



Michel Mouton, Anne Benoist

## The Formation of a Regional Center in South Arabia in Antiquity

The wealth of southern Arabia was based on its huge agricultural territory which depended on seasonal flood-water harvesting techniques. These techniques originated during the second half of the 4th millennium in small family communities which learnt how to improve their agricultural land. The urban phenomenon (some would say pre-urban) in southern Arabia was a long development rooted in the multitude of small settlements whose populations gradually grew, grouped themselves together and focused their workforce on the management of water until, eventually, complex irrigation networks were created in the arid valleys of the Yemeni lowlands. Some of these valleys gave birth to powerful kingdoms which grew rich from the spice trade. In order to obtain a better understanding of the stages of this urban development in southern Arabia the French Archaeological Expedition to the Jawf-Hadramawt, in collaboration with the General Organization for Antiquities, Museums and Manuscripts of the Yemen, decided to work on Makaynun, a minor site in the interior of the Hadramawt. The territory of Makaynun was relatively well preserved and allowed for a complete and detailed investigation (fig. 1). This paper presents some of the results of the work undertaken at the site between 2000 and 2007<sup>1</sup>.

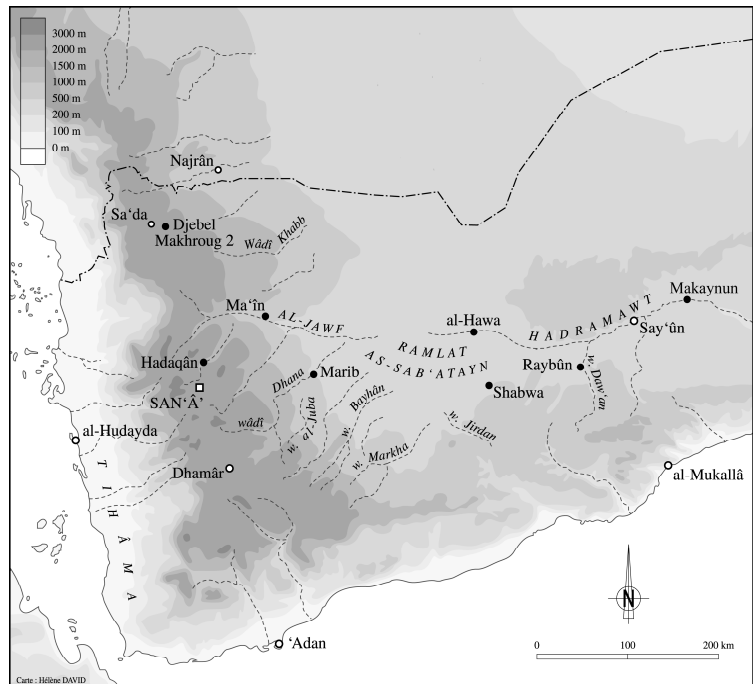


Fig. 1 – Map of South Arabia (H. David).

<sup>1</sup> BENOIST ET AL. 2005, MOUTON ET AL. 2006, BENOIST ET AL. 2007.

The site of Makaynun lies approximately 40km east of the town of Tarim in the Hadramawt valley at the confluence of five tributaries, the wadis Jibb, Thawba, Sukhura, 'Arda and Sabya, which feed the irrigation network of the central plain (fig. 2. It covers an area of approximately 600m x 400m in the centre of the alluvial plain of the wadi Masila (a permanent water course which flows in the upstream half of the Hadramawt valley), about 800m from the current bed of the river, and is surrounded by large silt deposits of anthropogenic origin. The site consists of several mounds which rise from three to seven metres above the general level of the silt (with a few areas being slightly higher), separated from each other by depressions and ravines.

Stratigraphic soundings and excavations in different areas led to the identification of four time periods.

Phase 1, the oldest, is represented by three structures which stood on a small bluff. These mudbrick constructions were brought to light at the bottom of a sounding and are quite distinct from installations found in later levels on the site. The remains of a wooden beam and two successive floors suggest that these were dwellings. Two C14 dates were taken from a fragment of charcoal found on the outside surface which was sealed by a thick destruction layer of mudbrick<sup>2</sup>. We reserve judgement on the results, since they seem extremely old to us (middle of the 4<sup>th</sup> millennium).

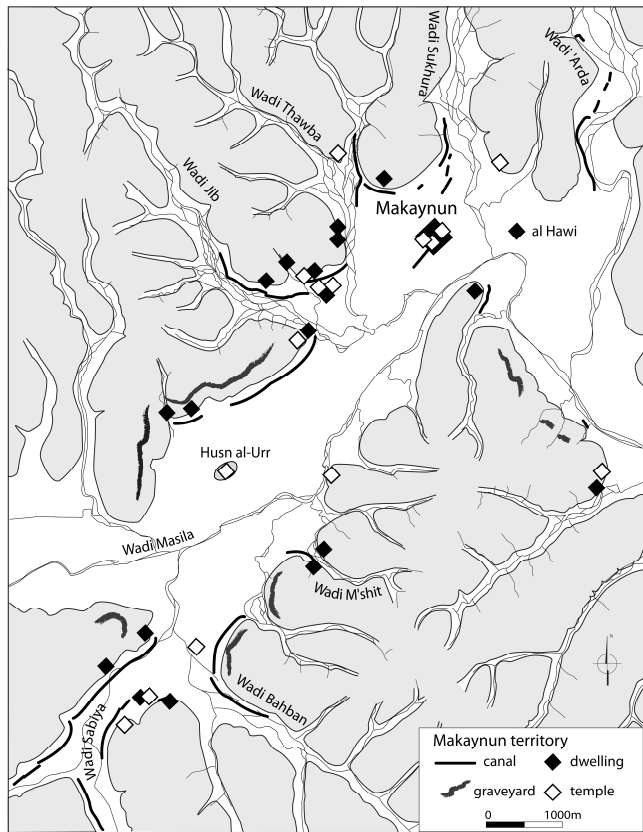


Fig. 2 – Sketch map of Makaynun territory (S. Eliès).

Sample number	Date	Calibration $\pm 1 \sigma$	Calibration $\pm 2 \sigma$
Pa 2423	4670 $\pm$ 90 BP	3628 BC – 3361 BC	3644 BC – 3107 BC
Pa 2426	4735 $\pm$ 85 BP	3634 BC – 3378 BC	3693 BC – 3352 BC

The pottery seems to be closer to assemblages from levels dated to the end of the 2nd millennium and the beginning of the first millennium BC, both on this site and on others in the Hadramawt; they are quite comparable to the assemblage from the ancient period of Raybun (1500–700 BC) apart from the absence of painted wares. However, it is true that little is known about pottery from before the 2nd millennium. Furthermore, an agate seal, of neo-Assyrian style and dating from about the 8th century BC was also found in these levels (unpublished). In spite of the radiocarbon dates, we concede that Phase I goes back to the end of the 2nd millennium and the early centuries of the 1st millennium BC, as is suggested by the associated material.

Phase II (beginning of the 1st millennium BC to the 7th – 6th century BC) corresponds to a period of rising silt deposits in the valley: in one of the soundings there were layers characteristic of alternating flooding and rapid drying out. Traces of occupation were found in the succession of deposits – hearths, post-holes, ceramic and bone objects. The pottery (1092 sherds) has parallels in the well-known types from levels dating to the end of the 2nd millennium at Raybun, from the 9th–8th century BC and 8th–7th century BC

<sup>2</sup> Dates provided by Jean-François Saliège, Laboratoire LOCEAN, CNRS, Université Pierre et Marie Curie, Paris; calibrations made using the intcal 04.14c programme. (after REIMER ET AL. 2004).

(levels IV and V) at Juja and with some slightly later forms. Two C14 dates from charcoal samples taken from two hearths confirm the dating suggested by the ceramics.

Sample number	Date	Calibration $\pm 1 \sigma$	Calibration $\pm 2 \sigma$
Pa 2348 (Foyer F.560)	2910 $\pm$ 80 BP	1257BC – 1002 BC	1373 BC – 906 BC
Pa 2406 (Foyer F.561)	2545 $\pm$ 50 BP	797 BC – 555 BC	810 BC – 512 BC

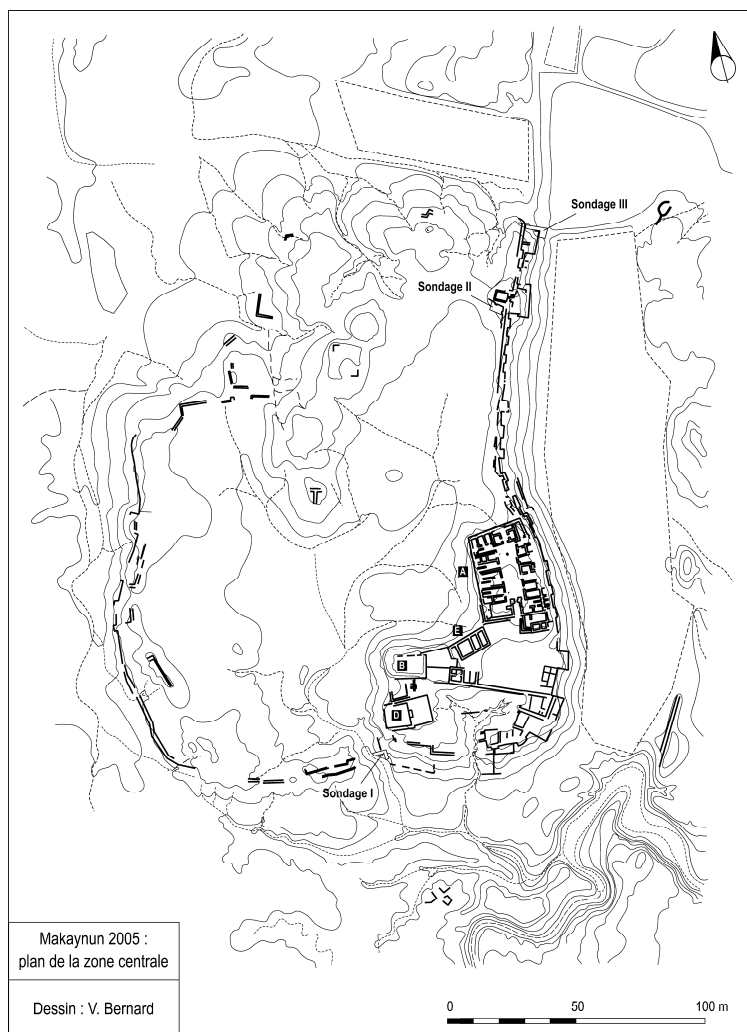


Fig. 3 – Makaynun. General map of the enclosed arera (V. Bernard).

1.10m wide, built of uncut and roughly dressed limestone blocks, with regularly spaced rectangular buttresses. The constructions inside indicate a mudbrick dwelling of a type related to houses with a tripartite plan well known in ancient southern Arabia from the 8th – 7th centuries BC onwards<sup>3</sup>, and still preserved today in the traditional domestic architecture of Yemen. Built one against the other, these domestic structures formed part of the defences on the south side. The same is true in many other small urban centres known from antiquity in the Yemeni lowlands<sup>4</sup>.

<sup>3</sup> MAIGRET, ROBIN 1989, fig. 2; ROUGEULLE 2004, fig. 4, 8.

<sup>4</sup> BRETON 1994, fig. 44, 53–55.

Surface renders associated with zones of water flow found in two of the soundings suggest that an irrigation network had been built in the central valley in the period preceding the erection of the walls of the first enclosure. It should be noted that none of the Phase II levels yielded any trace of constructed dwellings. Thus the locations which were investigated, that had been occupied during Phase I, seem to have become dedicated to agricultural activities, but the finds and anthropogenic evidence suggest the presence of a dwelling close by.

Archaeological investigations indicate that the first urban period occurred in Phase III (6th – 4th centuries BC) (fig. 3). The oldest epigraphic document is a dedication in Sabaean (Arbach-Mak 7) most probably to the goddess dhât-Himyam, the glyph for which provides a link to the *mukarrib* Karib'îl Watar, son of Dhamar'alî Dhârih, who reigned at the beginning of the 7th century BC. At that time, Sabaean influence in the Hadramawt was clear. Saba' had made an alliance with the kingdom, ceding conquered territories in the wadi Markha. The urban development of Makaynun is assumed to have occurred after this period. The first enclosure was built directly on top of the levels of Phase II. It consists of a double-faced stone wall,



Fig. 4 – Makaynun. Aerial view of to the east, showing the high esplanade (Miss. arch. française dans le Jawf-Hadramawt).

The most frequent pottery type (out of 1367 fragments) found in the levels of this phase was common red and black cooking pots. But the clays and the preparation methods were no longer the same. The thickness of the sherds appears more regular, and red and brown slips were more common. The most frequent parallels can be drawn with the deposits of the 6th to 1st centuries BC at Raybun and from the 6th to 4th centuries BC at Huraydha<sup>5</sup>. We therefore place the beginning of this ancient urban phase somewhere in the 6th century BC. The construction of the second enclosure in the 4th or 3rd century BC marked the end of this phase.

Phase IV (4th–1st centuries BC) is characterised by the introduction of monumental architecture in the town. Built with care, the second enclosure clearly functioned not only simply as a defence but also as a symbol of prestige: its exterior face was constructed of pink-veined, white limestone blocks which were dressed either with a pick or a pointed hammer: the courses were regular and small stones were inserted to wedge the blocks<sup>6</sup>. Buttresses about 3m long reinforced this exterior face at regular intervals.

Two entrances have been revealed, each with a chicane and corridor. The southern entrance opened onto a large raised esplanade (fig. 4), roughly triangular in shape and dominated by two *intra muros* sanctuaries of which only the podiums, some decorated architectural fragments, some dedicatory inscriptions and libation tables survive. Two buildings, presumably used for administration and to house the religious personnel, formed the northern side of the esplanade. This religious space dominated the surrounding urban area.

Most of the levels of this phase are close to the surface and have been eroded. Pottery formed the main component of the previous period, but a new type now appears: a thick greenish pottery, porous and friable, with a temper of plant matter, represented mainly by large jars with short concave necks. This very characteristic pottery marks the end of the occupation of the central site at Raybun in the 2nd century BC,

<sup>5</sup> SEDOV 1997.

<sup>6</sup> Techniques that are well described at SHABWA, BRETON 1994, 70 and DARLES 2003, 221.



Fig. 5 – The Hadramawt valley at Makaynun, looking north-west. In the first plan the remains of the village of al-Hawi on the silts resulting from the irrigation in antiquity (Miss. arch. française dans le Jawf-Hadramawt).



Fig. 6 – Wadi Sabiya. The main canal carrying in antiquity the diverted water of the seasonal floods to the agricultural land at the mouth of the valley (Miss. arch. française dans le Jawf-Hadramawt).

irrigation of much larger areas of communal agricultural land on the river terraces of the principal tributary valleys of the central wadi Masila. At the source of each network was a water intake at the head of the valleys consisting of a diversion dam constructed from lines of stones which diverted part of the floodwaters from the wadi towards a slope of the valley where a canal had been created simply by raising an earthen dyke. Outfalls at regular intervals along its length controlled the force of the floodwater. These installations often led the water several kilometres away from areas that were at a sufficient elevation to allow the water simply to flow down by gravity to the zones under cultivation (fig. 6). The water was stored in reservoirs formed by dykes in the downstream part of the secondary valleys and was then carried by a main channel to

and of the 2nd to 1st century BC levels at Shabwa and Juja (level II)<sup>7</sup>. Other isolated elements confirm that the site was occupied until the 2nd or 1st century BC.

The site is positioned in the middle of the valley of wadi Masila (fig. 5) and commands an area that appears to us to be bordered by two meanders in the river. There are numerous constructions from antiquity, but today they are rapidly being destroyed by modern agriculture due to the growth in population and improved technologies.

At the confluence of the wadis 'Arda, Sukhura, Thawba, Jibb, Mabrak and Ghanif, Makaynun's land benefited from the floodwaters flowing from these six valleys.

Without going into detail about the irrigation methods of southern Arabia in antiquity (these have been well studied and are described elsewhere<sup>8</sup>) it must be stressed that they were based on techniques of seasonal floodwater management which had been perfectly mastered at the time which concerns us here. In the Hadramawt, rain, which is very infrequent and can be extremely heavy on the plateau, runs down the many ravines into the valleys and concentrates into flows which people initially diverted upstream onto small family fields. These first, small-scale works were fed by runoff from the very small lateral valleys or by cascades descending directly from the plateau. Subsequently, more and more complex installations encouraged the growth of networks that enabled the

<sup>7</sup> SEDOV 1997, 48, pl. 41o, 44b; BADRE 1991, 249, 277; HANSEN *ET AL.*, fig. 34-2, 3, 5.

<sup>8</sup> On South Arabian irrigation techniques see HEHMEYER, SCHMIDT 1991, GENTELLE 1991, COQUE, GENTELLE 1998.

splitters which distributed it into secondary channels. From these it flowed into the fields through sluices consisting of a sliding panel between stone risers. Thus the water reached the fields, which were enclosed by earthen dykes and watered in succession according to a rota established by custom. In this type of system, the accumulation of silts carried by the water cause the inexorable raising of the level of the ground under cultivation, which compels families, communities and whole population groups to co-operate in order to be able to produce a work force of sufficient size to undertake more and more onerous maintenance work. The level of the entire system upstream of the cultivated area needs to be raised in order



Fig. 7 – Wadi Sukhura. Section showing the remains of an early deflector at the mouth of a small affluent, buried under the silts accumulate during later phases of agriculture in antiquity (Miss. arch. française dans le Jawf-Hadramawt).

to capture the water higher up and bring it to the raised level of the fields (fig. 7). These constraints, together with the type of irrigation, favoured the development of tight-knit groups which clustered at the foot of the valleys close to their communal areas of cultivation at the lowest level of the hydrographical system. This is the reason for which the villages are, for the most part, to be found on the central plain where the tributary valleys open out on it.



Fig. 8 – Hadramawt valley. Hydraulic constructions in the agricultural land surrounding the site of Makaynun (Miss. arch. française dans le Jawf-Hadramawt).

Each village or group of villages around Makaynun had an associated irrigation network and hundreds of installations have been mapped during the surveys carried out by the archaeological team. There are canal sluices, splitters, canals and overflows (fig. 8). It is not easy to date them: the continual refurbishment of the irrigation systems was too rapid to allow the definition of architectural phases based on technological evolution. No material has been found associated with these installations and the few



Fig. 9 – Wadi Sabiya. A southarabian village in the slopes of the cliffs (Miss. arch. française dans le Jawf-Hadramawt).

radiocarbon dates obtained are insufficient and give too wide a time span to permit any ordering of the hydraulic constructions.

It is clear that the systems enabled the irrigation of agricultural areas downstream of the tributary valleys, at their confluence with the central valley, as well as areas in the central valley itself. In the more important valleys (wadi Sukhura, wadi 'Arda) there were also cultivated areas along the banks of the watercourse, which supposes a partial distribution of the waters from lateral canals. In more thoroughly surveyed valleys (wadi Thawba, wadi Jibb) diversion dams have been found at the base of both sides of the valley: if these were contemporaneous it means that each valley could supply two water distribution networks.



Fig. 10 – Wadi M'shit. The platform of a ruined southarabian house in the slopes (Miss. arch. française dans le Jawf-Hadramawt).

To conserve cultivable land, the villages were built on the lower slopes of the cliffs which form the boundaries of the valley (fig. 9). The only group of buildings of an apparently domestic nature which was found on the cultivable silt yielded no diagnostic ceramics from antiquity, and we therefore feel it should be considered to be of medieval or modern origin.

By building the villages on the slopes it was possible to preserve agricultural land, to have a dominant position safe from the continually rising level of the silts and to overlook the fields. Houses were constructed of stone on gravel bedding or, where the ground sloped steeply, on faced terraces that provided a level base (fig. 10). In some cases the upper part of the walls were of mud.

	T1018	T2027	Hâwî	T1061	Sabiya	T2122	T2078	T2080	T2058	T1118	T2119	T2115	T2116
II													
III													
IV													

Table 1. Distribution of the pottery collected on the surface in the dwellings around Makaynun, by periods (grey for the less attested periods).

A long village comprising some fifty houses and a sanctuary stretched out along the eastern slope of wadi Jibb. On a terrace halfway up the cliff slope was a smaller village of six or seven buildings which overlooked the whole confluence of the wadi. In wadi Thawba two villages, of seven or eight houses each, faced each other from opposing slopes. It should be noted that the larger villages, where there were more than ten houses, are also those which are furthest away from the centre of Makaynun, for example at the mouth of the wadi Sabiya or beyond the meander to the east. The only village which appears to have contained much more than a dozen houses is that discovered at a place called al-Hawi, a little to the north east of Makaynun. Its size is explained by its location at the mouth of the wadi 'Arda, where the considerable water flow must have made it possible to develop a very large area of agriculture. In some of the smaller valleys, such as the wadi M'shit, there are only a few, widely scattered, houses built on stone platforms.

The settlement pattern is well illustrated by nineteen areas of occupation which were surveyed around the site of Makaynun. Of these, sixteen can be situated chronologically, based on the characteristics of the pottery assemblages gathered on the surface (table 1). Only two yielded a little material from Makaynun Phase II. Nearly all of the sites appear to have been occupied during Phase III and half of them continued to be so until Phase IV. Therefore, these are not settlements which predate the urban development, but villages contemporary with the occupation of Makaynun. This does not preclude the hypothesis of older dwellings scattered through the central valley during Phases I and II, predating the accumulation of major agricultural silt deposits, which occurred during Phases II to IV and which would have covered them over, as is the case for the Phase I structures found in a sounding at Makaynun.

Fifteen sanctuaries have been identified in the archaeological area. Three of them are within the urban area of Makaynun, two being on the esplanade which dominates the site on the south east side. These two sanctuaries (B and D) were each built on a massive podium and opened out onto either side of the esplanade, which is 40m x 60m and divided in two by a long wall running east west, a few courses of which have been preserved. The monumental aspect of these two religious buildings was heightened by their position at the edge of the raised area. On the northern edge of the site, outside the enclosed area, is a third sanctuary built on an artificial mound. A long access ramp – probably a staircase – led to a podium built from very large limestone blocks, some of which form rough orthostats. As was usual around the ancient sites of the Hadramawt, the sanctuaries were more numerous outside the urban areas, on the slopes of the cliffs. Only two small isolated sanctuaries have been found on the plain at the confluence of wadi Jibb with the central valley, and a third one at the mouth of wadi Sabiya. In wadi Jibb the first sanctuary consisted of a small oblong room, 8m long, with a perpendicular access ramp to the east south east. The second sanctuary, roughly rectangular in plan, with sides 8m long, opened towards the east where the remains of an access ramp are barely visible. To the south, the remains which were found are partly covered by cultivation silts. The interpretation is based on the architectural elements and the visible stone facings, which were the norm in small sanctuaries such as this.

The medieval fortress of Husn al-'Urr stands on a rocky spur in the middle of the central valley, and here we found the podium of another sanctuary, built of well dressed stones. Decorative elements re-used in later constructions may have come from this ancient building. The other sanctuaries stand on the slopes of the central valley and at the mouth of the tributary valleys immediately around Makaynun. To the north east of Makaynun, between the mouths of wadi Sukhura and wadi 'Arda, a 65m long stairway leads to a small hypostyle sanctuary built of rough blocks on a trapezoidal podium (fig. 11)<sup>9</sup>. On the north east slope of the

<sup>9</sup> BRETON *ET AL.* 1980, pl. V. On South Arabian temples in general see SEDOV 2005, DE MAIGRET 1991 and 2004.





Fig. 11 – Wadi Hadramawt. A temple in the slopes of the cliffs, facing the valley at the north of Makaynun (Miss. arch. française dans le Jawf-Hadramawt).



Fig. 12 – A grave built against a rock wall on the left bank of wadi Hadramawt (Miss. arch. française dans le Jawf-Hadramawt).

central valley, immediately to the west of the mouth of wadi Jibb, a small, isolated, very poorly preserved sanctuary stands on a podium which was accessed by a ramp that was partly destroyed by the old British track. To the south east, facing the fortress of Husn al-'Urr, another, much larger, isolated sanctuary overlooks the valley. It stands in an enclosure containing several other rooms. A stairway with landings is visible to the north, and a second rises perpendicularly on the side facing the valley. This sanctuary has yielded 14 fragments of inscriptions, the most of any in the Makaynun area. A small sanctuary was built in wadi Thawba, to the north west of Makaynun, on a ledge at the foot of a rocky spur that sheltered a medieval fortlet which might have been occupied since antiquity<sup>10</sup>; nearly all of its architectural elements have been collected. Beyond the meander, a sanctuary along with several other rooms stand in an enclosed space overlooking a small village. To the south, at the mouth of wadi Sabiya, two more sanctuaries, one of which is in an enclosure containing other rooms, appear to have been associated with villages.

Although the orientation of these small temples does not seem particularly relevant, their distribution seems to us to be significant (fig. 2). They are, for the most part, associated directly with dwellings, either with Makaynun in the centre or with the villages scattered around the valley slopes. Only four of the high sanctuaries are completely isolated, and they lie on two lines perpendicular to each other, thus seeming to frame the territory of Makaynun, marking its boundaries in a way that takes into account both the areas of the urban sanctuaries and the meanders in the valley and its access routes in general. They would seem to be territorial markers, indicating to everyone the boundaries of a communal space.

The dedicatory inscriptions found in these sanctuaries mention divinities from the local pantheon (Sayin and Hawl) as well as divinities worshipped throughout southern Arabia ('Athtar<sup>um</sup> and dhât-Himyam), which implies that religion in Makaynun had an inter-regional aspect to it.

The cemeteries are located on the first vertical walls of the cliffs which bound the valley, at the top of the scree slopes. They comprise a succession of graves placed in hollows formed by erosion—a kind of rock shelter. They are alveoli formed by curved dry stone walls which abut the rock face (fig. 12). Their large size

<sup>10</sup> BRETON 1994, 134.

and the consistent presence of access paths indicate a collective use, most likely by family groups. All of them have been opened and looted, and we did not excavated any of them.

The location of the cemeteries seems to us to indicate a desire to have them sited close to the areas of habitation, but situated such that were difficult of access and yet remained completely visible to the entire community. Cemeteries have been recorded on the cliffs of the right bank beyond the meander of es-Sum between two ancient villages, on the cliffs of the left bank upstream from Makaynun and facing the central valley at the mouth of the left bank tributary valleys at the south western edge of the area under study.

## **Discussion**

The work undertaken at Makaynun has provided information on the nature and development of a regional centre in the South Arabian period, providing an example on which to base an understanding of the settlement patterns of southern Arabia in antiquity.

The settlement at Makaynun appears to be very old and related to hydraulic installations from at least the second millennium. The silts from Phase II correspond to the period of agricultural development. This site gradually became the centre, the meeting point, for a group of agricultural communities which developed in parallel and in a similar fashion in the surrounding valleys. Each community built up a cultivated area and irrigation network that together made up the agricultural territory on which the development of a centre such as Makaynun was founded, as well as the prosperity of its political and religious elite. South Arabian society was first and foremost an agricultural society<sup>11</sup>.

Makaynun was an urban centre that resulted from a process of development which, although part of South Arabian culture, took place locally and had its origins in the headlands of the tributary valleys.

It was only in Phase III of the occupation of Makaynun, around the 7th century BC, that urban development beyond the usual village becomes apparent to us, with the construction of an enclosing wall partly formed of terraced houses, the building of which must therefore have been planned. These remains bear witness to a communal will to build and an ability to organise collective labour which has its roots in the practical management of the irrigation systems. The architectural characteristics of this first enclosure could be classified as what J.-F. Breton calls "archaic fortifications of rough stone" which made their appearance around the 8th and 7th centuries BC<sup>12</sup>.

Phase IV is distinguished by what are, for a small regional centre, major constructions in the central area which were clearly the work of specialised, perhaps itinerant, craftsmen. Archaeology has revealed a proper urban centre which contained places of worship that united the neighbouring village communities, a defensible enclosure and community buildings designed for economic and political use (for example building A, which has more than 25 rooms arranged around a central area). This centre did not replace the rural settlements by concentrating the population; the villages which surrounded Makaynun were nearly all contemporaneous with its main phases, Phase III and IV. The site was therefore the outcome of a communal agreement or, more likely, of the authority exerted by one of the villages and its elite over the immediately surrounding villages. Makaynun did exist in earlier phases but was then only a modest settlement on an agricultural territory made more valuable by the canal which has been identified in soundings from Phase I onwards. At that time the other communities were probably settled in the interior of the tributary valleys, on land irrigated by the waters upstream (only two of the villages are likely to have already existed by Phase II). It was only when the communities moved downstream to the mouth of the valleys that inter-community relationships developed into a larger grouping whose social organisation required the development of a communal urban centre. This centre could have been founded by the wider community but the earlier existence of Makaynun and its obvious relationship with the water diversion systems of wadi Sukhura (no

---

<sup>11</sup> MOUTON 2004 and MOUTON Forthcoming.

<sup>12</sup> BRETON 1994, 79.

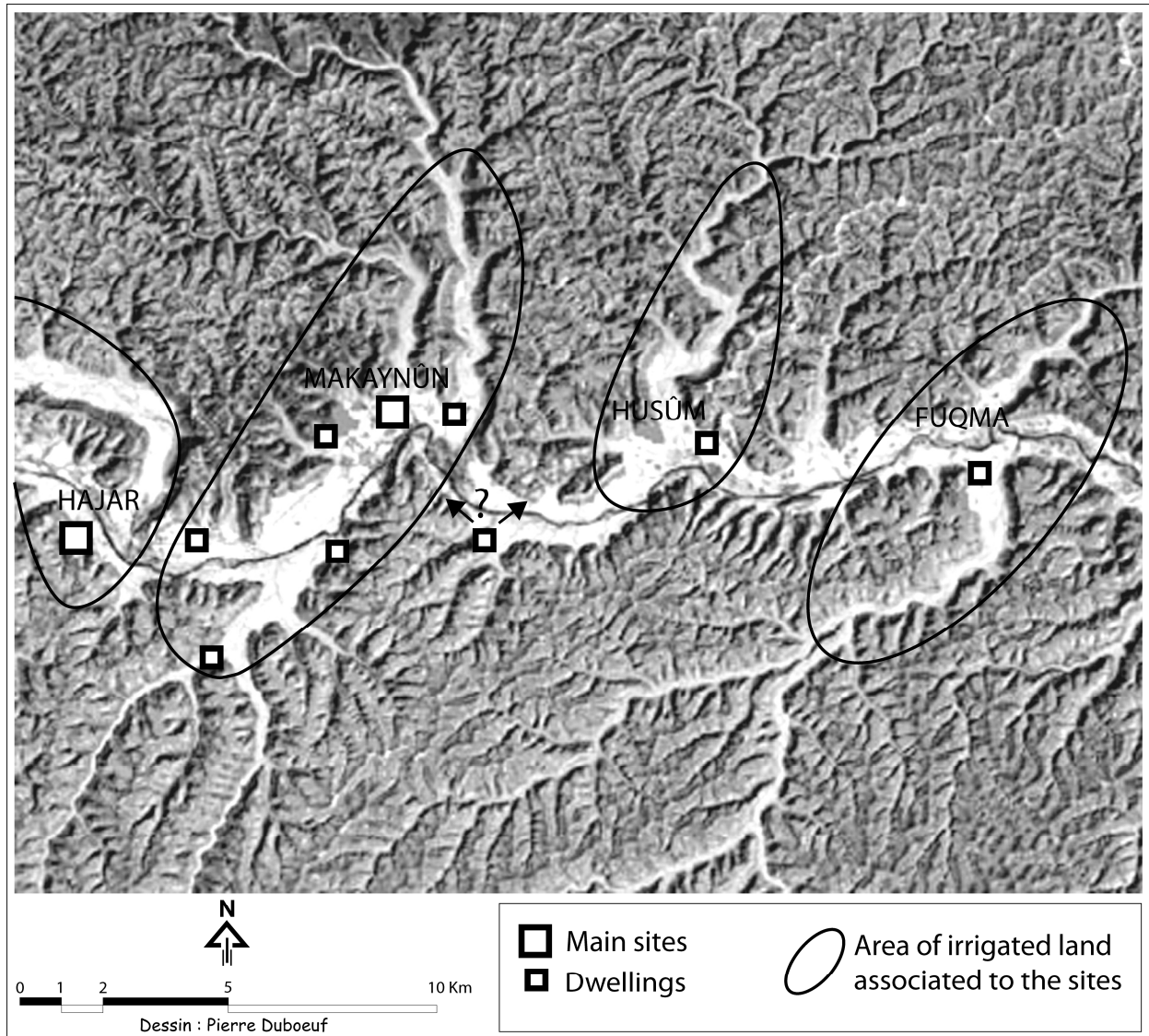


Fig. 13 – The main southarabian sites along the Hadramawt valley in the vicinity of Makaynun (P. Duboeuf).

other village is associated with them) would seem to indicate that this site and its elite took a dominant role from Phase III onwards.

The communal territory defined by both the irrigation networks coming down from the tributary valleys and by the settlement of villages along the edges of the central valley appears also to be deliberately delimited by the sanctuaries (fig. 2). Within the enclosed area of Makaynun the construction of the temples in a dominant position implies a desire to build a space dedicated to ritual observances which not only had a religious significance but also served to reinforce the bonds between the various groups scattered around the valleys.

Outside the urban centre the distribution of small sanctuaries on the slopes outlined a sacred area which merged with the outline of the communal territory. These little buildings, covered with votive inscriptions and where repeated sacrifices and offerings of incense were made, marked the boundaries of a territory which everyone wanted to protect from covetousness and possible attack by neighbouring populations, be they of the same cultural level or not. Thus defended by the gods, each community's

territory, or a part thereof, enjoyed a protection comparable to that of the *hawtah*<sup>13</sup> of medieval and modern times. These areas protected by interdictions were thus more easily available for religious or inter-community political events, or markets. Their existence right from the start of the Islamic era convinces us that they must already have existed in antiquity.

The distribution of cemeteries on the cliffs surrounding the communal territory seems to us indicative of the same desire to protect: the area is marked and delimited by family tombs and thus also placed under the protection of the ancestors.

Complex symbolic networks were developed to protect the lands wrested from aridity, field by field, thanks to the water systems. Religious spaces and the spaces of the dead mingled with the space of the living and especially with their agricultural lands on which their survival and their prosperity depended. It was necessary for each community's territorial boundaries to be recognised by everyone, and in this respect the symbolic and the sacred were of greater importance than mere political and social conventions. Communities on the same level and with the same culture clearly accepted the rules and standards which they shared and peace between them was only disrupted by conflicts arising out of inter-community disputes or the ambitions of princes. But the valleys in which these little strings of urban communities and villages nestled, surrounded by irrigated fertile land, were all dominated by the immense Hadramawt plateau, which stretches from the desert of Ramlat as-Sabatayn in the west to the desert of Rub al-Khali in the north and to Dhofar in the east. The many surveys carried out in different sectors of this territory have not revealed any sedentary occupation from the South Arabian period. Only temporary shelters, small dwellings of a protohistoric type and cemeteries of mobile populations have been found. The valley was the territory of sedentary agricultural communities and the plateau that of mobile pastoral populations, a division which still exists today. The proximity of these neighbouring groups, integrated and complementary in the normal course of things, nevertheless gave the little South Arabian towns of the valleys constant cause to fear that their meagre wealth might be looted. The interdicts of which the gods and the ancestors were guarantors could only strengthen the protection of the communal areas.

This pattern of settlement observed at Makaynun repeats itself all along the central valley of the Hadramawt, with urban centres being separated by ten kilometres or so of 'countryside' (fig. 13). Beyond the meander to the east of Makaynun, sites dating from antiquity have been identified close to the villages of 'Usum and Fughma. To the west, the site of Hajar and the fortifications of Qarat Kibda are close by the modern village of al-Furt and further on the modern village of Qassam is built on the mound of an ancient village. Like Makaynun, each of these settlements, and further west major sites until Bir Hamad and Shabwa, are situated at the confluence of several tributary valleys. The reason for this is that the valleys are both the original territories of the groups which came to form the centres, and the natural catchment area of the waters which were necessary for the development of vast agricultural territories, established field by field thanks to the silt carried down over the centuries and on which the whole wealth of South Arabian society rested<sup>14</sup>.

**Michel Mouton**

CNRS / Maison de l'Archéologie et de l'Ethnologie  
21 Allée de l'Université  
F - 92023 Nanterre cedex France  
E-mail: michel.mouton@mae.u-paris10.fr

**Anne Benoist**

CNRS / Archéorient  
Maison de l'orient  
7 rue Raulin  
F - 69365 Lyon cedex 07  
E-mail: anne.benoist@mom.fr

---

<sup>13</sup> SERJEANT 1962.

<sup>14</sup> This article was sent to the editor in december 2008.

## **Bibliography**

- BADRE L., 1991. Le sondage stratigraphique de Shabwa. *Syria*, 68, 229–334.
- BENOIST A., MOUTON M., SCHIETTECATTE J., 2005. Makaynûn, un centre régional antique dans le Hadramawt oriental. In A. M. SHOLAN, S. ANTONINI, M. ARBACH (eds), *Sabaeen Studies. Archaeological, Epigraphical and Historical Studies in honour of Yûsuf M. 'Abdallâh, Alessandro de Maigret and Christian J. Robin on the occasion of their 60th birthdays*, Il Torcoliere. (University of Sanaa / Yemeni Italian Centre for Archaeological Researches / Centre français d'archéologie et de sciences sociales de Sanaa). Naples / Sanaa, 59–94.
- BENOIST A., LAVIGNE O., MOUTON M., SCHIETTECATTE J., 2007. Chronologie et évolution de l'architecture à Makaynûn: la formation d'un centre urbain à l'époque sudarabique dans le Hadramawt. *Proceedings of the Seminar for Arabian Studies*, 37, 17–35.
- BRETON J.-F., 1994. *Les fortifications d'Arabie méridionale du 7e au 1er siècle avant notre ère*. Deutsches Archäologisches Institut San'a', Archäologische Berichte aus dem Yemen, Band VIII. Verlag Philipp von Zabern. Mainz am Rhein.
- BRETON J.-F., BADRE L., AUDOUIN R., SEIGNE J., 1982. *Wadi Hadramawt. Prospections 1978-1979*. Centre culturel et de recherche archéologique. Aden.
- COQUE B., GENDELLE P., 1998. Irrigations antiques dans le Yémen aride: champs et sédiments. *Bulletin de l'Association Géographique Française* fasc. 2, 158–169.
- DARLES CH., 2003. Les fortifications de Shabwa, capitale du royaume du Hadramawt. *Proceedings of the Seminar for Arabian Studies*, 33, 215–227.
- GENDELLE P., 1991. Les irrigations antiques à Shabwa. *Syria*, 68, 5–54.
- HANSEN D. P., OSCHENSCHLAGER E. L., AL RADI S., 2004. Excavations at Jujah, Shibam, Wadi Hadramawt. *Arabian Archaeology and Epigraphy*, 15, 43–67.
- HEHMEYER I., SCHMIDT J., 1991. *Antike Technologie - Die sabäische Wasserwirtschaft von Marîb. Teil 1*, Archäologische Berichte aus dem Yemen, Band V, Verlag Philipp von Zabern. Mainz am Rhein.
- MAIGRET A. DE, 1991. The excavations of the temple of Nakrah at Barâqish (Yemen). *Proceedings of the Seminar for Arabian Studies*, 21, 159–172.
- MAIGRET A. DE, 2004. New stratigraphical data for the ancient chronology of Tamna'. *Scripta Yemenica*, Moscow, 242–256.
- MAIGRET A. DE, ROBIN CH. J., 1989. Les fouilles italiennes de Yala (Yémen du nord). Nouvelles données sur la chronologie de l'Arabie préislamique. *Comptes Rendus de l'Académie des Inscriptions et des Belles Lettres* avril-juin, 255–291.
- MOUTON M., 2004. Irrigation et formation de la société antique dans les basses-terres du Yémen: un essai de modèle. *Syria*, 81, 81–104.
- MOUTON M., Forthcoming. Sharing of water resources and political unification in the lowland valleys of Yemen and in the Hadramawt in Antiquity. In *International Conference on the Economy and Society of the Pre-Islamic Arabia, dec 12-15 2005*, O.I.B. / A.U.B. Beyrouth.
- MOUTON M., BENOIST A., SCHIETTECATTE J., ARBACH M. AND BERNARD V. 2006. Makaynun, a southarabian site in Hadramawt. *Proceedings of the Seminar for Arabian Studies*, 36, 229–242.
- REIMER P. J., BAILLIE M. G. L., BARD E., BAYLISS A., BECK J. W., BERTRAND C., BLACKWELL C. E., BUCK G., BURR K. B., KUTLER P. E., DAMON R. L., EDWARDS R. G., FAIRBANKS M., FRIEDRICH T. P., GUILDERSON K. A., HUGHEN B. KROMER M. G. MC CORMAC, S. MANNING K. BRONK RAMSAY R.W. REIMER S., REMMELE J. R., SOUTHON M., STUIVER S., TALAMO J., VAN DER PLITCH C. E., WEYHENMEYER C., 2004. *Radiocarbon*, 46, 1029–1058.
- ROUGEULLE A., 2004. Le Yémen entre Orient et Afrique: Sharmah, un entrepôt du commerce médiéval sur la côte sud de l'Arabie. *Annales Islamologiques*, 38, 201-253.
- SEDOV A. V., 1997. *Die Archâologischen Denkmaler von Raybûn im unteren wadi Dau'an (Hadramaut)*, Mare Erythraeum, I, 31–106.

- SEDOV A. V., 2005. *Temples of Ancient Hadramawt*. Arabia Antica, 3, Edizioni Plus - Pisa University Press. Pisa.
- SERJEANT R. B., 1962. Haram and Hawtah, the Sacred Enclave in Arabia. In A. A.-R. AL BADAWI (ed), *Mélanges Taha Husain. Dar al-Ma'arif*. Le Caire, 41–58.