EVO XXII-XXIII (1999-2000)

EXCAVATIONS AND RESTORATION OF THE COMPLEX OF KHOR RORI
MID'S INTERIM REPORT (1999-2000)

ALESSANDRA AVANZINI, VITTORIA BUFFA,
ALESSANDRA LOMBARDI, ROBERTO ORAZI, ALEXANDER SEDOV
With a note by VITTORIO CASTELLANI

Introduction

The Italian Expedition in Dhofar (MID – Missione Italiana in Dhofar) has been working in the area of Khor Rori (Fig. 1), the ancient Sumhuram, since 1996[1]. MID's scientific project aims at the knowledge, preservation and fruition of the monumental complex of Khor Rori (Fig 2) and the surrounding territory by means of the study of the historical, architectonic and archaeological aspects.

MID's project is carried out thanks to the contribution of both Italian and foreign scholars, who work in specific research fields, but also and mainly thanks to the continuous and constructive dialogue with the Ministry of Information and the National Committee for the Supervision of Archaeological Survey in the Sultanate of Oman[2].

This dialogue regards not only the solution of the practical problems inherent the works, but also and mainly the creation of all those tools that serve to the exchange of knowledge between the parts and an advanced scientific collaboration between Italy and Oman.

MID has carried out two new archaeological campaigns in Khor Rori: the first in October-December 1999 and the second in January-March 2000[3].

During the two archaeological expeditions (1999-2000), MID's work was mainly devoted to the monumental city gate, the restoration of which will be the core project of our future expeditions (Fig. 3, see areas A1, A2, A3, A4, A5).

Beside this, our action regarded other areas, in particular the one comprised between

[1] A. Avanzini, 1996.

[2] The Ministry of Information in support of the Italian expedition guaranteed the presence on the field of two Omani archaeologists: Mr. Said al Salmi e Mr. Seif al Farsi.

[3] During the 1999 expedition our working team was formed by the following members: Prof. Alessandra Avanzini (MID's director), Arch. Roberto Orazi (field director), Arch. Vincenzo Labianca (surveyor architect), Dr. Alessandra Lombardi (archaeologist), Dr. Mario Mascellani (land surveyor). The 2000 expedition saw also the presence of the following members: Prof. Alessandra Avanzini, Arch. Roberto Orazi, Arch. Vincenzo Labianca, Dr. Alessandra Lombardi, Dr. Vittoria Buffa (archaeologist), Prof. Alexander Sedov (archaeologist), Arch. Bruno de Nigris, Dr. Francesca Marchigiani (epigraphist), Chiara Benvenuti (Senior student). We have also to mention the stimulating repeated presence of Prof. Paolo Costa (archaeologist) and the partecipation of Prof. Giovanni Canova (ethno-archaeologist) and Prof. Vittorio Castellani (physicist).

Fig. 1 - Map of Arabian peninsula.

the city gate and the palace-temple (A8), the ones internal to the palace-temple (A9, A10) and some areas situated outside the city walls: the one placed East of the gate complex and functionally connected to it (A7) and the external area comprised between the palace-temple and the gate (A 13).

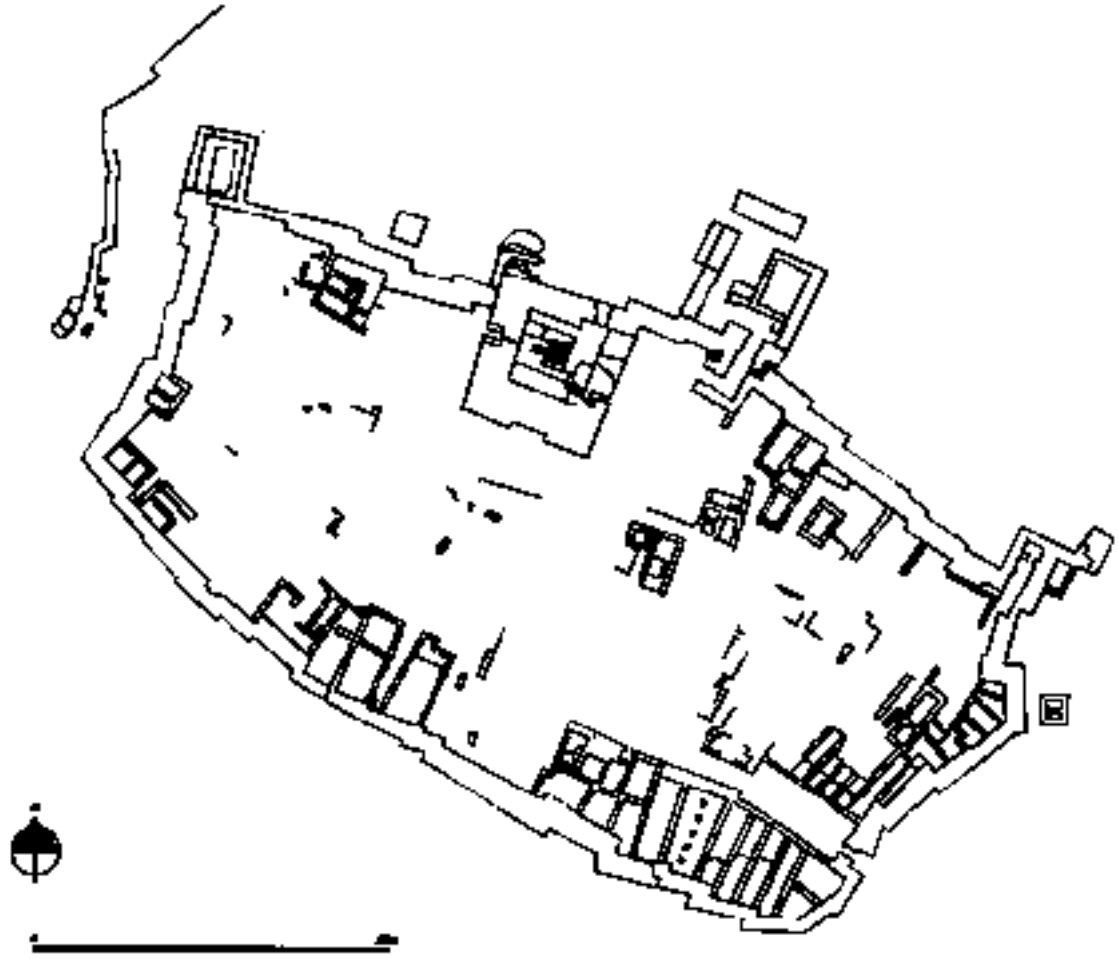

Fig. 2 - Khor Rori: general plan of the city.

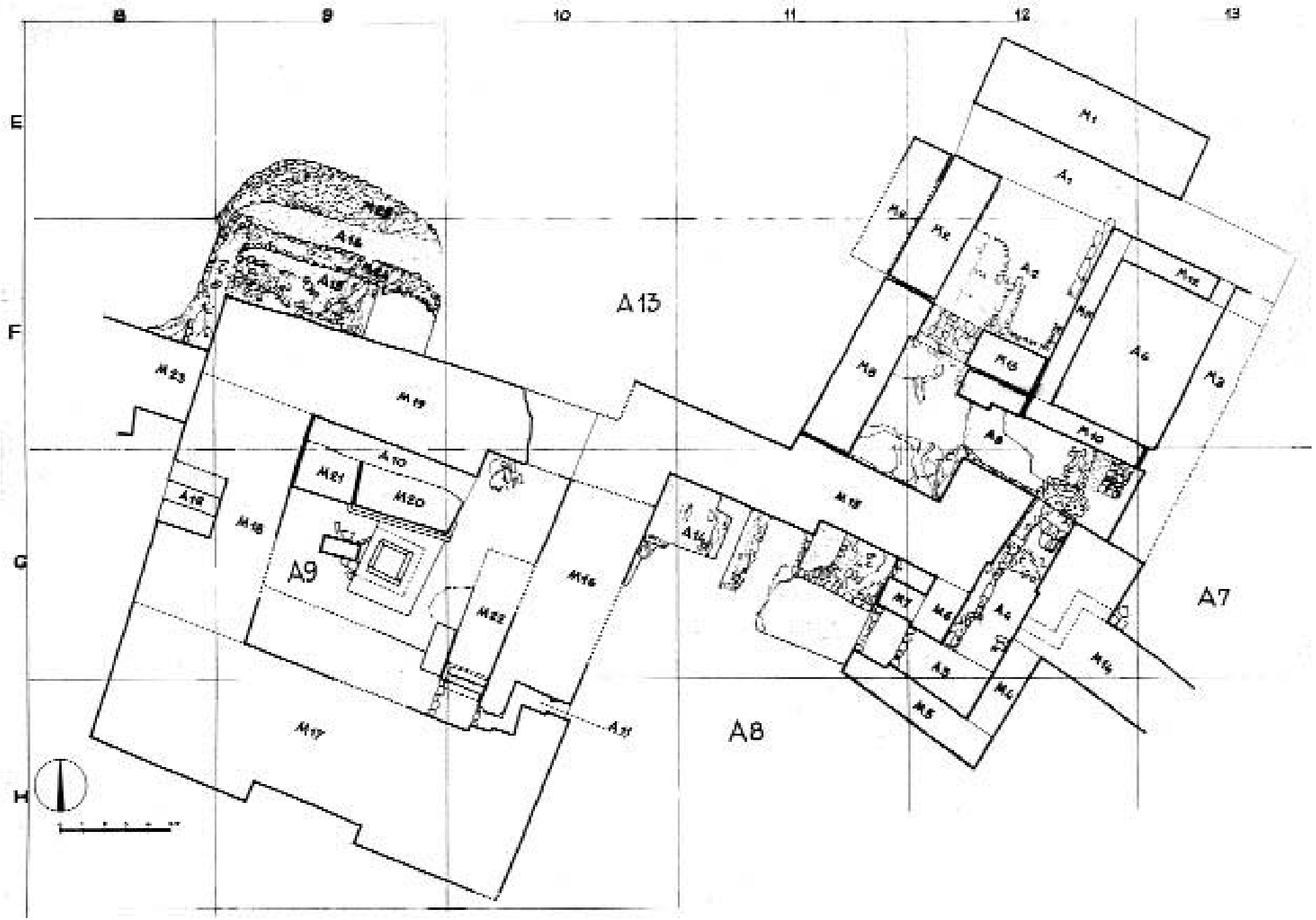

Fig. 3 - Schematic draft of the working area: the city gate and the palace-temple *(drawing by V. Labianca)*.

1. The city gate

The entrance path of the city gate complex rises from the outside to the inside of the city to a height of more than 4 m. Three different doors block a bayonet path controlled by a central tower (A6) and protected towards the outside by a solid isolated wall (M1) (Fig. 4 and 5).

This impressive structure is the main entrance path to the city. A second, more hidden, entrance path opens itself in area A7 exactly in the corner formed by the Western buttress and the surrounding city wall and leads, through a narrow tortuous passage built inside the above mentioned buttress, in the corridor A4, near the middle door.

The study of the architectonic structure of Khor Rori's monumental gate and its epigraphic documentation has provided us with some interesting clues that help us to move some steps toward a better understanding of the history of the city.

We were essentially wondering whether the construction of the whole complex had been carried out at one time or whether it had been realised in the course of different historical periods.

To sum up[4], our preliminary analysis led us to the following conclusions: during the first phase the city gate was the one comprised between the two buttresses and the «L» shaped corridor that led to the more internal door. In the same phase an external structure, also «L» shaped, the one that was to become the Southern side of the tower provided the gate with a first protective barrier.

The last phase seems to be essentially linked to the construction of the third door, a project that involved the enlargement of the complex until today's architectonic configuration, with the construction of the tower and the protection wall isolated on the Northern side. During this phase the original architectonic model was repeated and enlarged (Fig. 6 and 7).

In the 1999–2000 campaigns we started the operations preliminary to the restoration phase, namely the cleansing of the wall from the huge mass of back-fill earth which was accumulated there both because of natural causes and preceding archaeological expeditions.

[4] For a full analysis of the questions regarding the different construction phases of Khor Rori's Northern gate, see the contribution by A. Avanzini and R. Orazi, that will soon be published in *Arabian Archaeology and Epigraphy*.

Fig. 4 - City gate, general view from the South, during the excavation work.

We started the excavation works contemporarily in three different places of the city gate complex (Fig. 3): the first intervention regarded the space situated outside the gate complex, exactly in correspondence with the postern's exit (A7); the second has concerned the area facing the third door (A2 and A1); the third one is situated on the path that leads into the city, immediately after the third door (A3 and A4).

1.1 The area near the postern's exit (A7)

As far as this first area is concerned, after surveying and removing the recent stone steps, we set to eliminate the back-fill earth found next to the walls (Fig. 8).

While digging in this area we could verify that the back-fill earth cumulated in the course of preceding archaeological expeditions was adjacent to a more compact pile of earth, that clearly is due to a collapse dating back to an ancient period.

Even though the study of this area, never surveyed by the American expedition, has not been completed yet, it led us to interesting results.

First of all we brought to light the external side of one of the sections of the city wall (M14), for a length of 7 m, starting from the Eastern buttress. Three meters of this section of the wall, starting from the Eastern buttress, for a height of 2 m, are still intact. Moving Eastwards, we could see that the outer covering had collapsed and showed the internal filling made with stones and earth.

The digging, in this point, has reached the threshold of the postern's external door. The removal of part of the stones, that had collapsed inside the hidden passage, allowed us to bring to light the architrave of the door itself. It is a perfectly shaped stone block of about 95x45x30 cm, with rounded internal corners. Near the Southern corner we can clearly see

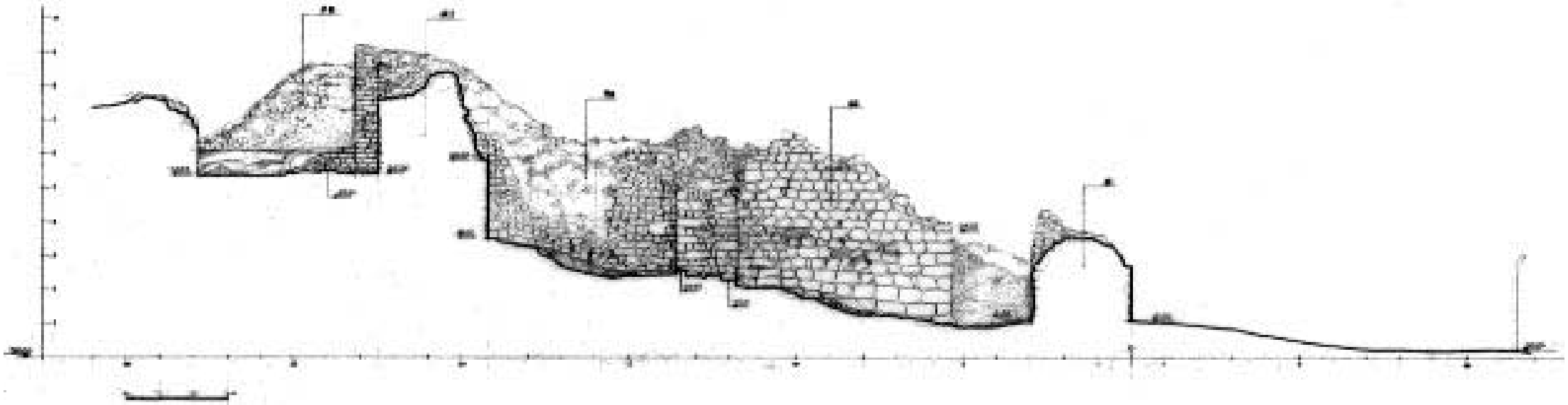

Fig. 5 - Section of the city gate *(drawing by V. Labianca)*.

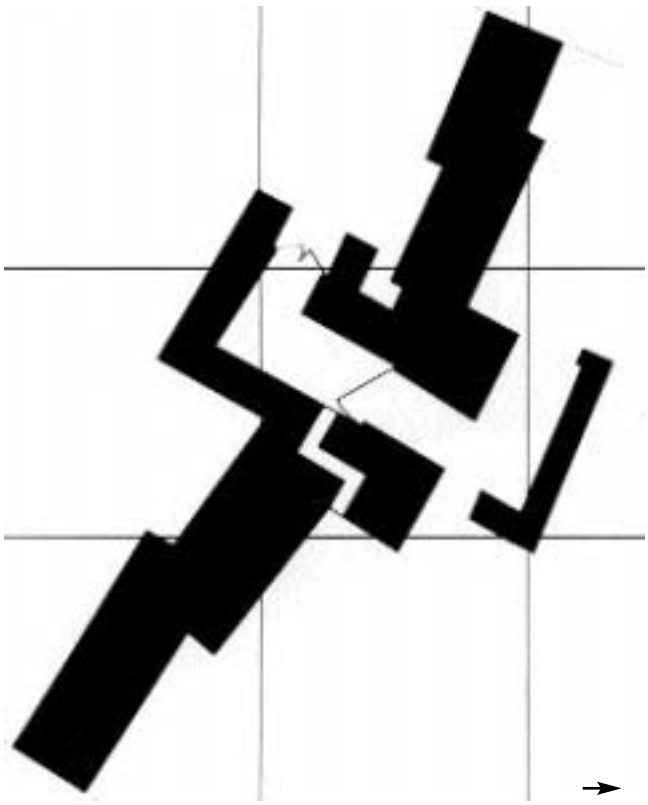

Fig. 6 - City gate, plan of phase 1.

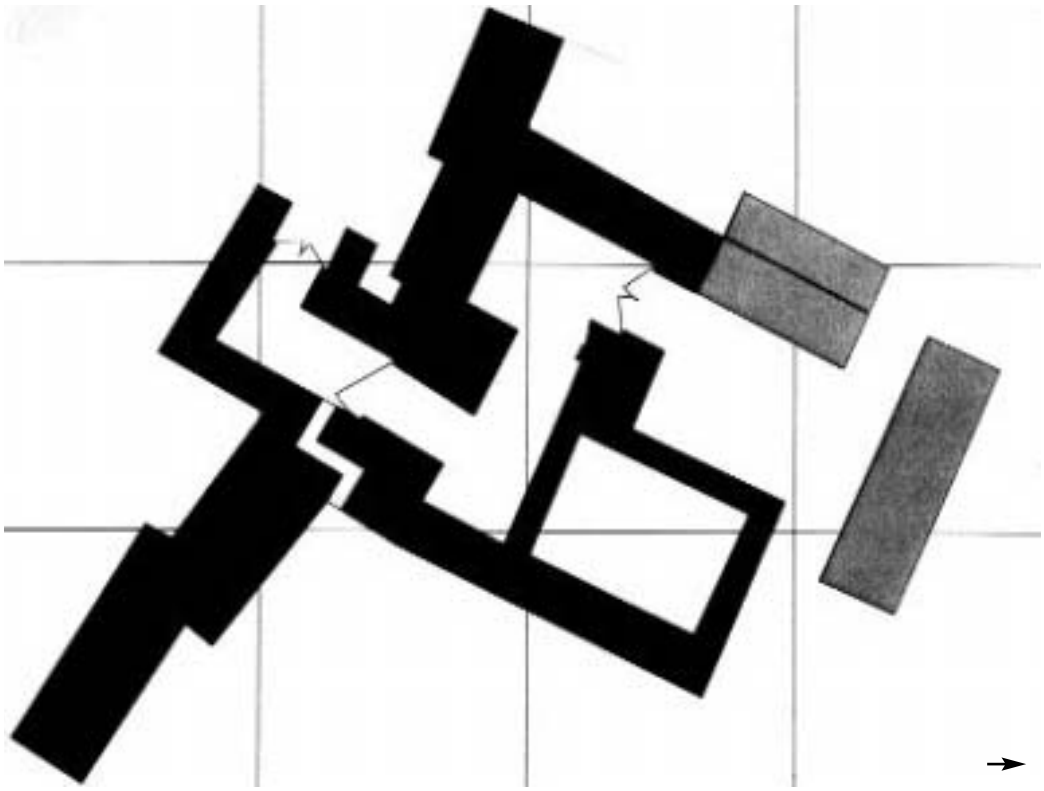

Fig. 7 - City gate, plan of phase 2.

Fig. 8 - Area (A7) between the city wall and the Eastern buttress before the excavation work.

the cavity in which the only shutter of the door rotated. The two jambs present a rounded border to allow the door's closing. Moreover on both sides there are at least two holes where the bolts used to block the shutter were placed (Fig. 9).

The threshold is less well-preserved, but we can still see the cavity where the hinge was placed. The finding of small bronze fragments, in the proximity of the postern's opening, induces us to think that they could belong to a bronze element that covered the hinge's ends of the wooden shutter which were more deteriorated by usage.

Outside the small opening (162 x 52 cm) and in the proximity of the threshold some stones, smoothened by usage, are visible. They seem to be part of the paving that constituted the access to the postern (Fig. 10).

Along the external wall, at the same stratigraphic level, we have found some stones that have not been worked, but which have been posited in two lines that run parallel to the wall itself. It is not clear whether this paving is original or due to a successive use.

We have continued the excavations Northward, starting from the Eastern side of the Eastern buttress. In this point we brought to light few steps that lead to the postern. These steps are made of polished stones of different dimensions placed along the sloping ground, with an inclination of about 18°, and probably cemented with mortar (Fig. 10 and 11).

Continuing the excavation at a lower level, in the point that corresponds to the North-Eastern corner of the buttress, we discovered a small section of the base – still intact – of the wall (M3), that constitutes the Eastern side of the tower (A6). This side of the wall M3 is perfectly aligned with the Eastern side of buttress. After removing the fragments of the stones that fell down, when the wall collapsed, we brought to light a landing placed at the base of the previously mentioned steps.

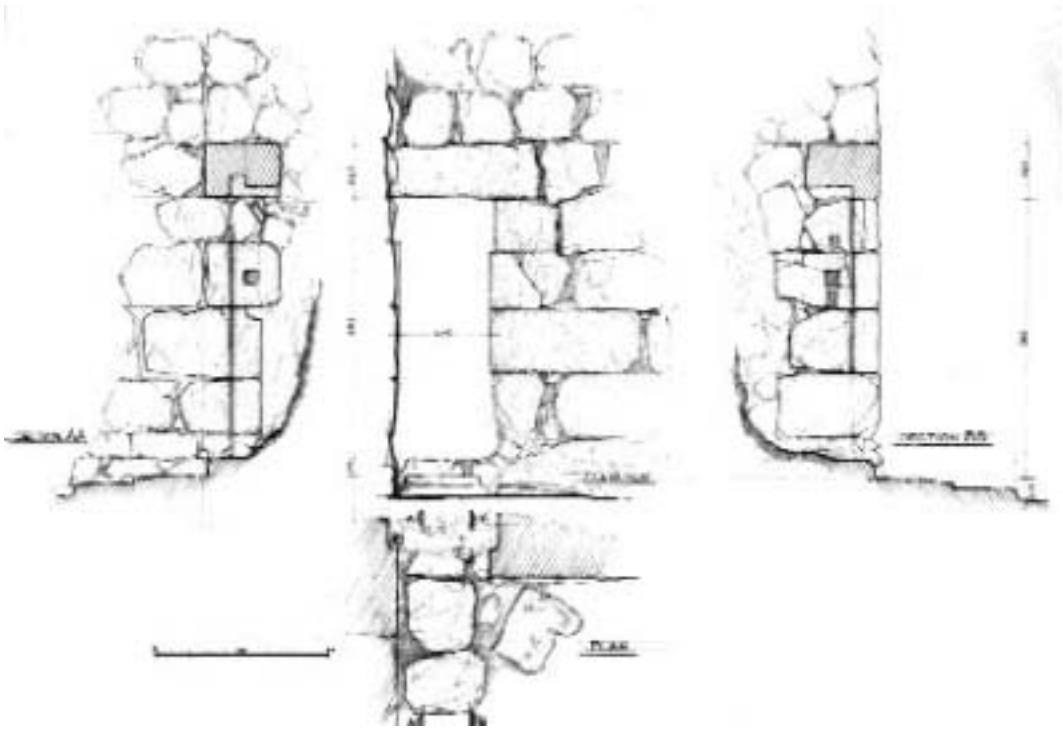

Fig. 9 - Plan, elevation and section of the city gate's postern *(drawing by V. Labianca)*.

Fig. 10 - View of the area A7, with the postern's exit.

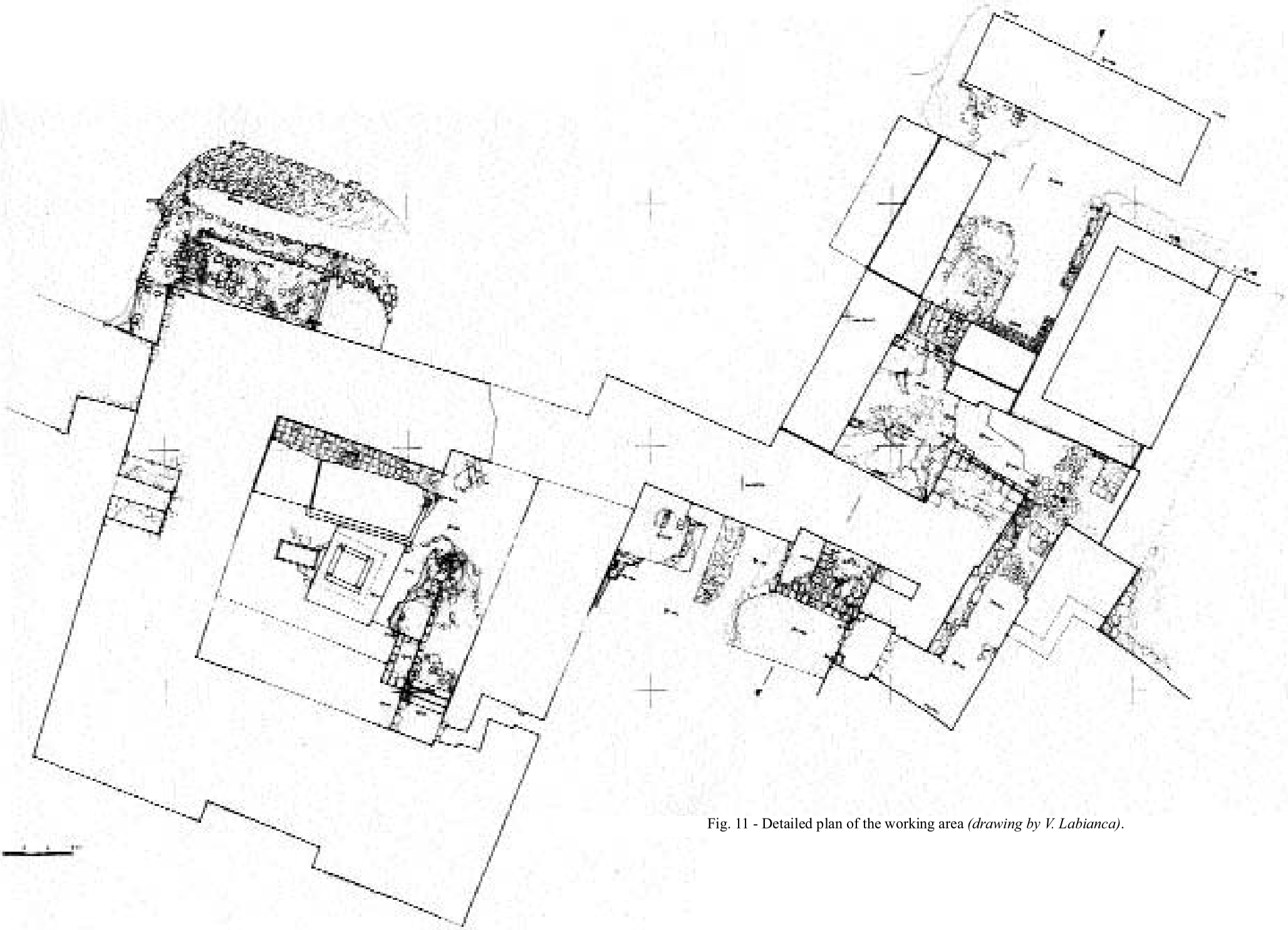

Fig. 11 - Detailed plan of the working area *(drawing by V. Labianca)*.

This landing is probably to be seen in connection with the first phase of the door and with its external «L» shaped wall. At that time, that is before the construction of the tower and the third door, a passage between the Eastern buttress and the «L» shaped wall allowed to enter the town also from the East (Fig. 7).

Continuing the excavations towards the North, we could see that the Eastern wall (M3) of the tower has almost completely collapsed.

The whole area A7, which is strongly inclined towards the North, seems to be paved, even though in an irregular and discontinuous way, with stones of different dimensions, cemented here and there with mortar.

This large area, which has not been fully analysed yet because of the numerous collapses, is characterised by a natural inclination of the ground, the surface of which might have been artificially readjusted.

1.2 The Areas facing the third door (A1 and A2)

Since the beginning we have worked in the area (A1) comprised between the tower and the large external wall barrier (M1). This led us to make an important discovery regarding the overpowering wall's structure: contrary to what Albright had described and drawn[5], this wall seems to be shorter and much larger (3 x 10 instead of 2.30 x 15 m). Whereas, in fact, the South-Western corner of this wall was still visible and correspond to what the American archaeologist had reported, its South-Eastern corner is situated at a distance of about 10 m from the first one and thus is almost symmetrical to the open space comprised between the tower and the great wall that closes the door complex on the Western side (Fig. 7).

The cleansing of the Northern wall barrier of the back-fill earth and debris has brought completely to light both the Western corner and the Northern side which seems to be very well preserved, at least in the case of the two lower rows of calcareous blocks, above which, particularly in the central part of the wall, the masonry is missing (Fig. 12).

During this operation also the Northern side of the tower has been completely brought to light (Fig. 13). This side of the wall (M12) seems to be very ill-preserved, especially in the central part where the stones slipped forward. Only the first three rows of the lower part are well-preserved and this led us to bring to light the door, already described by Albright[6], that led into the tower (A6). The small-dimensioned door is situated on the far Eastern side of the wall and its threshold is placed at about 60 cm above the floor, analogously to what occurred to the storehouses in the South-Eastern part of the city.

At the same time we proceeded to the cleansing of the area A2 of the back-fill earth and we brought again to light the stone bench, that runs along the tower's Western wall (Fig. 14).

The Northern section of the bench is made of stone blocks, which are about 70 x 35 cm large. Their top part presents strange concavities (in some cases there is even more than one concavity on the same stone) whose function is not clear yet. It seems likely that these stones were used to grind vegetable products, but at the moment no evidence that

[5] F.P. Albright, 1982, 15 and Pl. 5.

[6] F.P. Albright, 1982, 18.

Fig. 12 - City gate. Northern side of the external barrier.

Fig. - 13 Northern side of tower.

Fig. 14 - City gate. Area in front of the third door: on the left, the stone bench.

might indicate this function has been found.

The Southern part of the bench runs, going in the East-Western direction, along the small agglomerate (M13) that has been added to the tower. This part of the bench was not made with stones of the same size, but with smaller irregularly shaped stones that have been assembled together.

The last intervention was carried out in correspondence with the third door, whose passage was almost completely obstructed by the collapsing of a large part of the thick wall (M2), that mark the limits of the city gate on the Western side. Inside this material we found some stones with a very regular face (one of the sides was whittled down and one was perfectly smoothened; 55 x 35 x 6 cm) and some smaller stones (32 x 13 x 10 cm) worked in the same way. The relative closeness of the palace-temple and the fact that also in its courtyard we found regularly squared stones reinforce the hypothesis that they were covering slabs used for the walls of the near building[7].

The removal of this material allowed us to reopen the passage through the third door. At the same time, just 1,80 m from its Western jamb, we could bring to light a vertical cut in the wall. It clearly shows how what at the beginning seemed to be only one wall (M2)

[7] The American archaeologists thought that the large squared building, that is situated just inside the gate and incorporates part of the city wall, was a temple dedicated to the god Sin (F.P. Albright, 1982, 19). P. Costa (1997, 436) does not agree with this interpretation; according to him the area of the building that is still intact was the ground floor of a multi-level tower palace. We do not need to define exactly the function of the building and thus we can refer to it as the palace-temple. We cannot exclude, though, that in a small city like Sumhuram buildings like this one had both a religious and a political function.

was formed by two adjacent walls (M2 and M8), which were built in different periods, even though – from a chronological point of view – very close (Fig. 7).

In order to enter the third door and reach its higher level, a platform was built. This platform, the initial part of which is partly lost, is made of big rounded pebbles and rises very sharply towards the third door, running along the Western side of the complex. It is 4.10 m long, 2.20 m wide and it ends, near the door, with some large stone steps on the Western side of which a small drainage channel has been brought to light (Fig. 15).

1.3 The areas North and South of the middle door (A3 and A4)

Along the Western wall of the area A4, we brought again to light the small drainage channel that runs along the wall and its buttress. It looks as if this small channel sometimes runs uncovered and sometimes covered by flagstones (Fig. 16).

The small drainage channel, once it has reached the Western buttress' end, probably turns towards West, and not towards East, as illustrated in Albright's drawing[8], even though its traces are here lost. It is likely that the conduit disappeared under a later paving, which by the way, is very badly preserved along the Northern side of the buttress and that appeared again near the steps of the third door (Fig. 11).

As far as the Eastern corner of the area A3 is concerned, between the buttresses of the middle door and the Southern wall (M10) of the tower, our excavations brought to light some stone elements that at first sight seem to constitute a kind of platform. A more accurate cleansing of the above-mentioned platform shows that the original part of the Southern side of the wall and the platform itself are connected and therefore contemporary (Fig. 17).

This platform, thus, is nothing else but what remains of the protruding part of the «L» shaped wall that protected the city gate during its first building phase (Fig. 6). It is now clear that this wall was interrupted at a certain distance from the Eastern buttress in order to leave space for another passage, that allowed to enter the town from the Eastern side.

The following excavation works in A3 were heavily limited by the presence of enormous heavy calcareous blocks, that had fallen from the Northern side of the Western buttress. The impossibility of removing those blocks did not allow us to complete the excavation works and the sinking caused by the collapsing of the structure, as well as the destruction of part of the floor, made the task of understanding the stratigraphical relationships more hazardous.

The research regarded mainly the area situated on the Western side of the Western buttress, where the American expedition's study was incomplete. Here we found some strata that have not been explored at all. First, we removed a thick incoherent stratum of earth that obstructed a large part of the area, due to the collapsing of the city wall (M15) and the Western wall (M8).

Under the first stratum of earth, identified as stratigraphic unit 28, there was a second darker brown layer (US31) made of fairly soft earth, ashes and many pieces of charcoal, fish and mammal's bones, shells and a few shards. ^{14}C analysis of a piece of charcoal that was found here allowed us to date the filling: 1580±50 BP, that is in absolute terms, between the 320 and 420 A.D, which seems to agree with the more superficial occupation

[8] F.P. Albright, 1982, Pl. 5.

Fig. 15 - City gate. The third door with platform and steps.

Fig. 16 - City gate. General view of A4; on the right the small conduit.

strata, found in the area comprised between the city gate and the palace-temple (see § 2.1 and 2.2).

This layer (US31) covered the whole Western half of the area, including the steps that led from the outside to the third door. In the South corner of the area, that is near the city wall (M15), this stratum was about 15 cm high and covered a large surfacing calcareous rock that slopes down towards the third door for about 1.70 m and the surface of which was flattened by means of the addition of some large stones (Fig. 18).

In this narrow trait of the path we brought to light two floor levels placed the one on the top of the other, without any line of continuity with the exception of a thin layer of earth. The first one (US35) is very hard and compact, greyish and seems to be connected to the fragment of floor (US10) found in the corner formed by the Southern side of the tower and the «foundation» that constituted the remains of the original external barrier. This floor represents a later phase, but apparently extremely close to the one of the original paving (US39) that seems to cover the whole area A3.

This last paving (US39), which is perfectly preserved, has a light pink colour, a hard structure and a very regular surface with gravel, small pebbles and surfacing middle-sized stones placed with extreme precision and regularity. The consistency, structure and colour are identical to the ones of the platform in A2, that constitutes the entrance path to the city after the construction of the third door.

Near the doorsteps of this door and inside the second floor (US35) we found a small

Fig. 17 - City gate. Area A3, view of the platform once part of the «L» shaped wall that protected the city gate during its first building phase

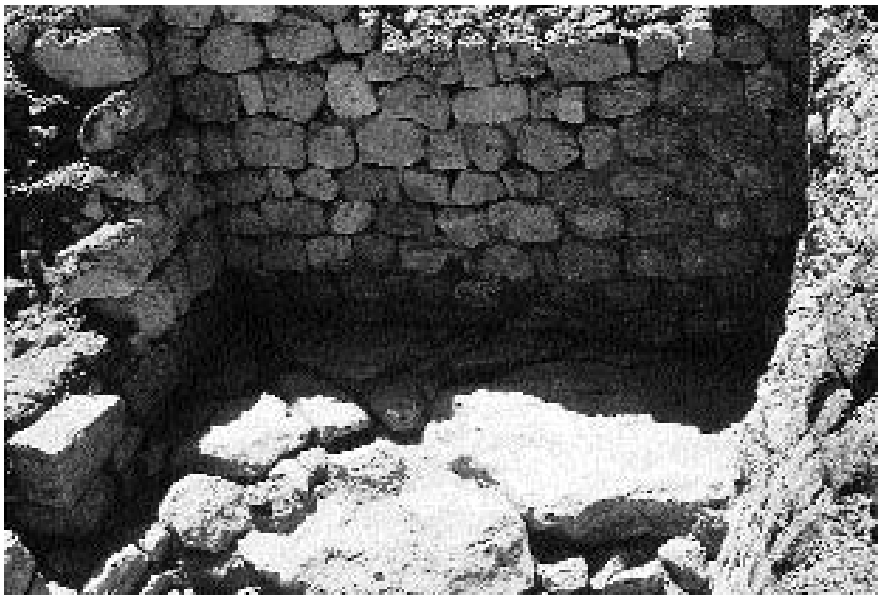

Fig. 18 - City gate. Area A3, view of the bedrock on the Western side of the western buttress.

Fig. 19 - Area near the most internal door, with stone structure in the NE corner.

channel built by covering with white hard mortar the stones that were placed along the sides of the conduit. This conduit, which is about 20 cm large and runs in a South-East North – West direction seems to be connected to the trait found behind the middle door's area (A4 and A5) and the one found, lower down, adjacent to the steps of the third door.

Under the second floor (US35) we found the fragment of a large bronze coin (Co 35), whereas a whole coin (Co 37) that can be dated to the 1st century A.D. was found on the first paving (US39) near the Western side of the buttress.

2. The area between the city gate and the palace-temple

The continuation of the passageway from the first door of the city-gate complex has been chosen as the area of digging. According to F.P. Albright[9], «entering the city through the triple-gate complex in the first century A.D., one would have found himself in a not very large open area (there were some small structures which we did not take time to excavate completely, for they seem to have been simply stuck at a late date). But looking straight forward from the inner gate, one would have faced a large and imposing structure built against the city wall at a distance of 12 m from the inner city gate». The «large and imposing structure» mentioning by Albright is the so-called palace-temple.

The area at work was designed as A8, grid G 10-11. Its general dimensions were 10.0 (EW) x 5.0-5.3 (NS) m. The main goal of the activities was to understand the layout and configuration of the space between the main entrance and the main building of the city.

Unfortunately, at least half of the area (next to the first door) was spoilt by unfinished

[9] F.P. Albright, 1982, 19.

American excavations which did not provide the report of unearthed structures, and further building activities (construction of a stepped path for tourists) in this part of the ancient city. The work was concentrated in two areas: 1) the lower area (c. 5.3 x 4.0 m in size) next to the city entrance; 2) the upper area (c. 6.5 x 4.0 m in size) in the corner formed by two walls – the Eastern palace-temple wall (M16) and the Northern city wall (M15).

2.1 The lower area

As stated above, the low area was spoilt by unfinished American excavations and building activities. The depth of the cultural deposits was not sufficient to determine the stratigraphy of the area with certainty but several conclusions can be made. The general elevation of the strata is from the East to the West, i.e. from the city-gate to the inner part of the city.

The lowest stratum (US38) reached at the low part of the trench was a very hardly cemented floor leading from the first door of the monumental entrance towards the city.

The thickness of the stratum is 10-20 cm; the elevation from East to West is c. 10 cm. The floor could be traced from a stone doorstep uncovered behind two stone bases of pillars standing against two pylons of the first door. Ruins of a stone structure of unclear character, revealed in the NE corner of the square, were probably connected with this floor (Fig. 19). What remained from the structure were the last rows of two perpendicular stone walls c. 30-60 cm wide. They separated an area against the Northern city wall, which was, probably, filled with rough stones and mud forming a kind of square or a porch, or a low platform. It measures 2.75x2.35 m.

A bronze coin (Co 36) of 5.3 type (Sedov, 1998) was found in hard brown loam filling above the floor which gives some ideas on the possible date of the stratum (see below).

The next stratum (US22) consisted of hard dark brown loam mixed with a very small amount of pebbles, animal bones and seashells. It covered the ruins of the structure in the NE corner of the square, and was topped by a floor (?) of packed earth (very soft in the NW corner, against the city wall). A number of bronze coins (Co 21 – 4 pieces, Co 25 – 2 pieces, Co 27 – 1 pieces), a grinding stone, a small stone disc with centred hole (S47), two carnelian beads (D1 and D2), a bone handle of an iron (?) projectile (B1) were found in the stratum. The thickness of the stratum is 10-35 cm, the elevation from East to West is 40 cm.

The upper stratum (US29) corresponds to the similar stratum in the upper area (see below). It was made with heavy packed pebbles mixed with dark brown loam (a kind of «filling»), and its top was covered by greyish lime mortar (a kind of «floor»). It remains only in the Western, mostly untouched part of the area. As can be traced in the section (Fig. 20) crumpled brown to greyish loam mixed with stone of medium size and ash layers constituted the Eastern part of the stratum. Apparently, it was the cultural deposits of the last inhabitants of the city. A big fragment of seashell (*chlamys townsendi*) used as an incense-burner or an oil-lamp (Sh 5) was found in the stratum. The thickness of the stratum is 35-40 cm, the elevation from East to West is c. 45 cm.

The stratum of destruction (US21) corresponds to a similar top stratum in the upper area (see below). It consisted of dark brown loam and numerous roughly dressed and undressed stones fell down from the top part of the Southern pylon of the first door of the monumental entrance. The thickness of the stratum is c. 1.5-1.6 m.

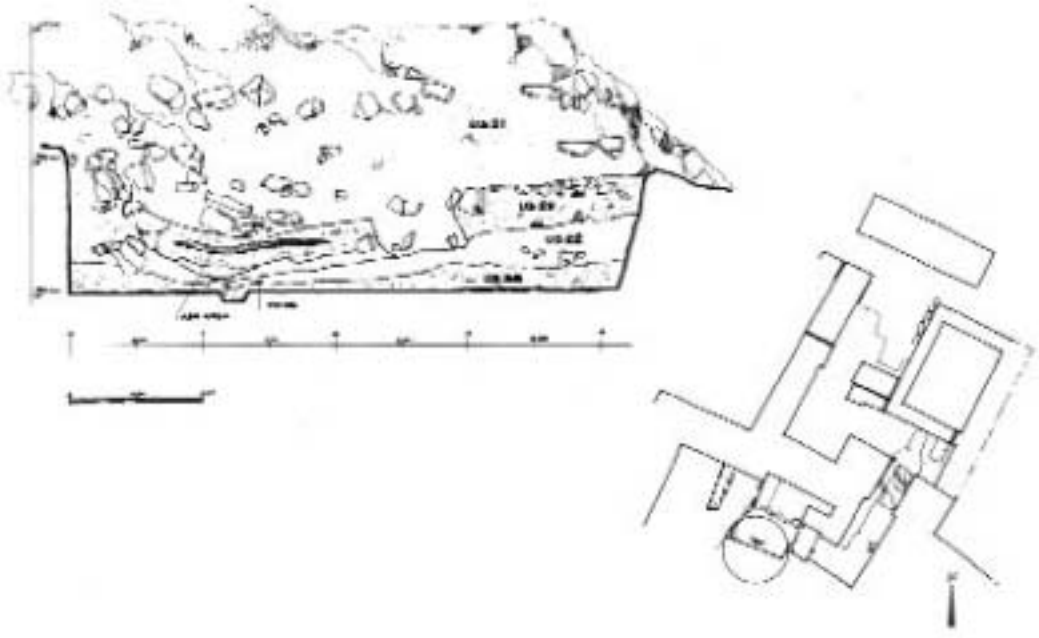

Fig. 20 - Area between the city gate and the palace – temple.
Stratigraphic section near the most internal door (*lower area*) *(drawing by V. Labianca)*.

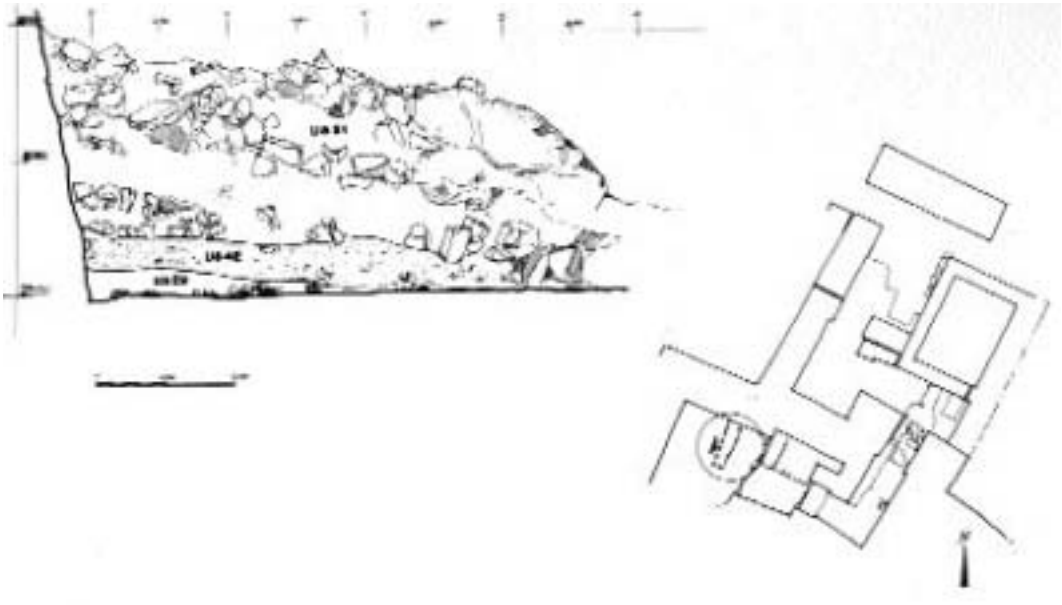

Fig. 21 - Area between the city gate and the palace – temple.
Stratigraphic section near the palace–temple (*upper area*) *(drawing by V. Labianca)*.

2.2 The upper area

This is the only untouched area of cultural deposits revealed in this part. The stratigraphy of the cultural deposits, from the top to bottom, could be determined in the following way (Fig. 21):

The top stratum (US21) consisting of dark brown loam and big amount of roughly dressed and undressed stones fell down from the top parts of temple and city wall. A small amount of pottery shreds, fish and cattle bones, seashells were found in the debris. A fragment of a massive bronze ring (MB13), a grinding stone (S45) also come from the stratum. Limestone polished facing slab (c. 35x45 cm in size) and fragment of very fine lime plaster were found in the upper part of the stratum. Its presence gives a strong support to the idea of the existence of some structures on the top of the walls. Most probably, they were dwelling premises with well-executed interior and exterior walls. The thickness of the stratum is 1.25-1.4 m.

The next stratum (US42) consisting of dark brown crumpled packed loam with very few amounts of small stones. It was accumulated above the last living surface, a floor, in this part of the city (see above). The thickness of the stratum is 25-30 cm.

The following stratum (US29) lithologically could be divided into two parts:

a) The upper part was formed by heavy packed pebbles mixed with dark brown loam (a kind of «filling»), and its top was covered by greyish lime mortar (a kind of «floor»); numerous fish and cattle bones, seashells as well as pottery fragments, a bronze coin (Co33), a fragment of bronze vessel (MB14), a shell disc (Sh4) and a stone weight (S43) were found in the upper part of the stratum. Its thickness is c. 20-25 cm.
b) The lower part of the stratum was revealed only in the NW part of the area where it constitutes the filling of a subterranean kitchen-room. It consisted of dark brown loam mixed with big and medium size stones, ashes, pieces of charcoal, fish and cattle bones, seashells, pottery shreds including base of a local storage jar with inner coating and an archaeologically complete kitchen olla (the so-called Indian RPW) with stone lid (S57), a complete small stone vessel (S51) and fragment of alabaster vessel (S55), grinding stones (S52, S53, S54), low stone of hand mill (S50), fragment of a bronze finger-ring (MB15), fragments of blades of iron knife (MI 2) and dagger (MI 3); three bronze coins (Co30, Co31, Co32) were found in the filling of the kitchen-room. The thickness of the low part of the stratum is c. 1.2 m.

As stated above, the NW part of the area was occupied by the subterranean (?) almost square room, c. 3.1 x 2.6 m in size (Fig. 22).

It looks quite probable, that it was dug in the filling or in the cultural deposits accumulated in this part of the city during the previous phases of occupation. Probably, cultural deposits were consolidated on the top by gravel filling.

Plastered low parts of palace-temple and city walls were used as the Northern and Western walls of the room. The plaster of the temple wall has traces of fire or smoke. The Eastern and Southern walls of the room were made of roughly dressed stones facing, most probably, the walls of the pit initially dug for the room's construction (a kind of a corner pillar) which was carefully plastered (as well as adjacent part of the city wall). An amorphous bench, c. 60 cm wide and c. 20 cm high, made of stones covered by clay, was

Fig. 22 - Area between the city gate and the palace – temple.
View of the interred room: on the left, the offering table is visible.

constructed along the Western wall of the room.

An entrance to the room, c. 1 m wide, was in its SW corner, along the temple wall, and was designed as a small staircase (only the lowest step made of rough stones has been unearthed so far). The floor of the room (US40) was made of packed earth mixed with lime mortar.

An open fireplace dug into the floor occupied the centre of the room. Its core was an oval pit, c. 30 cm in diameter and c. 20 cm deep, with a small channel, 13x32 cm in size and 10 cm deep, attached to it from the South (to put firewood inside the fireplace?). The floor next to the East of the fireplace was covered with plaster. A trapezoidal stone, 40 x 32 x 5 cm in size, using, probably, to cut some foodstuff was found *in situ* on this plastered square (Fig. 23).

It seems that exactly in the fireplace there was once a kitchen olla, which was found in the low part of the stratum US 29. Probably, a stone lid covered it. The artefacts found in the filling of the room as well as the filling itself give very clear indications about the possible function of the room: it was a kitchen (A 14).

The stratigraphical position of the room is not very clear. A layer of the greyish «floor» which has been traced in the upper part of US29, was not found above the filling of the room, but in which way they corresponds to each other, the «floor» and the filling, it still remains unclear. It must be pointed out only that the kitchen was constructed before the «floor», and was abandoned when the «floor» was still in use (see below).

An offering table connected to the final phase of the greyish «floor» was brought to light in the SW part of the square, against the outer face of the Eastern wall of the palace-temple (US41). A flat stone, 60 x 30 x 10 cm in size, was dug into the «floor» placed perpendicularly to the temple's wall. It was very likely used as an altar. A part of secondary used offering table with gutter, 60 x 38 x 8 cm in size, was placed next to the stone to collect liquid (blood? water with incense? milk?) from the altar and to drain it into a small channel, 17 cm wide and 15 cm deep, dug along the wall. The channel was filled with ashes, charcoal and small fragments of animal bones. Its sides were cemented probably thanks to regular flows of sacrifices (Fig. 22). The offering table was in use by the last inhabitants of the city, and definitely after the abandonment of the kitchen-room: the stone «altar» was placed in the room's entrance on the top of its filling.

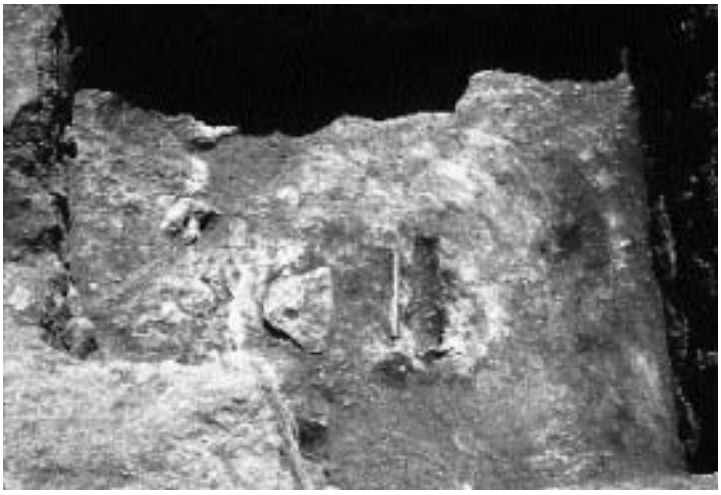

Fig. 23 - Area between the city gate and the palace-temple.
The interred kitchen room with the fire-place.

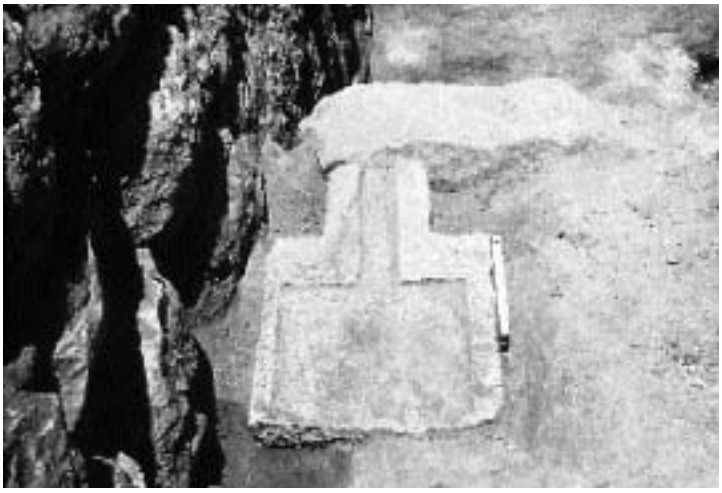

Fig. 24 - Area between the city gate and the palace-temple. The offering table..

The results of the excavations in the area between the city-gate and the Eastern wall of the palace-temple, as well as the results of ^{14}C analyses of three charcoal and one wood samples from cultural deposits, allow us to draw some general conclusions.

a) The earliest floor revealed so far in the lower part of the excavated area is the floor bordering the stratum US38 from the bottom. The dark brown loam accumulating above it (US38) can be dated close to the first quarter of the 3rd century A.D. The coin Co 36 found in the US38 belongs to the issues of Ili^{c}adhdh Yaluṭ, son of ^{c}Ammidhakhar, king of Hadramawt who ruled c. A.D. 200-220. Thus, the two strata above it (US22 and US29) can be dated between the second quarter of the 3rd century and the first half of the 4th century A.D.
   The ^{14}C analysis of a sample from the low part of the stratum US21 gives the date 1630±40 BP (GX-26645). Thus, we can come to the conclusion that life in this part of the city stopped between 280 and 360 years A.D., and that the destruction started in that period.
b) The offering place (US41) unearthed along the outer face of the Eastern wall of the temple must be dated back to the last phase of the city occupation which, according to our present knowledge, can be dated close to the early 4th century A.D (cf. late Himiyarite coinage, bronze «series with *Bucranium*», found in 1998 at the Operation 4, 79.2, and the Operation 3, 39.1). Radiocarbon sample collected from the drainage channel gives the date 1650±40 BP or the range between 260 and 340 years A.D. (GX-26643).
c) The construction of the interred kitchen-room (A14), found in the NW corner of the upper square, must be dated prior the installation of the offering place, but the exact date of its construction is uncertain. Two radiocarbon samples from the filling of the room (stratum US29) give the date 1960±40 BP (GX-26644) and 2000±40 BP (GX-26645) or the range 50 B.C. – A.D. 30 and 90 – 10 B.C. accordingly. Unfortunately, the above mentioned dates cannot be referred to the period of construction of the kitchen-room with certainty: the samples came not from the floor of the room but from its filling above the floor. We cannot exclude the possibility that the room was filled with remains of the structures probably existed on the top of the city and temple walls which fell down after the abandonment of Sumhuram (cf. above about the absence of the greyish «floor», which has been traced in the upper part of the stratum US29, above the filling of the room). In such case radiocarbon samples GX-26644 and GX-26645 give the possible date for construction of the structures above the walls but not the date of construction of the kitchen-room.
d) Strata US42 and US21 were accumulated after the abandonment of the city, when the destruction of its city and temple walls as well as the possible structures above them was in progress.

3. The area of the palace-temple

The last intervention was carried out on the area inside the palace-temple and the area outside its North-Eastern corner, where we noticed some kind of buttress that Albright had not mentioned.

Fig. 25 - Area inside the palace–temple.
View of the mud–brick wall.

The first survey was carried out in the area (A10) comprised between the Northern wall of the palace-temple (M19), that coincides with the city wall and the large wall (M20 and M21) built near the well.

3.1 The mud-brick wall

After bringing to light the stones fallen from the adjacent walls, we found a mud bricks filling accurately arranged in rows of three stones each. The horizontal layers were separated by around 5 cm of very compact soil. The size varied from 33 x 22 x 6-8 cm. Towards the Western wall of the palace-temple the mud bricks appeared to lye under some fallen stones of the wall. The top layers of mud bricks did not cover the entire area; in the Eastern and Western part only hard reddish soil was present; this is probably due to the destruction of the mud-brick layer by the stones that had fallen on the wall. Once reached the first complete layout of bricks, half filling was left *in situ* for a length of 3.35 m, while the Eastern part was removed, for a length of 1 m (Fig. 25).

The Western wall of the palace-temple (M18), once brought to light, appeared connected to the Northern one corresponding to the city wall. Under the mud-brick layers we found a base of irregular stones. It is very likely that it is a mud brick wall built, for stabili-

Fig. 26 - Area outside the palace–temple. View of the rampart on the NE corner.

ty reasons, by laying as a base some stones before putting the regular rows of mud bricks.

Our present state of knowledge does not allow us to advance hypothesis about the purposes for which that wall was built, but we can state with a good degree of certainty that the structure, only part of which has been found, cannot be the filling of the area A10 and that it could be the remains of a wall which could be, very likely, the lower part of an external wall of the higher rooms.

3.2 The external buttress

The buttress adjacent the NE corner of the palace-temple seems to be constituted by a double wall structure (M24 and M25) alternated with rooms with stone filling, placed both between the walls and between the more internal wall and the city wall.

With regard to the external buttress and its adjoining internal wall, there is evidence that they have been built at the same time to strengthen the Northern city wall or in order to create a further defence tower. They must have been shaped like a semicircle of about 19 m (fig. 26).

As far as the stone filling between the city and the first wall (M24) is concerned, even though a definitive conclusion cannot be inferred yet, it seems probable that it is part of the same building phase.

The presence of crumbled mud-bricks in the debris found on top of the wall suggests the hypothesis of the presence of a second floor. Well dressed elongated stone blocks present on the top of the filling probably come from the crowning of the city wall and/or were part of the partition between the first and the second floor. Similar well dressed

blocks have been found among the stones fallen from the city wall on the internal NE corner of the palace-temple.

Regarding chronology, the few diagnostic shards found in connection with the two walls (M24 and M25) give a *terminus post quem* for their construction the 3rd century A.D., that is to say the late phase of Sumhuram. The same is true for all, but one, shards from the filling between the city wall and the first wall. In fact the presence of a fragment of an amphora Dressel 24 is a contradicting evidence, since this type of amphora is dated to the beginning or the middle of the 2nd century A.D.

4. First hypothesis on the urban structure

On the basis of the analysis of the emerging wall structures and the results of geophysical scans carried out in the Western area of the city, we started advancing some hypothesis about the urban structure of Sumhuram.

As we already said, the city walls were built first. Houses and stores (about 10-12 m thick) were added later. They are adjacent to it and use the city walls as one of their internal walls.

Sumhuram's urban structure is characterised by the presence of two streets that run almost parallel in an Eastern-Western direction. It was possible to accede from both of them to the houses comprised between the streets themselves and the wall structure and to the double row of houses and stores situated between the two streets.

Judging from the present state of our works, it seems that in the central area there are no emerging structures. It is very likely, thus, that near the entrance path to the city and more precisely South of the more internal door the two streets were connected and formed a large empty area (a square?).

The path followed by the two streets is very easy to determine in some traits, where the entrances to the houses are still visible (South-East corner and North-West corner). Along the Southern side we can still see a secondary path that, passing between two houses, connected the street to the city wall and more in particular to the flight of steps used to reach the top of the wall itself or with a turret that today is not visible any more.

The most important buildings, that is the palace-temple and the gate complex, were on the Northern side where the majority of defensive structures were concentrated: they were turrets connected to the walls and placed on the Eastern and Western corner of the above mentioned side and external turrets that were not connected to the city wall.

Some buildings (stores, artisans' workshops ?) were adjacent to the trait of city wall comprised between the palace-temple and the more internal door.

Inside the palace-temple there was also the only well of drinkable water we know the existence of, whereas we have found no tanks for the preservation of water yet.

The Southern-Eastern area of the city was destined to stores[10] (Fig. 2).

[10] F.P. Albright, 1982 , 33.

5. First hypothesis on the urban hydraulic system (V. Castellani)

The superficial stratum of the ground at the foot of the hill of Khor Rori seems to be formed by layers of rocks which have been only slightly eroded by atmospheric agents, and a very thin top layers homogeneously covered with fragments of rocks indicated on the cartography as «stony plains». The absence of fertile lands, the intact morphology of superficial forms, the uniform distribution of fragments of rocks on the superficial stratum are all elements that led us to think that in the past this area was never used for agricultural purposes. In more than one point at the foot of the hill there are traces of what we think were probably caves: we found some calcareous blocks used for the construction of Sumhuram.

This situation is not characteristic of the whole coast. West of the city of Taqah, and thus a few kilometres West of Khor Rori, we found alluvial deposits that lent themselves well to agricultural purposes.

In his study of the ancient city of al-Balid, Albright brings forwards some arguments in favour of the existence of ancient large cultivated areas favoured also by the presence of a relatively deep water-bed of drinkable water as indicated by the limited depth of the wells found and the existence of a spontaneous vegetation that stretches itself almost as far as the sea. Even though al-Balid dates back to a period that is certainly posterior to the settlement of Khor Rori, Albright thinks that these cultures could be dated back to the period to which the Islamic settlements belong, and that they probably were the main source of agricultural products for Khor Rori[11]. In his vision the loss of the fertility of the fields caused by the lack of experience of their users could be one of the many factors that played a definitive role in the abandonment of ancient Sumhuram.

5.1 Hydrology

The rocks around the site of Khor Rori consist mainly of carbonate and thus subjected to karstic phenomena, which are sometimes visible along the flat desert surface. In such a context we cannot speak of a water-bed in the strict sense of the term because the subterranean waters, instead of impregnating the ground, tend to run along the fractures situated under the layers of rocks. The existence of springs along the coast has to be seen within a hydro-geologic perspective, supported also by the evident fact that the well dug starting from the palace-temple of Sumhuram in order to reach the water almost reached today's level of the sea. In such conditions water provision for the settlement had to be based on deep wells or on the exploitation of rain water. As far as this last method is concerned we have to notice how rain fall, even though it was regulated by the monsoons was very scarce. Recently we acquired the following data: the average monthly fall for July and August were respectively 27,0 and 26,7 mm (107 mm per year).

It is immediately evident that despite the summer monsoons in the months of July and August the region suffers greatly for a lack of rain fall, almost at the level of total aridity which is conventionally fixed at 50 mm of rain per year.

Historical data show that in this conditions dry-farming is still possible (see for example the type of agriculture practised by Israel in the Negev desert starting from the 1st mil-

[11] F.P. Albright, 1982, 52.

lennium B.C. and continued until the 7th century A.D. by Nabataeans, Romans and Byzantines). This type of agriculture requires the presence of basins for the collection of rain water in a proportion comprised between 20:1 and 30:1 with the cultivated land, towards which the water is directed by means of a complex system of canals for its collection and distribution. In this way with only 20 mm per year of running water it is possible to provide fields with more than 4000 m^3 (4 millions litres!) of water per hectare of cultivated land, sufficient to allow an adequate development of cultures.

We must notice how in these climatic conditions the presence of cultivated land would be very clearly indicated by the traces of the systems necessary for the collection of water, be they under the ground level (wells or interred conduits[12]) or the collection of rain water (collection basins and distribution canals). The absence of any trace of these structures in the area of Khor Rhori is an unquestionable proof of the fact that in the ancient times agriculture was not practised in that region.

Given the absence of direct roofs, such as the presence of large areas covered with hydraulic mortar, it is more difficult to reach definitive conclusions about a possible contribution of rain water to the city's provision of water. Generally speaking we notice how the area occupied by the city structures inside the city walls is about 7000 square metres. If it was possible to reach such a limit, the average quantity of water collected annually in this area would be 700 m^3. If we wanted to have more reasonable quantitative data, we have to notice that also in cities with a highly developed system for the collection of water, such as the Phoenician and Punic ones, no more than 50% of the area contributes to the collection. Moreover light rain falls, measurable in millimetres, do not contribute to the collection of water because they can impregnate only the superficial layers. So we can imagine that even in the case of highly developed systems the average annual quantity of collected water was no more than one quarter of the total quantity (in total about 180 m^3).

With an average temperature of 30° C., the daily need of water for a person resting in the shade is about 2.5 litres. In Khor Rori an accurate collection of water could have satisfied the needs of about 200 people, which is probably the number of the inhabitants of the settlement. If this is the potential quantity of water that could be collected, we have to notice how in Khor Rori the efficiency of the system was considerably inferior to the one characteristic of the regions where these systems were extensively used in ancient times. As far as the use of this system in the ancient times is concerned in the Phoenician-Punic area, in a letter of el-Amarna (second half of the 2nd millennium B.C.) the king of Tyre, Abimilki, tells Amenophis III that his city can survive very well by using only tanks for the collection of rain water. In this case, though, as well as in the ones of the systems of tanks in Birgi, Carthage, Tharros, Ustica etc., on which we have many documents, rain fall was more than 4 times superior to the one of the region of Salalah. In such conditions from a surface of only 10 square metres, such as the roof of a small building, it is possible to collect annually about 4000 litres of water, that is the quantity needed by four people, whereas in Khor Rori it was possible to collect less water than the quantity needed for one person. The conclusion that we can draw from this is that whereas in the other places mentioned above also small buildings and families could collect the quantity of

[12] Birks & Letts, 1976.

water needed, in Khor Rori this operation would have required the contribution of all the inhabitants.

5.2 The urban hydraulic system

At the present state of our researches, and as far as the handling of water is concerned, inside the city wall we found a well and some small channels, to which we have to add the probable presence of one or more than one tank.

The well in the palace-temple's area has been used for a long time, as it is indicated by the signs left by the ropes on one of the ancient borders. They also show that originally the opening of the well opened itself at the same height as today's walking level. Albright says that he reached the bottom of the well, that at the time contained no water, at a depth of about 25 metres.

When we explored it, its depth seemed to be about 20 metres, very likely because of the debris cumulated there. The disappearance of the water might have been caused by many different reasons. It might have depended on a lowering of the water bed due to a decrease in the inflow of water coming from the mountains (less rainfalls) and/or by the rising of the coast. Because of the karstic quality of the soils, it might even have been caused by an evolution of the hydraulic network that led to the formation of sources at a lower level.

The digging of a 25 metres deep well (equivalent to the height of today's 7 level buildings) testifies of a good degree of planning expertise accompanied by a considerable set of technical notions.

Fig. 27 - Internal part of the palace–temple. View of the well and the recent additions.

We have to mention here the fact, a detail that strangely is not mentioned by Albright, that the well's sides, even though they are covered, indicate how the well itself had a «telescope» section, that is a section that appears at regular intervals, once every 5 rows of covering stones, progressively decreasing from top to bottom.

Such a structure, which is well-known also for other more ancient works (for example the first well in the Kopais basin in Beothia, that can be attributed to the end of the 2nd millennium), had to make the structure of the walls more solid and secure, but it might also correspond to details of the construction, such as the presence of temporary platforms placed at different levels of the hole.

At the moment the opening of the well seems to be blocked by a recent masonry work. The study of the accessible photographic documentation shows that even before this intervention the opening underwent many changes. In the original photos taken by Albright[13] we can see around it the presence of a low wall made of squared stones that rises around the opening of the well for more than half metre.

The signs left by the ropes indicate that this wall was added long time after the well was used. So either the well originally opened itself at the same level as the floor or this wall corresponds to a phase when the walking level was elevated, lengthening at the same time the protection of the well's opening

Photographs taken in a later period, published recently, show also that after Albright the fencing of the well was seriously damaged. On the leaflet published in the Oman Daily Observer «Dhofar, land of frankincense» in 1997 there is a photo (p.19) in which we can clearly see that the wall is not there any more and that the opening of the well opens directly on ground level. Already in 1979 in the text «Oman, a seafaring nation», published by the Omani Ministry of Information, we can find a photo (p. 21), where the opening of the well is already seriously damaged: the first stone of the SE corner of the internal protective covering of the well is missing. We can thus draw the conclusion that not only the cement and metal structure that today protects the wall but also its external structure have been built recently: they should be removed and substituted with something more appropriate (Fig. 27).

The basin near the well seems too be still in the original place, curiously not in line with the well, but in line with the near Northern wall. The systems for the inflow of water in the basin, testified by the presence of the hole at the back, were destroyed almost completely.

As far as the opening for the outflow is concerned, for many reasons it is not easy to agree with Albright according to whom it was a later intervention. First of all we have to notice how since the basin was without any doubt used to contain a liquid, it seems very natural that it needed an emptying system, at least because of the necessary periodical cleaning operations. Its bottom shows also some erosion signs due to a prolonged flowing of the water, so we can imagine that the emptying of the basin was not a rare occasional operation. The inflow and outflow openings seem to have a very similar structure, whereas the cavity created along the higher border of the basin as an «overfull» outflow opening seems to be executed in a rougher way. All this elements suggest that the basin was origi-

[13] F.P. Albright, 1982, pl. 9, fig. 12.

nally predisposed, for reasons that are still unknown (rites?), to contain periodically liquids only in a later period, once this function ceased to be, it was used only as a water reserve after the opening was opportunely closed.

Unfortunately the collapsing of the wall has hidden the channel and the entrance to the underground passage that brought the water from the basin to the area external to the well. Judging from the photographs taken by Albright it seems that at the time the entrance to the passage was, at least for a large part, blocked by a row of stones.

To have more information about this trait of the conduit, we will have to wait for the restoration of the sides of the walls. We can clearly see, though, the mouth of the passage, at the basis of some kind of recess in the Western external wall of the palace-temple.

Curiously the passage seems to be blocked by hanging sediments of red mud cemented on the vault. On the stones that form the walls of the passage, near the mouth, two opposite rectangular cavities seem to be predisposed to form some kind of barrier for the passage itself, indicating that perhaps the passage had more complex functions than the mere emptying of the waters. The removal of materials both inside the passage and near its mouth will allow us to elaborate more precise hypothesis about its functions, the possible existence near the external wall of a basin for the collection of water (a trough?) and the prosecution of the conduit through the city walls.

Another proof of the existence of water conduits is provided by the small channels found along the ancient entrance path and the one indicated by Albright in the city. This one too is covered with sediments, but could be easily freed.

Because of the scarce number of proofs at our disposal, it would be hazardous to ad-

Fig. 28 - Several architectonic elements regarding water conservation procedures found in the town.

vance any interpretative hypothesis. At the moment these channels indicate only the fact that the city had some system to handle the water without being able to say which were exactly the functions and how they worked.

We can only notice how, as it seems now, the channel along the entrance path ends and disappears just outside the first city gate; this leads us to imagine that it did not carry dirty water, and that probably it was used to discharge the rain water that came from some large building (the palace-temple?).

In this respect we have to notice how, if it is true that rain-falls of middle intensity were rare, the only ones that are relevant in order to determine the amount of water inflow, exceptional events are not infrequent. So, for example, in the month of May the average rainfall was only 13.7 mm, but also a rainfall of 269 mm. was recorded. The emptying system was probably predisposed in such a way as to cope with exceptional rainfalls. If this is so, we would have another proof that rain water was not used as a water reserve for the city.

The tanks deserve a few words apart. So far we have found no room with mortar coverings that might suggest the fact that it was used as a water reserve. It would be surprising, though, if we found out that the city did not have such reserves. A clue indicating the presence of such tanks is the finding of a squared stone with a hole in the middle, the shape of which is very similar to the one of the leads that cover the tanks, like the ones that for a long time have been in use in many cultures (fig. 28).

The presence of opportune tanks near the wells is a constantly present characteristic typical of the city of al-Balid (even though it was built in a later phase). Until the suspected presence of a tank near the area of the palace-temple is proved, we can only conclude here that the presence of a tank connected to the well seems extremely likely, whereas it also seems possible, if not probable, that other wells and other tanks are lying under the debris that unfortunately still cover a large area of the city.

6. A first outline of the archaeological finding

We will mention briefly the archaeological material found during the excavation works, dividing it into the main groups of findings (coins, ceramic and non ceramic material). In future works this material will be analysed more in depth and catalogued[14].

6.1 Coins

During the 1999 and 2000 campaigns we found about 40 bronze coins, the majority of which is now being cleansed and restored. They were found in stratified areas (see. *supra*), into the numerous piles of back-fill earth and on the surface as well.

At the moment we can give precise indications only about some pieces that have been already restored or others that were already readable when they were found.

In particular two coins (Co1 and Co4), found under the pile of back-fill earth in A7, have to be connected to Yashhurʾil Yuharʿish, son of Abiyasaʿ, mukarrib of the Hadramawt. They were minted in the first half of the 1st century A.D. This type of coin, very common in the Hadramawt, shows a male head facing right, on the obverse, and an eagle with open wings, on the reverse. This type of coin (catalogued by A.V. Sedov as «type 4») that presents strong Roman influence, was in use until the III century A.D.[15] (Fig. 29).

6.2 Ceramic findings

The numerous shards found during the archaeological works mostly come from non stratified areas. Despite this, since no accurate studies have been carried out yet and in this field this material has not been catalogued systematically[16], all the findings brought to light so far have been catalogued in order to have a complete classification of all the types of ceramics found in Khor Rori.

Up until now we have found only one complete vase – the very first one from

[14] To catalogue the material we adopted homogeneous criteria; each finding was given a code using the following procedure: a) date of the archaeological campaign (ex. SUM99 or SUM00A); b) Stratigraphic Unit; c) progressive number within each Stratigraphic Unit (ex.: SUM00A, US5, 3).
In order to maintain a distinction between the different groups of findings, distinguished on the basis of their material (stone, shell, bone, metal, baked clay etc.), to each code we added a second symbol that indicates the material (ex. S = stone; B = bone; Sh = shell; MB = metal: bronze; P = pottery; Co = coin; etc.) and a progressive number relative to the individual categories, independent of the Stratigraphic Unit.
So a stone object has the following code: SUM99; US2, 10, S11.
Ceramic fragments were kept separate from all the other categories and were catalogued with a different numeration, that indicates only the stratigraphic unit within the individual archaeological campaigns (SUM00A; US3, 18); the second code has been though omitted.
Intact and complete vases were treated differently: the criteria used are the same followed for the other findings (ex. SUM00A; US29, 10, P1).

[15] A.V. Sedov, 1998, 227.

[16] The study of the ceramics objects found in Khor Rori is not satisfactory. F.P. Albright (1982, 92-94) described only 17 meaningful ceramic fragments without accompanying the description with a drawing. P. Yule and M. Kervran, in a recent contribution (1993), published the results of the analysis of 21 ceramic findings brought to light in Khor Rori. For a discussion of their work, s. also, J. Zarins, 1997, 663 ff.

Fig. 29 - Coin of type 4, Obverse and Reverse.

Sumhuram[17] – inside the filling of the kitchen-room (US 29). It is a kitchen olla, with a carinated profile and a flaring rim, that belongs to the so called Indian Red Polished Ware (Fig. 30 and 31).

Even though the study of pottery is still in the preliminary phase, cataloguing the most common types gave us extremely interesting data, that show how very differentiated the production was and that are supported by the recent, even though limited, studies on the topic[18].

Almost all the pottery found in Khor Rori was wheel-made, even though there were also fragments of hand-made vases.

A very high percentage of the fragments belongs either to objects produced locally or to objects that belong to the typology common in Hadramawt[19]. They are mainly storage jars made of clay mixed with straw; some of them are with inner coating. Other ceramics objects destined to the kitchen is hand-made and contains, as temper, many greyish minerals, the presence of which makes them resemble the pottery made of soft grey stone (chlorite) that are commonly found in Hadramawt.

There is also a considerable percentage of fragments of numerous types of amphorae imported from different Mediterranean countries.

We also found, in a lower percentage, some more refined objects used for the table, most of which are imported; some of these objects are glassed and were probably imported from Mesopotamia or Iran.

The type of pottery, known as Indian Red Polished Ware and destined to culinary purposes, was very wide spread; we found it in fact in stratified areas (see above). Finally, even though their percentage is very low and they were found in non-stratified areas, we also brought to light some fragments that can be catalogued as *terra sigillata*.

There are also shards that cannot be catalogued yet and that will be studied and analysed in the course of future campaigns.

If seen in their complex the data acquired give us a variegated picture, that confirms the importance of the role played by the harbour of Sumhuram for the main commercial

[17] F.P. Albright, 1982, 92 ff.
[18] P. Yule and M. Kervran, 1993, 79 ss. Cf. also J. Zarins, *l.c.*
[19] Cf. J. Zarins, 1997, 664.

Fig. 30 - Indian RPW vessel.

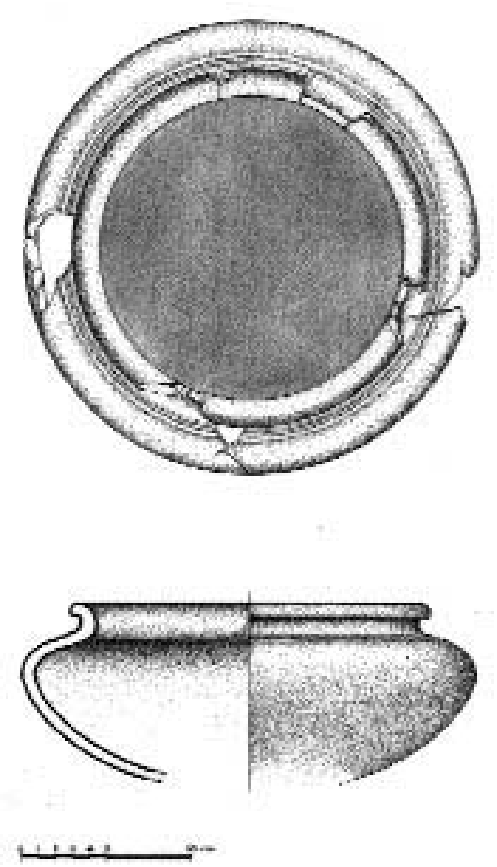

Fig. 31 - Indian RPW vessel
(drawing by V. Labianca).

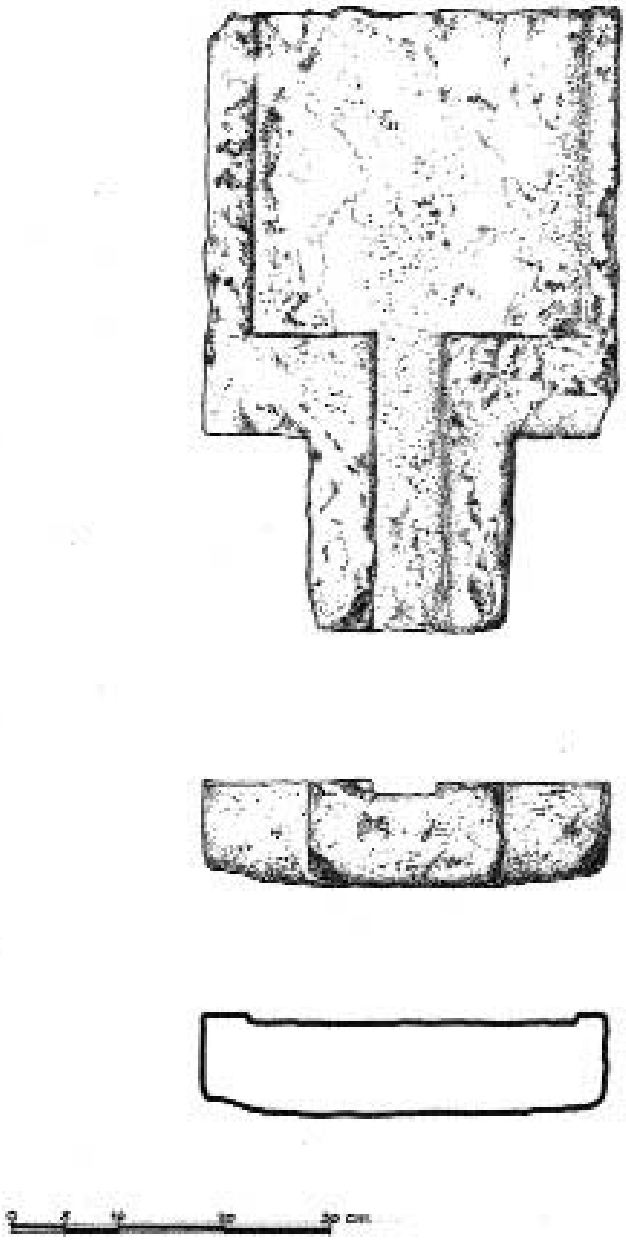

Fig. 34 - Offering table *(drawing by V. Labianca)*.

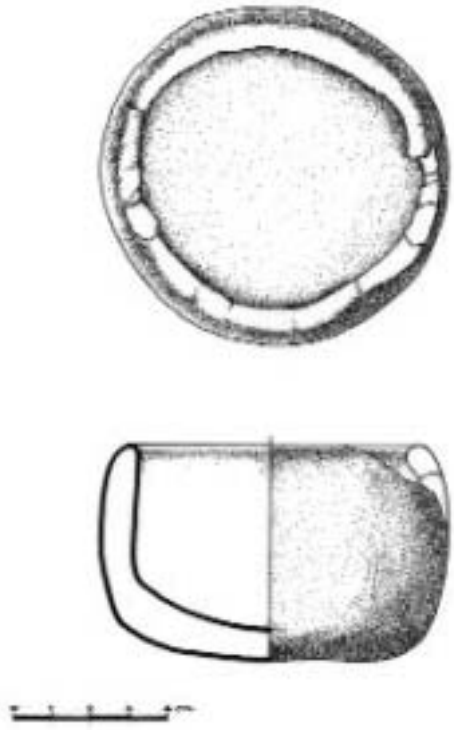

Fig. 32 - Small stone vessel
(drawing by V. Labianca).

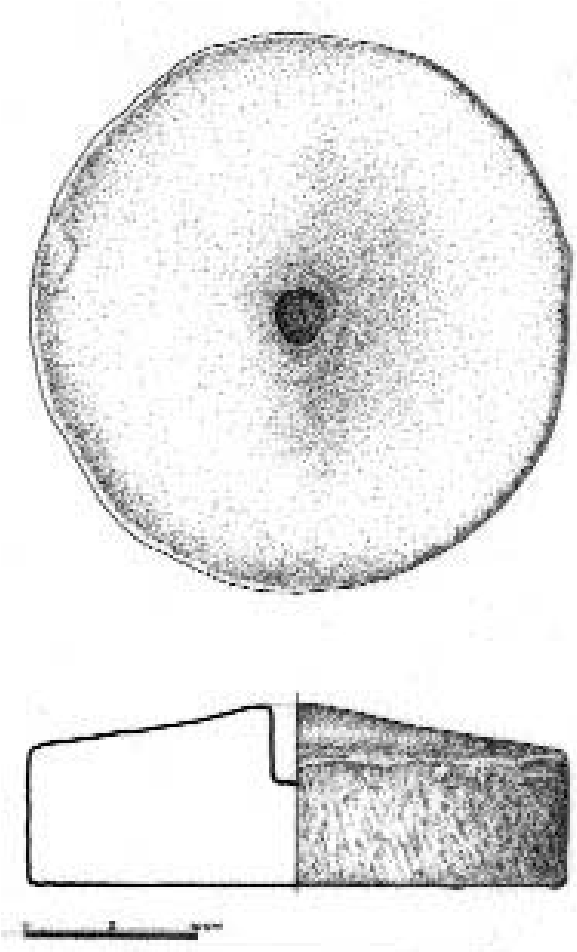

Fig. 31 - Stone of hand mill
(drawing by V. Labianca)

routes that connected in that period Rome to India's Western coast and Iran through the harbours of the Red Sea.

6.3 Non-ceramic findings

The majority of findings brought to light in Khor Rori are every day objects such as stone pestles, which bring traces of their usage, grinding stones (many of them are a pebble found in the *wadi*); numerous fragments (mostly rims) that belong to vessels made of soft grey stone (chlorite); the fragments of a smoothened axe and small every day bronze objects (nails, small buckles, etc.).

We also found a grey small stone vase still intact (S51), the inside of which is blackened by smoke and a hand made sandstone grind mill (S50). Both findings were brought to light from the area which we think is the kitchen, situated near the palace-temple (Fig. 32 and 33).

There are also roughly shaped objects used for religious and ornamental purposes made with the locally found calcareous material such as small incense burners and fragments of small vessels, on the external side of one of which there are traces of an inscription (S60) which unfortunately cannot be read any more.

The low quality calcareous material used to make this objects explains their rough shapes and, at the same time, is the proof that those objects were locally produced. The most important object is the perfectly preserved offering table with the gutter (S61), found *in situ* along the external side of the Western wall of the temple (Fig. 34).

Also the shells, that are particularly abundant in the area, were used to make small ornamental objects such as pendants, buttons etc. The most precious one (which was found unfortunately in a non-stratified area) is without any doubt the fragment of a small object, whose function is not clear, with an engraved continuous decorative pattern (Sh1). The very accurate pattern is made of some parallel lines alternated to different patterns: triangles, *guilloche,* meanders, *chevrons*. Its shape follows the shape of the shell: its top rim is

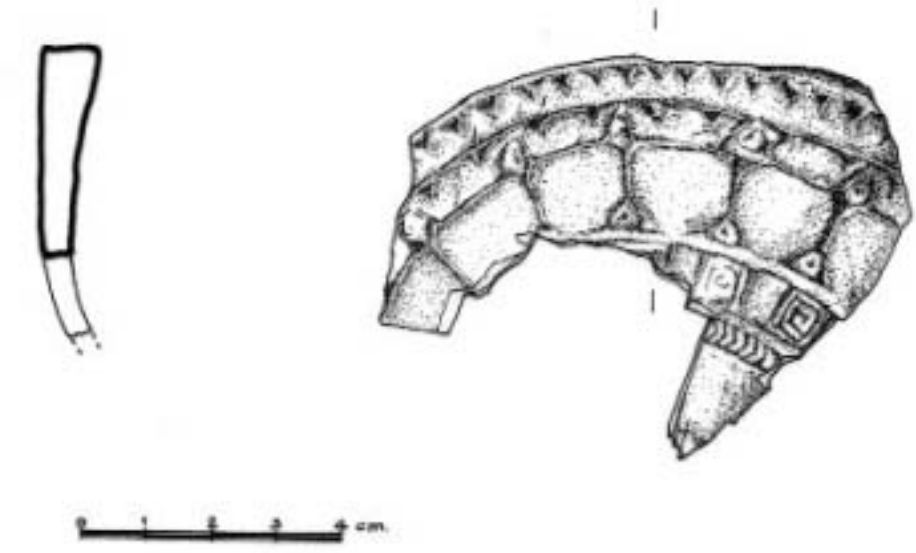

Fig. 35 - Decorated shell object *(drawing by V. Labianca).*

rounded and the surface is slightly convex.

Such a refined object was probably imported, but its discovery indicates that the inhabitants of the small harbour of Sumhuram used objects of a certain value. (Fig. 35).

Bibliography

ALBRIGHT, F.P. (1982) *The American Archaeological Expedition in Dhofar, Oman. 1952-1953*. The American Foundation for the Study of Man. Vo. VI. Washington, D.C.

AVANZINI, A. et al. (1996) «La missione italiana nel Dhofar» (1997), *EVO* 19, 181-241.

BIRKS J.S. and Letts S.E. (1976) «The 'Awanar: specialist well- and falaj-digger in Northern Interior Oman»*, The Journal of Oman Studies* 2, 93.

CLEVELAND, R.L. (1960) «The 1960 American Archaeological Expedition to Dhofar», *BASOR* 159, 14-26.

COSTA, P. (1997) «Il ruolo dell'Arabia nel commercio delle spezie e dell'incenso: da Elio Gallo a Vasco da Gama», in *Profumi d'Arabia*, Roma, 431-445.

SALE J.B. (1980) «The environment of the mountain region of Dhofar», *The Journal of Oman Studies* 2, 17-23.

SEDOV, A.V. (1998) *The coinage of Ancient Hadramawt*, Moscow.

YULE P. and Kervran M. (1993), «More than Samad in Oman: Iron Age pottery from Suhar and Khor Rori», *Arabian Archaeology and Epigraphy*, 4, 69-106.

ZARINS, J. (1997), «Aspects of Iron Age international politics and trade», in G.D. Young, M.W. Chavalas and R.E. Averbeck (eds.), *Crossing Boundaries and Linking Horizons*, Bethesda, 615-689.