²¹ Foreign invasions, in particular during Ptolemaic times also,²²² cannot be ruled out either during what was a period of strong economic competition in the region.²²³ Another major factor, of local origin this time, was probably the development of modern pumping methods in the mid- and late 20th century alongside drilling for water. Such advances heralded significant alterations to the lifeways of the people there, with an increase in population size, but also the salinisation of soils and the loss of knowledge about ancient water-management. Indeed, this last factor explains the largest extension of the settlement and cultivation areas that occurred from the second half of the 20th century onwards.

With reference to recent publications, several oases in northwestern Arabia have provided evidence for almost continuous occupation, notably at Taymā' and Qurayya, since the third millennium BCE, and probably also at Dūmat al-Jandal, al-Bad' and al-'Ula since at least the first millennium BCE. This picture of a continuity in occupation,

viewed through a long-term temporal prism,²²⁴ should not, however, exclude the possibility of ephemeral or reduced levels of settlement (especially including tents), which hardly leave any recognisable archaeological traces.²²⁵ Such an explanation could account for the situation encountered at al-Bad' in the Bronze Age/Iron Age, as well as in the 5th century CE, in the 12th to 13th centuries CE, and in the 16th to 19th centuries CE. The nomadic/semi-nomadic populations of the desert undoubtedly played a key role both in the settlement of oases as well as in the medium- and long-distance connections between societies in the Arabian Peninsula, during or outside periods of sedentary lifestyle.²²⁶

Overall, the development model for the oases of Northwest Arabia seems to include relatively regular phases of sedentary settlement and intermittent transitory occupation by of nomadic/semi-nomadic populations of the desert. This cycle was not immutable, but can occasionally come to an end, with short abandonments,²²⁷ or lead to permanent desertion of oases as for example in the event of the drying up of aquifers.²²⁸ We can thus deduce essential factors in the sedentary and urban development of the oases:

224. EDENS & BAWDEN 1989; see also CHARLOUX 2018.

225. See note 202.

226. See LUCIANI 2016.

227. PARR 1988. The phases of abandonment of the oases are often difficult to confirm, as the slightest discovery considerably changes the diachronic view of human occupation at the oasis.

228. CHARLOUX *et al.* 2018.

220. DARLES 2020.

221. KORJENKOV & SCHMIDT 2009; see also FNAIS *et al.* 2016.

222. RETSÖ 2003, pp. 294-295; GRAF 2006, pp. 55-56.

223. PARKER 2007.

- To manage a sustainable water supply for the purposes of agricultural production and the development of the resident population.
- To attract and benefit from caravan trade in a medium- and long-distance trade network (thereby safeguarding against recurring dangers by taking advantage of external technological products and innovations).
- To stabilise the social order²²⁹ at the oasis via the presence of a local power group (or even a political/military elite or administration), one that potentially operated within a larger state entity that would have a specific interest there.

CONCLUSION

Madian seems to have changed in nature or to have known several iterations in the course of its history.

As shown by our research, archaeological evidence has so far only revealed minute traces of human occupation at al-Bad' at the end of the second millennium BCE, which hardly supports the theory that it played a major political role at that time.

Whatever may be the exact translation of the Robin-Ghabbān inscription found near Taymā' (Figure 7) it testifies to the influence of Madian during the first half of the first millennium BCE, after the end of production of Qurayya Painted Ware (SQPW and CQPW). At that time the sites in Rudayda and al-Qala' at al-Bad' revealed an extended settlement that was probably protected by a citadel. The archaeological assemblage, which was initially deemed to be quite regional in character, became increasingly marked by exogenous types at the end of the first millennium BCE, confirming the oasis' growing role on the caravan route. At the turn of the first millennium CE, the archaeological evidence, which highlights the prosperity of al-Bad' and its commercial and military role, fit perfectly with our understanding of the location of *Madiama*, near Macna. This proximity between a city and its port easily justifies, when viewing the larger region of the Arabian Peninsula, of applying the appellation *Madiana*, both on the Red Sea coast and inland, as suggested by the mention of Flavius Josephus for example.²³⁰ A comparison of the data with historical references seem surely to support a *Madiama* = al-Bad' equation in the "classical" era. It remains for us to unearth proof of it in excavations.

229. In particular between the different components of the oasis, but also by ensuring peaceful complementarity with the groups of the surrounding desert that were affected by many constraints.

230. Confusion of the two sites is not excluded either.

How the name of Madian, probably originating in the North Arabian script—which probably related to a vast geographic region with particular ethnographic associations in the Bronze Age and possibly also in the Iron Age—transmogrified into the Greek *Madiama* remains obscure. This toponymic affiliation is not necessarily directly linked with the site of al-Bad' itself, from one (uncertain) capital of Madian to another *Madiama*. This may be the result of many types of processes that are well known in the Arabian Peninsula: the displacement of populations (and tribes) over medium and long distances (involving conquest, political constraint and/or integration with others groups already present),²³¹ the settlement of formerly nomadic groups in a more favourable environment;²³² or the concentration of a geopolitical entity into a geographic area, as one might suppose with the concept of the "tribal city" developed for the Yemenite Jawf by J. Schiettecatte.²³³

Arab-Islamic geographers placed Madyan at al-Bad' as early as the 9th century CE, at a time when the oasis was active, although smaller in size when compared with previous eras. Historical and some tenuous archaeological sources seem to indicate a continued human presence in the region (and possibly at the oasis) during the *Jahiliyya*. Chronologically, the relationship between *Madiama* and Madyan seems therefore much more direct.

The reasons for the abandonment of the name Madyan, probably during the Middle Islamic period, are, however, uncertain. Was the site abandoned and the toponym forgotten? Should we consider the possibility of a change of population at the oasis? An alternative suggestion is that the name Mughayr Shu'ayb, which is in greater accordance with references in the Qur'an, was adopted from the Mamluk period onwards.²³⁴

To conclude this paper, our initial understanding of the oasis requires further refinement and confirmation, which can only be achieved by additional fieldwork. The exact chronology, the extent of each archaeological site and the changes to the landscape remain to be confirmed. Nevertheless, we can state with little doubt that al-Bad' was the ancient Madyan of Arab-Islamic sources, the probable

231. A phenomenon studied in detail in Yemen, by ROBIN 1991, pp. 83-88. For northern Arabia, we can, for example, evoke the migration of some sections of the tribal confederation of Shammar; see RASHEED 2012.

232. For example, the chief of the *Emeseno* tribe gave the name of the tribe to the city of Emese (SARTRE 2001, pp. 382-383).

233. SCHIETTECATTE 2010, p. 149. "These towns were occupied at least from the beginning of the first millennium BC. They took the form of small independent entities. The town, its territory and the tribe dwelling in and around the town were designated by a single name."

234. See note 18.

Madiama of classical sources, and was also most likely a part of the Madian confederation in the first millennium BCE (and possibly in the late second millennium BCE).

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