

SALUT, SULTANATE OF OMAN

REPORT (2004-2005)

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The site of Salut, located about 2 km north of the modern town of Bisyah, was a centre of a large ancient agricultural oasis in one of the most fertile valleys of central Oman (Fig.1). The members of the Harvard Archaeological Survey in the Sultanate of Oman, first surveyed the site (recorded as BB-15) in winter 1973. Based on the surface material, two major periods of occupation were determined: “one in the latter half of the first millennium BC and one in the 13th-14th centuries AD”^[1]. Later, D.S. Whitcomb published the surface collection of mediaeval pottery^[2]. In winter 1974-75 Salut was visited by the archaeologists of the British Archaeological Expedition and was listed in the “Gazetteer” as “site 38”^[3]. Finally, the work of the team of the Birmingham Expedition showed especially the third millennium remains widespread within the extensive archaeological area of Bisyah, with a reconstruction line of the *falaj* and the location of Salut^[4]. The Italian Mission to Oman (IMTO) of the Pisa University began exploring the monuments of the ancient oasis on the request of H.E. Abdulaziz M. Ar-Rowas, the Adviser to H.M. the Sultan for Cultural Affairs. The first visit to the site was paid on September 23rd, 2003, and allowed us to understand the great potential value of the monuments, and their great significance for ancient Omani history and archaeology^[5].

1. 2004A Campaign (SL04A)

The ancient oasis of Salut occupied a large area in the western part of a wide valley north of Bisyah, crossed by the wadi Bahla and the wadi Sayfam. The core of the complex was the ruined fortress set up on a rocky outcrop (Fig. 2). The archaeological survey of the area was conducted by IMTO, in spring 2004^[6].

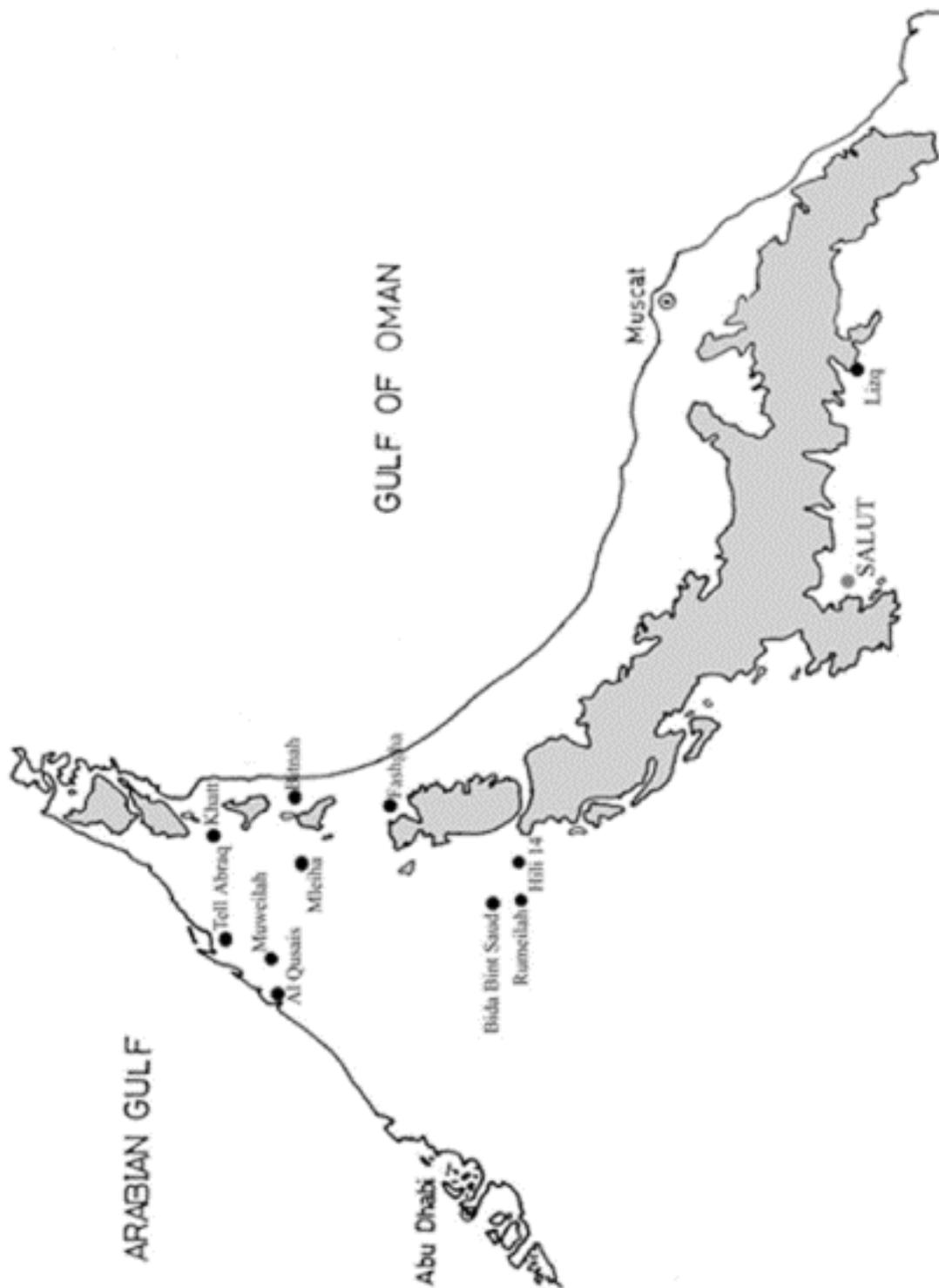


Fig. 1. Iron Age sites mentioned in this article.

The fortress is about 20.45 m above the level of the surrounding plain (the difference between the point on the western edge of the hill and the point at the eastern foothill), but the cultural deposits are not such thick: the western part of the hill is much higher than its eastern part, and the original top surface of the rock seems to slope quite steeply towards the east. The ground plan of the fortress, close to the oval, roughly 50x60 m in size, has been divided on the basis of the evidence of structures and on the large amount of pottery scattered around. A set of thirteen topographical Units (UT) has been determined. The surveyed area was the hill of Salut

and the surrounding plain for a total of 15000 square metres.

On the top of the hill there is a modern rectangular masonry structure in local sandstone. Rows of medium size square sandstone slabs, clearly visible on the top surface of the hill, indicate the defence wall of a fortress. There is a structure in the same building technique on the foot of the eastern slope of the hill ^[7]. On the west side of the top there are some isolated circular structures made of roughly-hewn stones and stone slabs, probably pertaining to a later phase than the stronghold.

The entire territory is scattered with archaeological remains, testifying to an intense peopling of the oasis over various periods. There are what are probably collapsed houses (heaps of stones where the pottery is more abundant), and irrigation structures. The presence of irrigation channels (*falaj*) can be perceived by following the lines of wells ^[8] that cross the plain north-west and south of the hill. Some of them appear to have been restored in modern times, are still working and being used for agriculture.

A large circular structure, badly preserved, lies at a distance of about 300 m—west of the Salut hill. It has walls of large squared sandstone blocks, preserved in some parts to the second row; the diameter is 19 m, considering the inner ring-wall. Comparison with a similar building in this area, suggests dating it to the third millennium BC ^[9]. Another stone circular structure, located in the plain close to the south-western slope of the hill, was included in the British Archaeological Expedition list ^[10]. More ruined and similar structures are in the plain north-east of Salut (the proximity to a local road must have favoured the pillage of the stones for building materials).

To the south-east of the hill two walls, made of small stones and mud, are still standing. Local reports state that the building is reputed to be a very ancient mosque, but the lack of archaeological materials is not enough to suggest its dating ^[11].

An Islamic cemetery occupies the lower part of the north-east slope.

The pottery collection is very homogeneous over the whole investigated area, with a concentration on the top surface and on the slopes of the hill. A previous typology of the shards, made on the basis of the internal/external surfaces and the inner components, revealed that the percentage of Iron Age shards is very small as opposed to those of Middle Islamic period (especially 'late sgraffiato' and unglazed pottery). The surface finds include also two bronze arrowheads and a bronze pin, all found on the surface of the hill.



Fig.2. Salut hill and general view of the plain (from East).

The material collected on the surface, mainly pottery, reconfirmed the existence of an extensive mediaeval occupation of this part of the valley, which could be divided into three periods: Early Islamic (VIII-X centuries), Middle Islamic (XI-XIV centuries), Late Islamic (XVI century – modern times). On the other hand, the presence of such surface material as bronze arrowheads and several distinct types of pottery vessels picked up from the surface of the central mound, indicate that a much earlier occupation may have taken place, even dating back to the late 2nd millennium BC.

2. 2004B Campaign (SL04B)

The north-eastern corner of the eastern part of the fortress (UT5), next to its stone defence wall, was chosen as a place for the test-soundings in October 2004^[12] (Pl. 1). The top part of a wide mud-brick wall was clearly visible here on the surface (it was cut by a shallow depression caused by rainwater drainage). The initial size of the sounding was 4x6 m, oriented north-south. Later, the sounding was enlarged towards the east and north. Thus, finally, we made a sounding 6x8 m oriented east-west (Fig. 3) with an additional enlargement towards the north, across the defence wall of the fortress. We summarise below the results of the test sounding following the description of determined construction phases from the bottom to the top, from the more ancient layers to the more recent ones.

2.1. Main test-sounding: description of phases, structures, layers and stratigraphical units (US)

The 1st constructional phase (Pl. 1: 2). The ancient surface of the bedrock, on which the structures of the fortress have been erected, was reached in the south-western corner of the sounding, at the point - 3.92 m from the modern surface of the hill. Here a dark-brown coloured layer (US20), consisting of very soft silt mixed with a large amount of middle size stones and sandstone chips, covered the bedrock. Its thickness was about 0.3-0.35 m.

Several body potshards of very sandy, dark-brown, thick-walled wares were found in the US20. A very low mud-brick wall (M18), only 0.38-0.4 m wide and 0.35-0.37 m high, discovered in this deepest layer, was probably intended for levelling and strengthening the slope of the mound before the erection of buildings.

The entire layer US20 including soft filling and wall M18 was covered by a very hard stratum US19, *circa* 0.45 cm thick. It was made by compacting destruction material (broken mud-bricks mixed with very hard-packed clay mortar). A very limited number of pottery fragments (only 3 body shards) and almost no organic material were found in US19, which may indicate that the formation of the stratum not resulted from living activities at the site. Most probably, it should be interpreted as a sort of construction, something similar to the foundation or socle, on which the floor and walls of one of the earliest rooms (room 2a; see below) were erected: at least the bases of three walls, M5, its continuation M19 and M11, are to be correlated with this construction whereas the fourth wall, M10, also delimiting this room, was placed directly on the bedrock.

The construction technique used in these two walls, M10 and M11, is rather similar: their foundations were made from three rows of medium-size squared sandstones and slabs placed with clay mortar, whereas the upper parts were constructed in mud-bricks, 48-50x36-38x6-7 cm in size. The other two walls of the earliest building, M5 and M19, were made exclusively from mud-bricks. The wall M5 (2.50 m long and 0.55 m wide), for instance, was constructed with one row of mud-bricks, 55-56x36-38x5-6 cm in size, alternated with a thick (*circa* 4 cm) layer of mortar. Remains of clay plaster were preserved on its interior surface. The third type of construction technique can be observed in wall M9/12 which was also the outer defence wall of the fortress. Its total thickness is 2.8 m. The external part (designated as M9) was made with sandstones, but only the first or the outer row of these stones was placed regularly in the so-called 'dry masonry technique'. The internal part of the wall (designated as M12) was made of one row of mud-bricks, and the space between two parts was irregularly filled up with small and medium-size stones mixed with clay and mud.

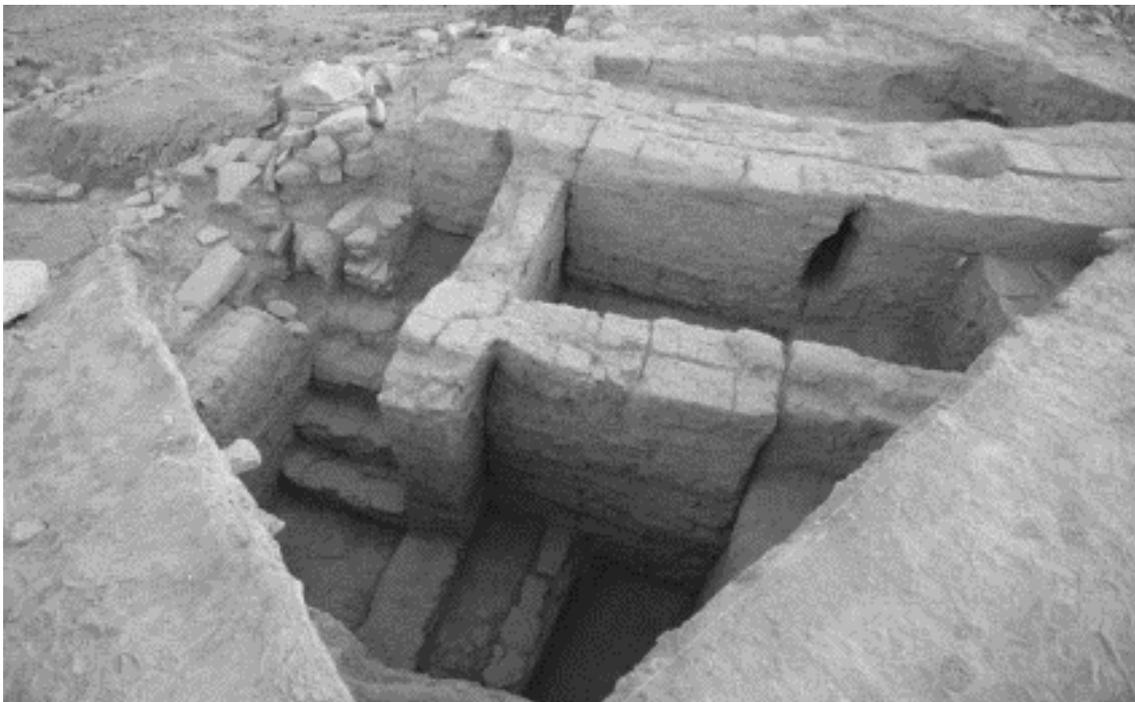


Fig.3. General view of the main test-sounding.

The earliest structures of the Salut fortress unearthed in the main sounding could be described as follows.

The corridor-like *room 1a*, 1.2-1.3 m wide, was constructed along the outer defence wall M9/M12, which served as the north-western limits of the building. The north-eastern part of the room was totally occupied by a staircase built from mud-bricks, 47x30x5-6 cm in size. Four steps, 0.38 m wide and 0.25-0.27 m high, were preserved, and staircase probably led to the top of the defence wall M9/12 and to the top of the monumental platform discovered in the eastern part of the sounding (see below). The wall M5 and its continuation, wall M19, running parallel to the defence wall M9/12, separated the room from the adjacent compartment, *room 2a*, located immediately to the south-east. Walls M10 and M11 delimited room 2a from the south-east and south-west accordingly which thus measured 2.3x4.2 m (the north-eastern wall of room 2a was apparently wall M1 but initially without internal 'skin', which was added later, in the 2nd constructional phase; see below). Roughly in the middle of room 2a, the remains of a low mud-brick partition wall (M6a) were discovered, the purpose of which is obscure. It was used as a foundation for another wall, wall M6, *circa* 0.65x1.90 m in size and about 1.0 m high, built from 56x30x5 cm mud-bricks. It seems quite probable, that wall M6 was in fact not a real wall but a sort of blockage narrowing room 2a.

Rooms 1a and 2a were connected each other through a doorway, *circa* 1.0 m wide, with a mud-brick threshold. The corner of what is probably another room, *room 3a*, delimited by the walls M10 and M16, was unearthed in the southern part of the sounding (here the space for excavation was so small that only very top parts of the corresponding walls and upper part of the filling of the room were revealed; it is difficult, for the moment, to affirm with certainty that this compartment also belonged to the earliest phase of the building).

There was some difference in the initial level of the floors or the first living surface in rooms 1a and 2a. The floor in room 1a, designated as US18floor, was made from well-compacted, sometimes

trampled clay. The accumulation above the floor (stratum US18) was not very hard and consisted of broken mud-bricks mixed with crumbly mud, flecks of charcoal and very few pottery shards. It was *circa* 0.4 m thick and covered the lowest step of the staircase.

The initial floor, or a sort of pavement, in room 2a (US15floor) was built on the top of the construction US19 mentioned above (which was apparently absent in room 1a). It was made of clay mortar mixed with straw and small pebbles (the same mixture was used for making mud-bricks and the wall plaster), was a brown-greyish colour with many flecks of charcoal and small fragments of pottery intentionally trampled into its surface. The pavement was about 3-4 cm thick in the centre and was slightly thickened towards the walls of the room. The level of the US15floor in room 2a perfectly corresponded with the level of the second floor in room 1a, designated as US16floor. Both floors were built in the same manner, although US16floor in room 1a was less hard and compacted.

The accumulation above the US16floor in room 1a, designated as stratum US16, was *circa* 0.25 m thick, light-brown in colour, and consisted of rather soft, loose mud mixed with very large amount of animal bones, flecks of charcoal and pottery fragments found in great quantities along the wall M9/12. It was not separated from the overlying stratum US14, *circa* 0.45 m thick, by any horizontal surface, but was separated from US16 because of its different character. The stratum US14 was more compact, more greyish in colour, and consisted of mud-bricks fragments mixed with mud, animal bones, flecks of charcoal and very limited number of pottery shards. It covered the two top steps of the staircase (M13), and, probably, could be considered as destruction level indicating the end of the 1st construction phase of the earliest building.

The accumulation in room 2, above the pavement, was designated as stratum US15. It was very soft, yellowish-grey in colour, and revealed a lot of ash and charcoal, large amount of pottery fragments and sometimes even complete vessels (small carinated bowls). The stratum covered room 2a completely, reaching its maximum thickness (*circa* 0.8 m) in the corner formed by the walls M10 and M11, progressively reducing its thickness towards the north-western part of the room and towards the doorway connecting rooms 2a and 1a. It was undoubtedly caused by a great fire which destroyed room 2a, the heat of which was so strong that the entire surfaces of the mud-brick walls M10, M11, partition walls M6a and M6 were completely baked and changed colour to yellowish. Similar to room 1a, US15 in room 2a can be considered as the same destruction level indicating the end of the 1st construction phase of the earliest building.

The 2nd construction phase. The ruins of the earliest building described above were almost completely sealed by a horizontal level traced all over the main sounding. This level, designated in room 1a as US13floor, in room 2a as US12floor, and yellowish-grey in colour, was made by compacting and trampling the filling of the previous structures and covering the majority of the partition walls of the earliest rooms (walls M10, M11 and M19). In room 3a, the corresponding level, designated as US11floor, was slightly lower and was made of clay mortar brown-greyish in colour. In some places on the floor we could see traces of footprints, probably made during its construction. The construction of wall M14, running in a south-east direction beyond the limits of the sounding, could be correlated with the above-mentioned

horizontal level US11floor.



Fig.4. Main test-sounding: the well preserved wall M1.

The following strata, seemingly the intentional filling of early structures, were above the common horizontal level. Inside room 3a there were two lithologically similar layers, US11 (*circa* 45 cm thick) and US9 (*circa* 50 cm thick), both light-brown in colour with dark-grey stains (especially in the southern part of the room), and composed of broken mud-bricks mixed with crumbly loess, pottery fragments and a large amount of animal bones and charcoals. Layer US11 was slightly more compact in comparison with US9. Inside room 2a there was layer US12 (*circa* 50 cm thick), light-brown in colour and consisting of crumbly silt mixed with pottery fragments and a large amount of charcoals, concentrated especially in its lower part, and layer US7 (*circa* 40-45 cm thick) containing several large and medium size stones and gravel. Room 1a revealed layer US13 (*circa* 50 cm thick), light brown in colour, consisting of crumbly and soft loess containing sandstones and few pottery fragments. It seems quite probable that all these layers, US7, US9, US11, US12 and US13, were, in fact, part of a construction which served as a foundation for the monumental building of the 3rd construction phase.

The 3rd construction phase. The layers of this phase are different in origin, and represent the period of the final occupation of the ruins of mud-brick buildings, the construction of which should be referred to the earlier phases. Pits dug down from the top stratum (US1) disturbed the layers, and sometimes the pits were hardly even visible during the course of excavations. That is why the pottery assemblage related to this phase revealed a number of fragments of mediaeval ceramic vessels.

A massive, wide mud-brick platform (initially it was denoted as walls M1, M2 and M7) was discovered in the eastern part of the trench (Fig. 4). It was constructed from mud-bricks 53-55x38-40x9-10 cm in size, placed in six horizontal rows. From the north-east, the platform was terminated by a defence wall of the fortress consisting of two parts – a mud-brick wall (M3) made from one row

of mud-bricks similar in size, and a stone wall (M4) made from one row of sandstone slabs (in fact, this is one wall M3/4, roughly 0.7-0.8 m wide, the external surface of which was made up from sandstone slabs whereas the internal surface from mud-bricks). Pit US2 heavily disturbed the top surface of the platform.

The stratum US3 connected with the second constructional phase was traced in the trench south-west of the wall M1. It consisted of dark-brown, compact loess mixed with broken mud-bricks, flecks of charcoal and fragments of animal bones. The maximum thickness of the deposits was about 1.0 m (in the north-western corner of the trench, where also a lot of degraded mud-bricks were found). Cultural deposits were accumulated above the well preserved and very compact US3 floor covering the entire area of the trench south-west of the wall M1. The floor was constructed from trampled mud mixed with a whitish lime substance. Several pits unearthed in the north-eastern corner of the trench were apparently connected with this floor. A sort of construction made from sandstone slabs was discovered in the north-western corner of the trench: two slabs were placed vertically against the façade of the wall M1, whereas the third one was placed horizontally on the US3 floor. As will become clear from the forthcoming excavation (see below the description of the results of SL05A campaign) we were succeeded in discovering the northeastern corner of a vast hall with pillars (room 1). A lot of pottery fragments, mostly from storage vessels, were discovered on the US3 floor. An L-shaped bone object, apparently for decorating furniture or a wooden box, was discovered on the floor among the pottery fragments. A terracotta figurine, camel's head, was also found in this stratum.

The 4th construction phase. The layer (US1^[13]), which made up this phase, consisted of a top few centimetres of very loose crumbled silt and sand mixed with pottery fragments and flecks of charcoal. Greyish in colour, it had accumulated above the US1 floor, which covered the entire area of the trench above mud-brick walls discovered underneath. The floor was constructed from trampled earth and was occasionally disturbed by shallow pits and open fireplaces. One of such fireplaces, 0.6x0.65 m in size and 0.2 m deep, was discovered in the southern part of the trench, next to a large rectangular pit, 1.1-1.35x4.2 m in size and 0.45-0.65 m deep (initially it was denoted as room 1 and its filling consisted of rather compact brownish loess mixed with pieces of broken mud-bricks, flecks of charcoal and fragments of pottery like US2). Apparently, the US1 floor and the stratum accumulated above it represent the very late, mediaeval phase of occupation of the fortress: the floor covered the ruins of Iron Age mud-brick structures located underneath as well as the remains of the northern defence wall of the fortress.

2.2. Extension sounding: description of deposits and stratigraphical units (US)

The main trench extended towards the north (Pl. 1) where a corner formed by two

perpendicular stone walls (M3/M4 and M8) was clearly visible on the surface. We suggested that it could be the beginning of the defence tower occupying the north-eastern corner of the fortress. In order to prove this hypothesis, an additional sounding, roughly 5x8 m in size, was dug into the slope of the fortress north of the main trench. Instead of clearing the façades of the defence wall and tower, we surprisingly cut across the defence wall of the fortress and discovered two phases of its construction.

1st construction phase. The initial defence wall of the fortress was wall M3/M4 built using a combination of techniques: its internal part was erected from mud-bricks whereas the external part from sandstone slabs. The width of the wall was about 0.90 m. The external masonry was made with sandstone slabs of various shapes placed in regular rows and fixed with yellow clay mortar mixed with sandstone chips. Its preserved height is about 3.40 m. The foundation row of wall M4 was in a shallow trench dug into the surface of the natural mound (Fig. 5). A charcoal sample was collected from the trench against the lowest row of masonry unearthed so far, which gave us the *terminus post quem* for the time of the wall's construction (see below).

2nd construction phase. Later, after a certain period of time, the defence wall of the fortress was significantly enlarged (Pl. 1). For this purpose the slope of the bedrock was first levelled with stones, earth, clay mortar and pottery fragments belonging to the stratigraphical units US6 (filling between walls M9 and M4) and US10 (accumulation of the outside wall M9). Then, an additional wall (M9) made of sandstone was placed on the slope of the mound at about 2.30 m north and parallel to the initial defence wall. The space between the two walls was filled up in two different ways: (1) to the south-east of the trench and around the NE corner of the fortress the wall was made from sandstone (M8); (2) to the north-west of the trench, along the north-western slope of the fortress, it was made from specially prepared clay mixed with small sandstones and, sometimes, with pottery fragments (the filling of this part of the wall was divided into two stratigraphical units – US4 and US5 – but they constitute a single unit). The conclusion that the north-west filling was, in fact, intentional is based primarily on its homogeneous character: the section revealed no slanting layers as we can expect in the case of collapsed wall.

The masonry of wall M9 (Fig. 6) is not very different from the wall of the 1st phase – it was also made of large and medium size sandstone slabs, placed in irregular rows; the sandstones are fixed with yellow clay mortar mixed with sandstone chips and small pebbles. The upper part of this wall, visible outside the trench, seems to be dry-stone masonry but this comes from its long exposure to the atmosphere.

The foundation of the wall M9 was placed directly on the slope of the bedrock (in the south-west corner of the trench it was at the point -5.13 m, and in the north-east corner at the point – 7.02 m.). The levelling of the slope outside the wall was strengthened with an intentional filling of silt mixed with stones, clay mortar and pottery fragments (in several places it contained few large stones fixed vertically), and, along the foundation of the wall, with clay mortar and sandstone chips. The preserved height of the wall M9 is about 3.0 m in its northern part and 4.70 m in its southern part.

The Wall M8, constructed with the same technique as wall M9, is preserved to a height of about 3.60 m, and its foundation row was placed partially on the bedrock, and partially on the sandstone chips

levelling. Its north-western part constitutes a single work of masonry with the wall M9, whereas the south-eastern part leans against wall M4.

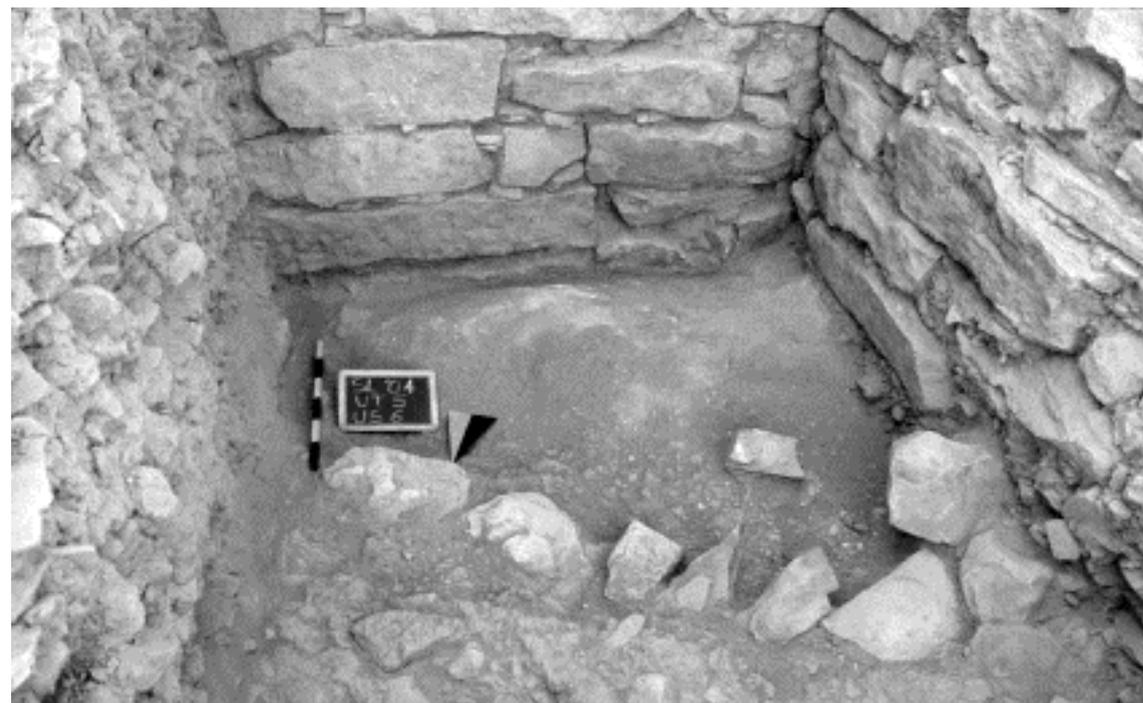


Fig.5. Extension sounding: foundation of the defence wall M3/M4.



Fig.6. Extension sounding: view of the defence walls M9 and M4.

The accumulation outside the wall M9 was divided into three stratigraphical units: US8 composed of the collapsed material from wall M9 (large and medium size sandstone slabs mixed with silt and pottery fragments); US10 - the material used to level the slope consisting of compact, brownish yellow loess mixed with large and medium size sandstone slabs and chips; US17 – rather compact brownish silt representing the ancient accumulation at the foot of the defence wall above the bedrock (there were several ash and charcoal lenses at the very top of US17) when it was in function.

We can reach the preliminary conclusion that the defence wall M4 belongs to the 1st constructional phase of the mud-brick buildings unearthed in the main trench, while its enlargement (wall M8/M9) should be correlated with the 3rd constructional phase.

3. 2005A Campaign (SL05A)

The preliminary analyses of the pottery material from the 2004B test sounding and the first results of radiocarbon dating of charcoal samples show that the foundation of the Salut fortress and the first three construction phases of its occupation should be dated close to the late 2nd - early 1st millennia BC (the so-called Early Iron Age II period on the Omani Peninsula). The site was re-occupied in mediaeval (VIII-XVI centuries) and modern (XX century) times.

The primary goals of the third campaign [\[14\]](#) were to verify the proposed dating of the site in more detail and to expose the Early Iron Age structures of the wider area. In addition, we made a survey of

the surrounding valley exploring remains of the ancient *falaj* system, the foundation of which was apparently connected with the Early Iron Age fortress of Salut.

3.1. Excavation

Two areas were chosen for the excavations in the 2005A season: Trench 1 in the north-western corner of the upper part of the hill (which was, in fact, an enlargement of the 2004B sounding), and Trench 2 in the northern part of the “lower structure”, the so-called “well”, at the eastern foothill of the fortress (Pl. 3).



Fig.7. Trench 1, *room 1a* from N.



Fig.8. Trench 1, *room 1a* from SW.



Fig.9. Trench 1, view of the wall M26 from N.

Trench 1. The following major phases of occupation were determined in the course of excavating Trench 1: three phases from the Early Iron Age period (Salut 1 and Salut 2 with intermediate phase Salut 1a), and one phase from the relatively “late” or mediaeval/modern occupation of the site (Salut 3).

Salut 1 phase. The remains of the first structures built in the Salut fortress were unearthed in the north-western corner of the trench. A corridor (*room 1a*) was constructed along the northern defence wall of the fortress (Figs. 7-8). Its eastern part ended with a mud-brick staircase which probably led to the top of the defence wall (Pl. 1, Fig. 8). Three small compartments with wide openings were constructed in the western part of the northern wall of the corridor.

Remains of a horizontal wooden beam and a door-socket stone were found in the wide entrance of the most eastern compartment, probably indicating a wooden door when the structure was in use. The stepped floor of the corridor had a stone threshold roughly in the middle of the room. Two entrances connected the corridor (*room 1a*) with contemporary premises, which have not been excavated. The visible remains (top parts of walls) lead us to surmise that quite similar structures, i.e. long corridor-like rooms, were also built along the western defence wall of the fortress.

Several radiocarbon analyses of charcoal samples and a good assemblage of diagnostic pottery provide the chronological limits of 1300-800 BC for the foundation and period of existence of the structures belonging to the Salut 1 phase. There is evidence of a quite long and intensive “constructional life” for the structures of the Salut 1 phase - several layers of successive floors with anthropogenic filling (humus strata with pottery fragments, animal bones, flakes of charcoal etc.) with, between them, several phases of additional renovated walls which partially blocked access to the rooms etc. This period of renovation may be denoted as *Salut 1a phase*.



Fig.10. Trench 1, a niche in the wall M26.



Fig.11. Trench 1, Building 1, *room 1* from SE.



Fig.12. Trench 1, Building 1, *room 1* from NE.

Salut 2 phase. Significant renovations of the lay-out and general organisation of the site were undertaken at the beginning of the *Salut 2* phase: the outer defence wall, at least its northern and western sectors, was widened, and a monumental mud-brick platform, which was delimited at the east by the stone wall M26 (Pl. 4; Figs. 9-10), was constructed. In their construction, the walls of the mud-brick structures of the *Salut 1* phase were cut at a certain height and the space between the walls, i.e. the rooms of the *Salut 1* phase, was filled up with mud and fragments of mud-bricks. From what we can judge, the north-western corner of the platform was built in this way, but for the rest of construction the ancient settlers of *Salut* chose another technique, namely specially built mud-bricks walls delimiting small rectangular compartments roughly 2.0x2.5 m in size erected on the bed-rock, and the space between them filled up with gravel and mud. The top surface of the platform was sealed with 2-3 rows of horizontally placed mud-bricks. The total height of the platform was about 2.5 m in the western part and about 1.5 m in its eastern and southern parts. The platform was used as a foundation for the mud-brick building (Building 1) unearthed in the north-western corner of the trench (Pl. 4).

The remains of the Building 1 are rather scarce but they give an idea of its general lay-out. The core of the building was a sub rectangular room (*room 1*) roughly 7.2x9.3 m in size in its northeastern corner. Six pillars (stone bases of only four pillars remain in situ) once supported the roof of the room. A stone pavement with four low steps was constructed in the south-eastern corner of the room 1 (Figs. 11-12).



Fig.13. Trench 1, mediaeval structures in the north-eastern corner of the platform.

The entrance in the south-western corner of room 1 led to a sub-square structure, 4.5x4.5 m in size, situated south of room 1. A central partition wall (M22) divided the structure into two adjoining premises, *room 2* and *room 3*. One more entrance located in the western wall of room 1 led to a corridor, roughly 1.5x9.3 m in size (*room 4* west of room 1). The staircase in the south-eastern corner of room 1 led, probably, to the room (*room 6*) located south of room 1 (completely destroyed). Most probably, the main access to Building 1 was located in the southern wall of the room. In the south-western corner of Trench 1, outside the limits of the Building 1, an oven built in stones and mud-bricks was unearthed. A complete bronze vessel, a cauldron with two vertical loop handles, was found inside the oven (Pl. 11: 9; Fig. 19: 6). Remains of two rooms, related to the building but not directly connected with the structures unearthed, were discovered in the south-western and north-eastern parts of the Trench 1. The premises denoted as *room 5* are located south-west of Building 1. Originally, probably, it was a kind of passage around structure 4, in which there appears to be the remains of a fortification tower. *Room 6* adjoined the north-eastern corner of Building 1 on the outside. It had a separate entrance in the middle of its southern wall. Room 6 is rectangular in lay out, roughly 3.0x5.0 m in size (Pl. 4).

It seems that only half of Building 1, namely its northern wing, was unearthed during the 2005A campaign. In the southern part of the Trench 1 we were pleased to discover a flat rampart constructed using mud-bricks, which led from the edge of the monumental platform towards what we hope is the main entrance to Building 1. The rampart ends with two gigantic irregular shaped stones used, probably, as bases for the pillars of a sort of propylon or portico (there are remains of a circular trunk of a column on the top surface of one of the bases). Remains of a stone pavement were found next to the northern base. The rampart led from the edge of the monumental platform where a kind of a porch, 3.0x12.5 m in size, was constructed

adjoining the external surface of the wall M26.

Salut 3 phase (mediaeval occupation). The top stratum of the site was badly disturbed by “late” structures belonging to the mediaeval period. They are normally circular constructions, approximately 2.5-3.0 m in diameter, made from roughly dressed stones and stone slabs (Fig. 13). Apparently, they represent some sort of dwellings with floors in trampled mud. Their filling consists of dark brown loose loam mixed with medium size stones, flecks of charcoal, ashes, animal bones and pottery fragments. Many small (postholes), medium and large size pits could be also associated with these structures.

Trench 2. The second trench was opened at the lower structure of the fortress located at the eastern foothill of the mound (Fig. 14). The eastern external surface of the outer wall, which was curved, was cleaned down to the virgin soil. The total preserved height of the masonry is about 2.5 m. The construction technique of the masonry is absolutely identical to that of the northern defence wall of the fortress. There is no doubt that both walls are contemporary. The sounding on the top surface unearthed three perpendicular walls dividing the inner space of the lower structure. The cultural deposits were dug down to about two meters. All the material recovered from the excavation (mediaeval pottery) shows a quite intensive “late” re-occupation of the structure.



Fig.14. Trench 2, general view from NW.

3.2. Survey

In addition to the excavation, a survey was conducted of the surrounding area exploring remains of the second Early Iron Age settlement (Salut 2) and the ancient *falaj* system apparently also connected with the Early Iron Age occupation of the oasis (Fig. 16).

Falaj. Remains of the *falaj* system were traced north-west and north of the Salut fortress.

The mother-well is located approximately 4.3 km north of the Salut fortress, immediately at the side of the modern highway connecting Jabrin and Bisyah, a few meters south of the bed of a shallow wadi. Its top diameter is about 2.0 m, and its depth some 12.5 m. The spoil ring around the mouth of the well is about 6.0 m in diameter with a maximum height of about 1.2 m. A sounding through the western side of the spoil ring determined the stratigraphy of the accumulation around the well. Two strata were distinguished: US2 – a rather compact, light-brownish loam interrupted by gravel lenses at the bottom, above the ancient surface of the plain, and US1 – a compact gravel stratum mixed with large stones on top. It seems that the lower stratum (US2) was the alluvial accumulation of the plain (or fans), through which the shaft of the mother-well was dug, while the top stratum (US1), is what remains of the gravel surface of the wadi bed where the water was tapped. Fragments of modern pottery jugs were found at the very top of the US1, close to the modern surface, indicating, most probably, the modern use of the mother-well (Fig. 16).



Fig.15. The *falaj*: open channel.

Fig.16. Sketch plan of ancient irrigation system.

A line of shafts with spoil heaps around is visible over a distance of about 2.6 km south-west and south of the mother-well, entering the Salut plain between shallow mounds in 1.8 km north of the Salut fortress. The distance between the shafts, apparently interconnected by a drainage gallery, is about 15 m.

Entering the Salut plain the line of shafts with its drainage gallery becomes an open channel (Fig. 15),

about 3.5-4.0 m wide and about 1.5-1.7 m deep, from which the water was apparently distributed to the fields once located on both sides of the channel. The channel with two major curves, towards east and north was accordingly traced over a distance of about 1.0 km. It stops at about 1.2 km from the Salut fortress changing once again into a line of shafts running southwards. This second line of shafts is, no doubt, the modern re-activation of the old *falaj* system – the shafts are constructed from concrete blocks.

Fragments of typical Early Iron Age pottery vessels were found at the surface of the spoil heaps bordering the open channel, indicating the possible date of construction of the entire *falaj* system. It should also be noted that the system described, which tapped water from a shallow water table, i.e. from alluvial fans or from the bed of the wadi, is of the so-called ‘shallow *falaj*’ type which was very typical of the Early Iron Age II period (late 2nd – mid 1st millennium BC) on the Omani Peninsula [15].

Salut 2 settlement. Ruins of one more Early Iron Age settlement (Salut 2) were discovered immediately north-west of the beginning of the open channel, roughly 2.0 km north-west of the Salut fortress (Fig. 16). Unfortunately, the settlement is located on the land of a private farm and is fenced. It was thus very difficult and almost impossible to conduct a detailed survey without prior permission and the site was visited only briefly. As far as we can judge from this short visit, the settlement consists of three separate elongated mounds about 4-6 m high, which apparently cover the ruins of mud-brick structures. The total size of the settlement is about 200x300 m. A necropolis, consisting of 30-35 lower stone mounds, is located a few dozen meters south-west of the settlement. Diagnostic pottery shards (carinated bowls, plates and large storage jars with criss-cross decoration) prove clearly that the site is contemporary to the ancient fortress of Salut. The existence of the site was not mentioned by the previous surveys conducted in the area either by the Harvard Expedition [16], or by the British mission [17].

4. Material

The finds resulting from the survey and excavation consist of pottery vessels and metal, stone, bone, clay and shell objects. With the exception of the pottery, most of the objects were found in the top strata of the site and on its surface. Below, we give a short general description of each category, sometimes with preliminary typology. The study of pottery types and their distribution according to the stratigraphy of the site, which is one of the determining aspects for dating, is in progress and will be presented in detail in forthcoming reports.

4.1. Pottery

The overwhelming majority of the pottery found in the different strata of the site is handmade. According to the paste composition and treatment of the surface, several types of wares could be distinguished: coarse ware; common buff ware; red - or brownish-slipped ware; painted ware. The categories of pottery vessels determined were: large storage jars (at least five types according to the profile of the rims) (Pl. 5: 1-3); 'craters' (three types); basins with straight or slightly rounded walls (two types) (Pl. 6: 1-6); small jars (three types) (Fig. 17: 4); bridge-spouted vessels (Fig. 17: 2; Pl. 7: 1-3); carinated bowls (Pl. 7: 4-7); bowls with rounded sides; plates; beakers; cooking pots (olla); lids (Fig. 17: 1); stands; pedestal vessels; pitchers; oil lamps.

Decoration of the pottery vessels is rather simple – straight and wavy engraved lines, bands of criss-cross incisions, circular and grain punctuation, painting in red and black. But there are several fragments with applied snake motif decorations, which is particularly interesting in the assemblage. One fragment has an oval-shaped head of a snake coiled at the lower part of a vertical handle (Pl. 8: 2). A badly preserved fragment of the wall of a closed vessel has parts of the bodies of two snakes shown in relief. The other body shard had a more worked design: two snakes, different in size, with triangular-shaped heads and elongated tongues; the small one touches the head of the big snake (Fig. 17: 3; Pl. 8: 3).

Several shards with representations of snakes were found at the Iron Age sites in Khat, Bithnah, Rumeilah and Al-Qusais [\[18\]](#). It should also be remembered that a fragment of a closed vessel with a snake in relief was found in Salut during the Harvard expedition archaeological survey [\[19\]](#).

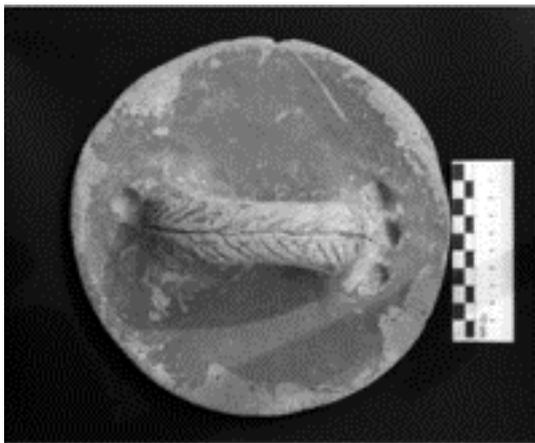
Sometimes there is some very elaborate decoration on the handles of the so-called '*oil lamps*'. These are vessels with a shallow open reservoir with straight walls and a flattened long horizontal handle, and almost all the pieces from Salut have traces of secondary burning inside the reservoir. There are three types of design on the handles: engraved or impressed lines and/or grooves, snake motifs, and representations of other animals.

The first type of design is an engraved herring-bone decoration or a decoration of impressed oblique grooves (Fig. 18: 1).

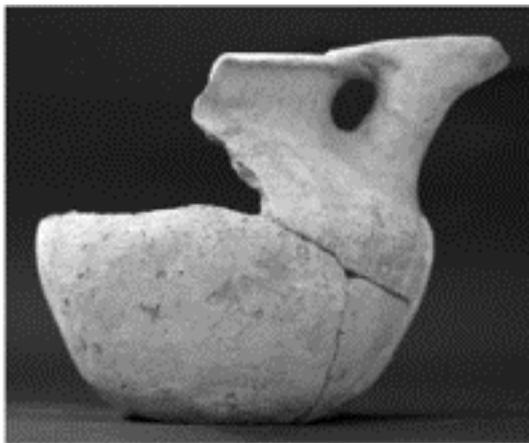
The pieces of the second type can be divided in two categories. In the first one there is no diversification of the subject appearing: the snake motif is simply an application on the upper surface of the handles. The snake representation is usually decorated with unevenly punctuated circles along the wavy body (Fig. 18: 2; Pl. 10: 6). The total length of the handles is 9.7-14.5 cm and the total width is 3.5-5.1 cm. In the second category, every piece has one peculiarity, namely that the handle takes the form of the animal and ends with the head of the snake. The decoration is similar – unevenly placed punctuated circles along the body. One of the representations has a slightly projected nose with a slightly opened mouth shown as a wide groove; the eyes are shown as two punctuated circles. The other representation is rather

caricatured and grotesque: the nose, slightly projected, has two nostrils, the opened mouth is showed as a wide groove on the edges of the object (Fig. 18: 3; Pl. 10: 5). The sizes of these two handles are: length 11.2 and 13.1 cm; width 5.4 and 4.4 cm; thickness 2.2 and 2.2 cm. Only one piece has the third type of decoration. On the upper surface of the handle there are several representations in relief: an axe with a long handle in the middle (its blade with engraved decoration is pointed to the right); two fishes shown on both sides of the axe; a ram's head with globular eyes and C-shaped horns ended the handle (Fig. 18: 4; Pl. 10: 7). The dimensions of the piece are: length 14.0 cm, width 4.6-5.7 cm, thickness 2.8 cm and the diameter of the reservoir is 15.0 cm.

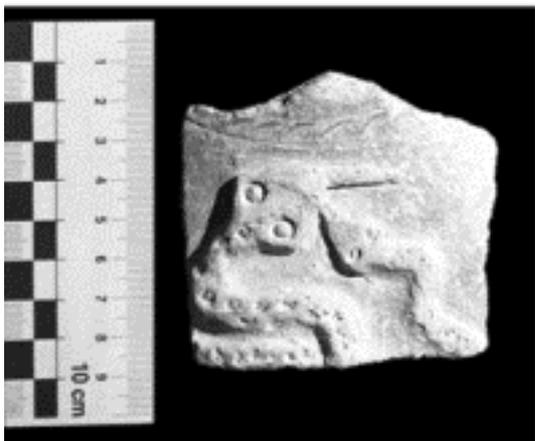
Fragments of handles with a simple engraved decoration and an *appliqué* snake motif were picked up from the surface of the Salut fortress (site BB-15) by the members of the Harvard Archaeological Survey [\[20\]](#). Two similar examples of oil-lamps or incense burners were published as coming from the 'Mound of Serpents' in Al-Qusais (Dubai) [\[21\]](#).



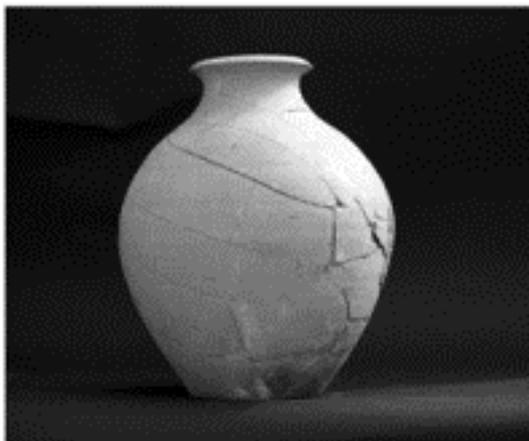
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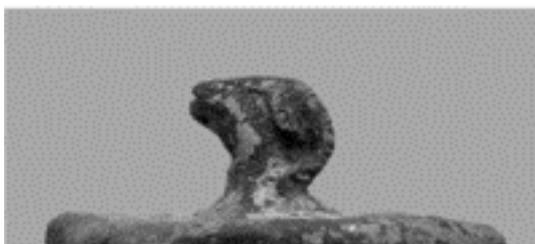
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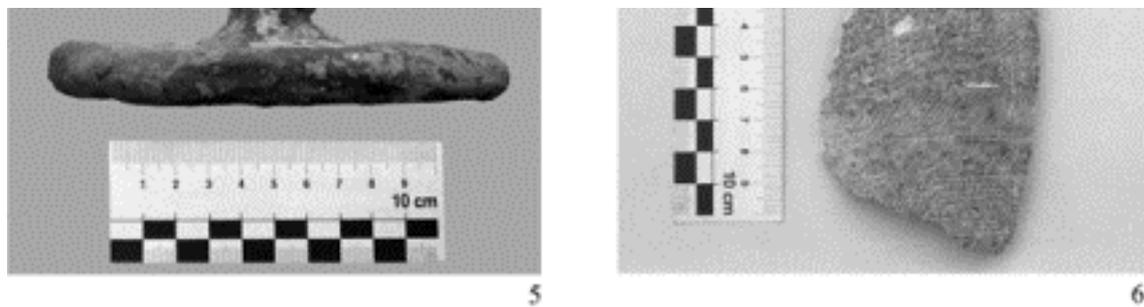


Fig.17. Salut, 1: lid; 2, spouted vessel; 3: fragment of jar with snakes; 4: jar; 5: lid; 6: soft-stone vessel.

4.2. Metal objects

The metal assemblage is represented by different kinds of tools and weapons, vessels, personal ornaments and decorations, and objects having a possible votive function. The majority of pieces were made from copper or bronze (analyses of the alloy have not yet been carried out which is why we denote pieces as copper/bronze), but the presence of fragments of several iron objects should be specially mentioned. It is well known that “until the middle of the 1st millennium B.C., the metal mostly used in the so-called “Iron Age” Omani cultures was bronze”^[22], and the finds of objects made from iron are extremely rare^[23]. It seems that here, too, Salut is an exceptional site among the contemporary monuments of the Omani Peninsula.

Weapons and tools. Altogether twenty one complete (18 pieces) and fragmented copper/bronze **arrowheads** were found in different strata of the top periods of occupation of the site and/or on its surface. All belong to the category of the tanged arrowheads or arrowheads with the stem. Following the general typology proposed by P. Lombard^[24], they were divided into three types: leaf-shaped, triangular, and lanceolate arrowheads.

Type 1 – leaf-shaped arrowheads (12 pieces). The most numerous pieces, different in size, have a more or less rounded blade and elevated midrib (in some cases absent). The blade section is roughly rhomboid, the stem is quadrangular in section. Total length of pieces – 3.8-5.7 cm; length of blade – 2.9-4.4 cm. (Fig. 19: 2, Pl. 11: 1).

Type 2 – triangular-shaped arrowheads (2 pieces). The pieces have elevated midrib; the blade section is flat, the stem has oval or rhomboid section. Total length of pieces – 4.0-4.5 cm.; length of blade – 3.2-3.4 cm.-(Pl. 11: 2).

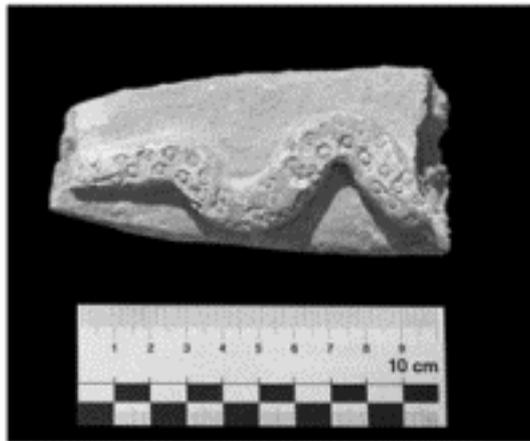
Type 3 – lanceolate arrowheads (7 pieces). The section of the blade is rhomboid or flat while the section of the stem is quadrangular; the midrib is only slightly elevated. Total length of pieces – 4.9-5.3 cm; length of blade – 3.2-3.8 cm. (Pl. 11: 3).

One of the leaf-shaped arrowheads could be classified as a *spearhead* although this is rather hypothetical (Fig. 19: 3; Pl. 11: 4). The shape of the blade is asymmetrical triangular with a very flattened raised midrib. The blade's section is rhomboid; the tang is rectangular in section. The total length of piece is 11.0 cm; the length of blade – 7.0 cm. In fact, considering Potts' classification ^[25] the piece is too light (31,67 g.) for a spearhead. It should also be noted that the object from Ghalilah tomb, quite similar in size (length is 9.5 cm), was classified by P. Lombard as an arrowhead ^[26].

A fragmented copper/bronze shaft *hoe* was found in the top strata of occupation of the site, on the US3 floor inside the room with pillars. The blade is sub-rectangular with a rounded lower part and sharpened edges; its section is ellipsoid (Pl. 11:7). Typologically similar hoes are known from Qala'at al-Bahrain, Rumeilah and other Early Iron Age sites in the Eastern Arabia ^[27]. The dimensions of the object are: length – 9.5 cm, width – 10.8 cm and diameter of shaft – 2.6 cm.



1



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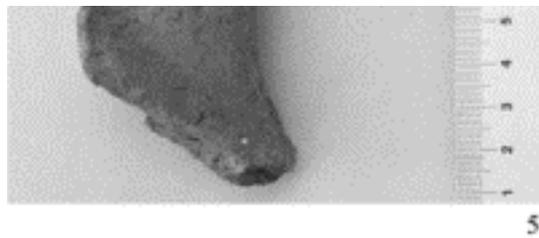


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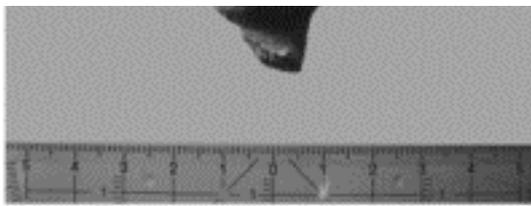


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5



6

Fig. 18. Salut, 1-4: oil-lamps, 5-6: backed-clay figurines.

The functional purpose of the complete copper/bronze object found in the top strata of the site is not clear. Its shape is roughly oval with a central shaft-hole raised as a cylinder. It is probably some kind of *shaft-handle* for a wooden object. The length of the piece is 7.4 cm, its width is 3.8 cm, its thickness 0.8 cm and the diameter of the hole 2.2 cm. A massive iron *loop-handle* was also found in the top strata of the site. Probably, it was a finial of iron rod, hook or knife. The diameter of loop-handle is 3.0 cm and the section 0.8-1.0x1.3-1.5 cm.

Two complete copper/bronze *razors* with straight backs and slightly rounded sharpened edges, probably used to scrape leather, were found in the top layers of the site. One of the pieces could be classified as a razor with tang handle, and the other as the razor with flat handle which is the continuation of the blade. The length of these razors is 3.3 and 4.3 cm.

Quite a number of fragments of copper/bronze tools in the shape of pointed rods, rounded or quadrangular in section, were found in different layers of the top period of the site. Unfortunately, in the majority of cases it is not possible to specify precisely what all the pieces are. Probably, some of them might belong to needles, while others to pins, awls or other kind of similar tools and/or personal ornaments (see also below). Two almost complete *needles* (Pl. 11: 5) according to their sizes, were most probably used for sewing leather. The length of complete needles is 7.0 and 27.0 cm. and the diameter of section is 0.4 and 0.5 cm.

A few fragments of *knives* were found in the top layers of the site and there are two almost complete pieces. One is a blade of a knife made from iron. It has a straight back, a pointed tip (the other end is broken) and one sharpened edge; the section is triangular. The length of the piece is 6.6 cm; its maximum thickness 0.7 cm. Another piece is made from copper or bronze, and has a rather thin double-sided blade, a rhomboidal section, and a pointed tip (the other end is broken). The object was folded. The proposed length of the object is 7.5 cm and its thickness 0.3 cm.

An object, which could be the lower part of a blade with broken tip of an iron double-sided *dagger*, was found in the US1 on the top of the monumental mud-brick platform. The blade is rhomboidal in section, and has pointed midrib. The maximum width of blade is 5.6 cm; its maximum thickness 2.4 cm. One more fragment of blade also of a double-sided iron dagger, together with fragments of iron tanged handle and a piece of rod, was found on the US3 floor in the 'pillared hall'.

A complete copper/bronze *chisel* was made from a rounded rod. One end of the tool, slightly banded, was flattened and sharpened, whereas another end bore traces of hammering on its top surface (Pl.

11: 6). The length of the object is 3.4 cm, the diameter of the rod 0.5 cm. Another chisel was made from a flat copper/bronze rod. One end was sharpened, and another one broken. The length of object is 3.2 cm and its section 0.3x0.6 cm. A similar object, but slightly bigger in size, is known from Rumeilah [\[28\]](#).

A complete tool made from copper/bronze rod quadrangular in section was found in the top strata of the site. One end is pointed and another rounded: it was probably used as an *awl*. The length of the object is 9.3 cm; the size of the section 2.6-3.2x2.6-3.2 cm. A fragment of a probably similar tool made from rectangular copper/bronze rod was found on the US23floor in room 2 of Building I. Both ends are broken. The length of the piece is 4.4 cm and its section 2.2x2.8 cm. A fragment of iron rod, rectangular in section, with a pointed end, could be also interpreted as part of an awl. The length of the object is 3.9 cm and its section 4.5x5.3 cm.

Vessels. A complete copper/bronze *cauldron* was found inside the oven discovered immediately to the SE limits of Building I (Fig. 19: 6; Pl. 11: 9). It has a hemispherical body with flat, slightly convex base and two vertical loop handles fixed at the upper part of the body. The rim was folded and flattened on the top, and elaborated on the exterior with a wide groove. The handles, oval in section, were fixed to the body by four rivets fixing to both the external and internal surfaces of the body two parallel thin rectangular plaques obtained by hammering the lower parts of each handle. The cauldron was hammered from a single piece of metal. Traces of secondary burning on the exterior as well as the place where it was found indicate a probable utilitarian purpose of the object. The diameter of the rim is 31.0 cm, the diameter of base 22.0 cm and the height of the vessel 20.0 cm. The maximum height of the handles above the rim is 5.5 cm, the maximum width of the handles is 12.0 cm and the diameter of the rounded section of the handles is 1.2 cm.

Two bronze bowls from the grave in Bydia (Emirate of Fujairah), dated close to the beginning of 2nd millennium BC, have single vertical handles similar to the cauldron from Salut [\[29\]](#). Unfortunately, their sizes are too small for a direct comparison. Two bronze vessels, a cauldron and a large bowl, are known from Iron Age graves in Israel. Their size as well as their rounded vertical loop handles with similar technical details of the fittings could be taken as good parallels for the cauldron from Salut [\[30\]](#).

A small copper/bronze conical *lid* of a miniature vessel was found on the US23floor in the room 2 of Building I. It has a shallow oval cavity on the internal surface. The diameter of lid is 3.1 cm and the height 1.8 cm.

Personal ornaments and decorations. A number of copper/bronze finds could be classified as personal ornaments. These are *rings* with rounded open ends, probably used as fingerings, and few banded wires used, probably, as clasps. Rings with pointed opened ends may be *earrings*. The same function is suggested for a ring fragment with an elaborate pendant which was somehow attached to it. A small bell-shaped *pendant* with circular hook on the top is of particular interest. A small hemispherical *bead*, made from gold foil and slightly dented in many parts, was found on the US23floor in room 2 of Building I. The diameter of finger rings is 2.1-2.5 cm; the diameter of complete earrings is 1.7 and 2.3 cm; the diameter of the golden bead is 0.6 cm. Fragments of rounded

or flattened copper/bronze rods, sometimes with one end pointed and the other decorated with grooves, could be identified as parts of *pins*. The diameter of the rods is 2.3-3.5 cm.

Fragments of at least two copper/bronze *mirrors* in the form of discs were found in the top strata of the site. There are remains of a handle attachment on one of the fragments: two small holes (a rivet preserved in one of the holes) near the edge of the disc.

Many objects, identified below as copper/bronze *plaques*, were found in the top strata of the site, scattered around above the US23 floor in the eastern part of room 2 of Building I. Some are rather small, thin rectangular pieces with two holes on the edges, while others, with slightly rounded ends, have the third additional hole in the centre with, in some cases, the rivets for fixing still preserved. The size of the complete rectangular plaques is 0.8-1.0x2.4-2.6 and 1.1x3.6 cm, the diameter of the holes 0.2-0.3 cm and the length of the rivets 1.2-1.3 cm. A trapezoidal plaque with folded edges was probably once attached to the tip of a leather belt. Its size is 0.6-1.5x1.9 cm. There are also a number of hemispherical or convex/concave plaques with edges slightly pleated for attachment. The diameter of the hemispherical plaques is 1.8-2.6 cm. They were most probably used for decorating leather belts or perhaps other kind of dresses, but we also suggest the different function of the rectangular pieces for restoring wooden and/or clay objects (vessels?).

Among the hemispherical plaques there are two of particular interest. Their external top surfaces were decorated with dots punctuated from the inside. We are in full agreement with Lombard's proposal about the use of a similar plaque from Rumeilah as the metal base of a quiver, made in perishable material; the arrows would have been slotted, inside the quiver, in this base with cavities/holes^[31]. The diameters of the plaques with dots are 2.3 and 2.6 cm. *Votive objects*. The following pieces were identified as votive objects.

A complete copper/bronze '*plaque*' in the form of snake with a banded body, triangular head and pointed tail was found on the top surface of the monumental mud-brick platform, immediately SE of the 'pillared hall' (Fig. 19: 1; Pl. 11: 8). The top surface of the body was richly decorated with tiny punctuated dots, and the eyes were shown as slightly bigger punctuated dots. The length of the 'plaque' is 16.9 cm, the width 1.3 (head), 1.0 (body) and 0.3 (tip of tail) cm and the thickness 0.5 cm. A fragment of another similar 'plaque' was also found: the first band of the body and the rhomboidal head are preserved.

Identical 'plaques' are known from the so-called "Mound of Serpents" at al-Qusais^[32]. The presence of such objects in the form of snakes as well as *appliqué* snake decoration on the pottery vessels probably testify to the existence of a specific cult widespread in the south-eastern Arabia (including Salut) during the Iron Age period^[33].

A miniature copper/bronze *axe* was found in the top strata of the site (Fig.19: 4). Its shape is trapezoidal with a tubular shafted handle; the edge of the blade is sharpened. The piece was made by hammering. The length of the blade is 4.0 cm, the width 1.5 and 3.6 cm, its thickness 0.25 cm, the length of shaft 2.2 cm and its diameter 0.6 cm. Several non-utilitarian bronze axes, different in shape

from the Salut piece, are known from an Iron Age grave context in Al-Qusais, Hili 8, Qarn Bint Sa'ud and from Rumeilah [\[34\]](#).

A massive copper/bronze object was found on the US3 floor in the room with pillars. Despite the very poor state of conservation, it is reminiscent of a sort of *finial* of a wooden (?) object (standard?) with a hemispherical base and a V-shaped antenna-like projection at the top terminating with something similar to camel's heads. The proposed diameter of the base is 12.0 cm and the height of the object is about 8.4 cm. Some comparisons for the object, although quite remote, could be found in Luristan bronzes and in the antiquities from Scythian mound burials ('kurgans').

4.3. Stone objects

The lithic assemblage is mainly represented by *grinders*, *pestles*, *hammer-* and *whet-stones*, *crushes*, *polishers* etc. Some of them were definitely used as combined tools, for example, for hammering and grinding. Most of the pieces were made from pebbles picked up in the neighbouring wadis, and were, no doubt, linked to domestic activities such as the grinding of cereals. Vessels and personal ornaments made from stone were found as well.

Vessels. During our two campaigns of excavations we found seven fragments of soft-stone vessels and two alabaster vessels. All fragments were found in strata belonging to the top period of occupation of the site or were picked up from its surface. Similarly to other scholars, we prefer to use the generic term 'soft-stone' instead of more specific terminology such as 'chlorite' or 'steatite' vessels, which needs the precise mineralogical analyses. Our preliminary classification of soft-stone vessels is based on simple visual and comparative examination, and, in general, follows the classification proposed by P. Lombard: bowls, converging-wall vessels, suspension-vessels, compartmented-boxes [\[35\]](#).

Bowls are represented by several fragments of flared walls and flat bases. The rim of such vessels is usually thick and horizontally cut and in rare cases has a beak-like profile. Their diameters are between 15.0 and 22.0 cm –and the thickness of the walls is 1.0-1.2 cm. One of the fragments with a flattened rim has three engraved signs (graffiti) on the outside: the first is rhomboid with a dot inside, the second has a butterfly shape, and the third is rhomboid with a criss-cross sign inside (Pl. 9: 5). A somewhat similar decorated hemispherical bowl from

Mleiha was dated close to the Late Iron Age period [\[36\]](#). One more vessel, with a beaked rim and less flared walls, shows the most committed engraved decoration of all the soft-stone vessels from Salut (Fig. 17: 6; Pl. 9: 1). It consists of five horizontal bands (stripes): the top band consists of 13 parallel lines; the second contains rectangles filled with three series of five vertical circles with central dots, and separated by vertical stripes with a criss-cross pattern of engraved lines; the third band has oblique lines which alternate with triangular fields filled with single circles with central dots; the fourth band has a series of circles with central dots and the fifth band consists of criss-cross lines.

A fragmentary wall (its thickness is 0.7-1.5 cm), decorated with a horizontal row of circles

with central dots surrounded by two bands of criss-cross incisions, belongs to the so-called *converging-wall vessels* (Pl. 9: 3). These are a type of closed vessels, and usually their profile is rectilinear but they can also be rounded and the base is flat or convex.

An almost complete small vessel with a slightly concave base and rectilinear profile belongs to the type of *suspension vessels*. It has four ovoid cavities for inlays on the upper part of the wall which were probably used for the insertion of metal plaques. We consider that these plaques were probably used for the suspension of the vessel. A phytomorphic design, in the form of four leaves, is symmetrically engraved on the body (Pl. 9: 2). The diameter of the vessel is 6.3 cm. and its height is 5.3 cm.

One fragment from Salut belongs to the *compartmented-boxes*, the type of vessels which usually has a rectangular shape, slightly flared walls and a flat base; the internal part of the vessels is divided into two symmetrical compartments. In contrast with samples usually found on the Omani Peninsula, which have rectangular shaped internal compartments, the fragmentary piece from Salut has circular compartments. On the exterior there is an engraved decoration of triangles between vertical lines. The appearance of these kinds of vessels

probably dates close to the Late Bronze period ^[37], and they are usually found in the grave context. Compartmented-boxes are known from Iron Age sites such as Rumeilah, the Bithnah graves and Tell Abraq, but the circular shape of the internal part of Salut example has no comparisons. The size of the fragment is: 5.3 x 6.1 cm- and the diameter of compartments is about 4.0 cm.

There is a big fragment of a soft-stone vessel from Salut, which does not fit the above-mentioned types. It's an open vessel with a rounded rim and slightly converging walls. A light stepped carination separates the rim from the body. The external surface is intentionally rough worked. The diameter is 20.0 cm. Probably, this kind of vessel could be classified as *pot*.

A small circular *lid* of light grey soft-stone belongs to the type of lid with a short grip (handle) ^[38]. The bottom is broken but it seems quite finished. On the upper surface the lid has a decoration composed of one row of double circles with central dots around the edges there are short oblique lines (Pl. 9: 4). The upper diameter of the lid is 6.7 cm and the height is 3.4 cm.

A similar lid is known from Rumeilah ^[39].

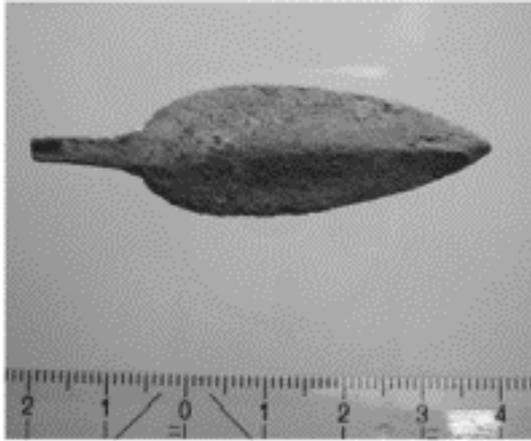
The stone finds also include two almost complete *alabaster vessels*. The smaller one could be identified as a cosmetic vessel (Pl. 9: 7). It has cylindrical shape, pointed rim and flat base. Its height is 3.6 cm and the diameter of the rim is 2.9 cm. The second one belongs to the category of 'beehive'-shaped vessels: it has a flat base and a rounded rim (Pl. 9: 6). Its height is 7.3 cm. and the diameter of the rim is 5.0 cm. The alabaster 'beehive'-type vessels are well known from monuments in modern Yemen ^[40].

Personal ornaments. The assemblage of personal stone ornaments is represented mostly by *beads* and *pendants*. There are two of carnelian beads, one is barrel-shaped, and another flat-rhomboidal. Both have smoothed surfaces and a canal drilled from two sides; the total lengths are 1.0 and 1.6 cm and the diameter of the canal is 0.1 cm. Two flat-discoid shaped beads have rounded edges and smoothed surfaces; one is made from a dark-grey stone, and the other from green stone; the diameters of the objects are 0.7 and 1.1 cm-and the diameter of the holes is 0.2

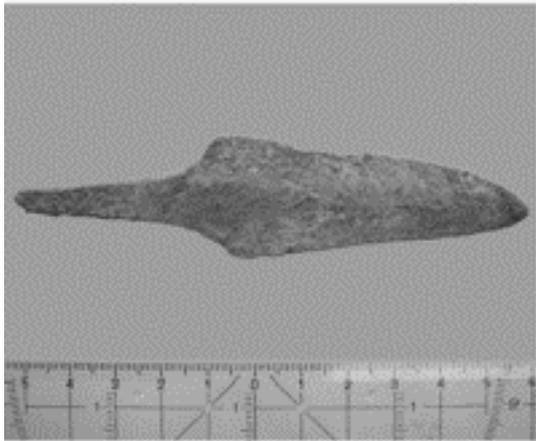
cm. One barrel-shaped bead was made from whitish agate, and a tronconical bead with linear decorative incisions on the exterior from limestone (the length of pieces is 2.0 cm., the diameter is 1.7-1.9 cm. and the diameter of the hole is 0.3-0.6 cm). A fragmentary rectangular shaped pendant, made from dark grey stone, has an oval section. The object has a large hole at the preserved end; the edges are rounded and the surface is smoothed; its size is 1.1x3.9 cm. and the diameter of the hole is 0.3 cm.



1



2



3



4



5



6

Fig. 19. Salut, 1: copper/bronze snake; 2-3: copper/bronze arrowheads; 4: copper/bronze axe; 5: stone ring; 6: copper/bronze cauldron.

Uncertain is the function of a *ring* made from whitish polished stone (Fig. 19:5): it was probably a

pendant, but it might be also used as a sort of belt buckle. The ring section is flat with smoothed edges; the diameter of the object is 3.0 cm and the diameter of the hole is 1.6 cm.

The beads from Salut can find parallels in the Early Iron Age sites on the Omani Peninsula such as Rumeilah^[41] and Fashgha^[42].

A conical stone *button*, probably made from polished alabaster, was found in the top stratum of the site. On the flat base there are three pairs of holes connected with each other through the triangular hole in the centre. The height of the piece is 1.5 cm; and the maximum diameter 3.8 cm. An almost identical alabaster button is known from a burial context in Bithnah^[43], and a similar shell button was found in Fashgha^[44] (see also below, “Bone objects”).

Other objects. A series of six small stone *balls* was found on the surface and in the top strata of occupation of the site. They can be divided into two categories. The first includes balls with a well smoothed, polished surface, and could be pieces for a game. They were made from yellow-brownish stone, probably sandstone, and have a spherical or ovoid shape with an oval section. The diameters of pieces are between 1.5-2.6 cm. The second category comprises rough spherical/ovoid balls, with an oval section, made from pebbles or sandstones. The diameter of the pieces is 3.6-4.9 cm. The shape and the rough surface suggest their use as sling projectiles.

There is a lack of clarity in the function of the fragmentary *‘plaque’* made from dark grey soft-stone. It is rectangular shaped and has a rounded central cavity with a hole delimited by linear engraved decoration. The size of the object is 3.2x2.9x1.0 cm and the diameter of the hole is 1.8 cm.

An oval-shaped stone *disc*, probably made from whitish alabaster, has a small cavity in the centre on one side (it looks like drilling was begun). The edges are rounded and the surfaces are polished; the size is 2.7x3.2 cm.

4.4. Bone objects

From the top strata of occupation of the site came a few ornamental objects in bone. Among them there is an unfinished object made from an animal jawbone with worked faces (size 3.5x11.8 cm); a disc-shaped *bead* made from a fish-bone vertebra; a fragmentary *‘plaque’* probably made from ivory; a L-shaped *plaquette* used, most probably, as the decoration of a wooden box or piece of furniture (the object has a central flat groove with four holes on its longer part, while another hole is on the short L element; the edges of the plaquette are rounded, its top surface is polished whereas the back side is rough; the size of the object is 8.2x20.0x0.8 cm; and the diameter of the holes is 0.3 cm); a fragmentary discoid-concave *button* with three holes placed in one row on the back (its internal and the external surfaces are polished, the rounded edges are slightly bulbous at the bottom; the diameter

is 6.8 cm., the thickness is 0.3 cm). The button is quite similar to the Bithnah piece made from ivory [\[45\]](#).

4.5. Clay objects

In this category we describe personal ornaments, loom-weights and figurines which were, in the majority of cases, decoration of pottery vessels and/or terminations of lid handles.

One complete and two fragmentary *pendants* were made from the walls of slipped pottery vessels. Their shapes are rectangular and oval with a flat section and a central hole, the edges are slightly smoothed (the length of the objects are 2.2-2.9 cm, its width is 1.7-2.6 cm, its thickness 0.5-0.7 cm and the diameters of the central holes are 0.4-1.3 cm).

A spherical baked-clay *bead* has red slip on the exterior. The diameter of the object is 0.7 cm, the diameter of the central hole 0.1 cm.

A series of *loom-weights* were found in different layers of the site. All of them are made from fragments of pottery vessels, and have an irregular rectangular or disc shape, a flat section and a central hole. The dimensions of the pieces are: length 3.1–8.4 cm, width 3.7–6.9 cm, thickness 1.0–2.6 cm, and the diameter of the central hole is 0.5–1.7 cm. The function of an irregular shaped object, also made from a wall of pottery vessel, is unclear: instead of a hole it has a deep cavity in the centre. Its size is 5.1x6.0x2.4 cm and the depth of the cavity is 1.3 cm. It could possibly be an unfinished loom-weight.

Ceramic loom-weights were found in Iron Age context of Tell Abraq [\[46\]](#).

The worked fragments of pottery walls were used also as small *lids*. One of these is a disk with smoothed but damaged edges and a shallow cavity on its top face; the diameter of the piece is 5.3 cm., the thickness is 0.7 cm. Another one has a quadrangular shape. Its size is 4.4x4.6x1.5 cm.

Several zoomorphic and one anthropomorphic complete and fragmented baked-clay *figurines* were discovered in different strata of the site. One of the fragments was found inside the clay filling of additional defence wall (US5). It is the central part of the body of a quadruped with the junction of the back legs and the fragmentary tail. It was made from very compact reddish paste with a grey core (insufficient firing); the surface is roughly smoothed with visible signs of the stick (Pl. 10: 1). The total length of the fragment is 9.1 cm.; the width is 5.2 cm. Judging by the curve of the back (a hump?) it could be a camel representation [\[47\]](#).

A protome of camel (?) figurine was probably the end part of the handle of a vessel (Fig. 18: 5; Pl. 10: 2). The reddish paste is medium coarse with a dark-grey core, the external surface has

reddish slip. Representation is rather realistic – the animal has a long neck decorated with oblique incisions, the triangular-shaped muzzle has a closed mouth and a pointed ear (the other one was chipped). The height of the piece is 9.2 cm.

Another quite realistic representation is the complete figurine of a bird, apparently a duck, made from whitish, very compact fine paste (Fig.18: 6; Pl. 10: 3). It was probably the knob of a ceramic lid. The height of the object is 3.9 cm. An almost identical fragmentary terracotta figurine was found in a Hellenistic context in Mleiha ^[48].

Rather realistic is also the representation of the ram's head which serves as the knob of ceramic *lid* (Fig.17: 5; Pl. 8: 1), discovered on the floor of one of the rooms in Building I. The lid was made from rather compact reddish paste covered with flaked reddish-brown slip on the exterior. The animal's head has a slightly open mouth and C-shaped horns decorated with oblique incisions. Impressed circles show eyes and nostrils, and were placed also in three rows on the forehead. The diameter of the lid is 13.3 cm.

There is an anthropomorphic figurine made in a rather primitive style. It represents the head and part of the bust of a female. The shoulders are flat and a quite massive neck ends with a T-shaped 'projection' representing an elongated face (broken); an elaborate hair-dressing, in the form of a flat chignon decorated with short line incisions, is shown on the back side. This 'grotesque' figurine was made from light reddish fine paste with traces of pinkish-white slip on the exterior. Its height is 4.3 cm., the thickness of the body is 0.6 cm. It should probably interpreted as decoration on top of the vessel's rim.

Stylistically, the ram's head decoration finds parallels in the lids crowned with animal figures discovered in the Iron Age II monuments Muweilah and Bithnah in the U.A.E., which were interpreted as parts of incense burners ^[49]. Animal figurines as the end pieces of lid handles and decoration of rims of ceramic vessels are known from the Iron Age context in Khatt and Bithnah ^[50].

4. 6. *Shell objects*

A few objects found in the top strata of the site were made from different kinds of marine shells. Among them there are *pendants* made from the *Cypraeidae* and *Marginellidae* species (they were made by the fracture or wear-and-tear of the back of the shells) ^[51], a disc pendant made from unspecified shell (diameter is 2.5 cm), *beads* or *buttons* made from the apex of shells of *Conidae* family (diameter 1.1-1.2 cm) ^[52]

An oval-shaped shell *plaque* with a curved profile presents traces of working on the edges. There is a

graffito in the form of a fish on the concave face. The size of the object is 4.0x5.8x0.6 cm.

A half of mollusc shell *Chlamis Townsendi* has traces of secondary burning along the edges of internal surface. It was probably used as *oil lamp* (the size is 12.6x12.3 cm).

A fragmentary T-shaped *handle* of a knife (?) was made from a fossil shell. It has a central hole for attachment. The size of the object is 2.4x3.0x1.0 cm.

5. Discussion

The results of the three campaigns of the IMTO at Salut enable us to draw some preliminary and rather general conclusions.

5.1. *Stratigraphy and structures.*

The fortress was built on the flat top of the natural outcrop. From the very beginning (the 1st construction phase) it was a very well fortified stronghold surrounded by a massive stone wall built using a technique combining a clay 'core' and stone external 'skin'. The corridor-like premises were located along the outer defence walls. The presence of the staircase shows that at least two-storage structures constituted the buildings of the 1st construction phase. Apparently they were destroyed by fire and their ruins used for constructing the massive platform on which the buildings of the 2nd construction phase were erected. It seems quite probable that the enlargement of the defence wall was also made during this renovation. The entire structure of Building 1 (the 2nd construction phase) looks rather symmetrical with a perpendicular axis oriented roughly in north-south and east-west directions. It is difficult to make any precise statements about the functional use of the structures discovered, but the presence of the columned hall with an elaborate entrance, which was quite unusual for a dwelling, and the set of finds should be mentioned. There are votive objects such as bronze snakes (one complete and one fragmented), a miniature axe, a finial (?), personal ornaments (belt rings, earrings, beads and pendants), bronze tools (razors, hoes, awls, needles etc.).

The top layer (the 3rd construction phase) revealed horizontal surfaces, floors, pavements and the remains of stone foundations of small circular structures. Constructively they are not connected with the preceding mud-brick structures and represent the period of late re-occupation of the site.

5.2. Chronology.

The foundation of Salut goes back to the Early Iron Age period, i.e. to the late 2nd millennium BC, and the site was occupied till at least the late 9th or the early 8th centuries BC. The preliminary analyses of the pottery and other material show its close similarity with Rumeilah and other Early Iron Age sites in the Eastern Arabia [\[53\]](#). The available radiocarbon dates from different strata of our excavations confirm this conclusion (see *Table 1*). On the other hand it should be noted that rather ‘early’ C14 dates contradict the presence of some diagnostic pottery forms, first of all the so-called “bridge-spouted” jars and small carinated bowls, which, on the bases with Iranian comparisons, are dated usually slightly ‘later’ [\[54\]](#).

Table 1

Lab ##	Provenience	Radiocarbon age BP
GX-31550	US20, ash layer above the bedrock	3130±80
GX-31773	US16floor	2900±50
GX-31547	US6	3110±60
GX-31549	US13floor	3030±50
GX-31548	US12floor, fire-place	2910±50
GX-31546	US3floor	2760±70
GX-31771	US23floor	2940±70
GX-31770	US1, wood from the top of the monumental platform	3060±70
GX-31772	US36, charcoal from mediaeval pit	360±40

The end of the Early Iron Age structures at Salut was, apparently, violent: little fewer than two dozen bronze arrowheads were found in the ruins of the building assigned to the Salut 2 phase. Many of them were damaged at the tip as though once they have been fired at stone walls. Such finds could be interpreted as the evidence of a military siege of the stronghold of Salut probably somewhere in the late 9th – early 8th centuries BC.

Diagnostic pottery shards (the so-called “late sgraffiato” wares, “Abbasid” blue glazed wares) give the possible date for the mediaeval occupation of the site between 8th-9th and 14th-16th centuries AD

[55]. It was, no doubt, the re-occupation of the old site, which was apparently sporadic. The presence of the so-called “Bahla pottery” should be connected with existence of the ruins of the modern building clearly visible on the edge of the eastern slope of the hill.

5.3. Historical implication

The discovery and established chronology of the Salut settlement is of very great importance for the history of Oman in the late 2nd – early 1st millennia BC. This is one of the largest Early Iron Age sites with an extensive occupation and one of the best developed fortification systems known so far on the Omani Peninsula. It can be remembered that, according to Neo-Assyrian and Achaemenid written sources, the peninsula was known as “the land of Qade (Kade)” [56]. Moreover, the so-called Ishtar Slab inscription from Nineveh, in which the receipt of a tribute sent to Assurbanipal around 640 BC is recorded, lines 132-133 mentions the arrival of “Pade, king of land of Kade, who dwelt in the city of Iske...” [57]. Some scholars identify the name of Pade’s capital Is/Iz-ki/qi-e with the well-known town of Izki in the Omani interior, a town considered by local tradition to be the oldest in Oman [58]. But as we know from the results of the archaeological survey conducted by P. Costa [59], there are no significant archaeological remains of any Early Iron Age settlement in the area of the modern Izki, which, from an archaeological point of view, could be a capital mentioned in Assyrian sources. It could of course be an exaggeration to consider Salut as the capital of Qade=Oman, especially before any large-scale archaeological excavation has taken place at the site, but such a possibility should be kept in mind.

The memory of the importance of Salut is strong in Omani tradition. Wilkinson [60] relates the legend of the trip of Sulayman bin Dawud, an hypostasis of King Solomon, in Oman. The king was being carried by the winds across to Oman where he saw the castle of Salut. Sulayman ordered the spirits to investigate. They reported that its sole occupant was an eagle who said that he and his forebears had been living there for 800 years, and all that time the castle had been inhabited.

There is another problem of the history of pre-Islamic Oman on which future excavations at Salut can shed a light. There is an Arabic source which may have some bearing on the question of a Persian (Achaemenid) presence in the Oman peninsula. Most of the first book of the *Kashf al-Gumma* describes the conflict between Malik bin Fahm, the first of the Azd to move from Yemen to Oman, and the Persians. The Persians were based at Sohar, on the coast of the Gulf, and after rejecting Malik’s request to settle in Oman, they marched with a force of 30,000-40,000 men and elephants to the plain of Salut, near Nizwa, where they were defeated by Malik. Persian reinforcements failed to prevent a further victory by Malik, and after a second defeat, “the remnant of the Persian army embarked in their ships and passed across the sea to Persia”. It should be pointed out that *Kashf al-Gumma* describes that Malik bin Fahm “found the Persians holding Oman for the king Dara, son of Dara, son of Bahman”. As has been suggested by some scholars (J.C. Wilkinson, D.T. Potts), the

name of “Dara bin Dara bin Bahman” is “a mythical construct which combines the names of Bahman, son of Isfandiar, one of the early Persian mythical figures described by Firdowsi, and Dara, as Darius III, Alexander the Great’s unsuccessful opponent”, and that the Achaemenid presence in Oman is quite probable ^[61]. It has to be noted also that in this case the legendary Azd migration to Oman should be dated to Achaemenid period, at least several hundred years earlier than usually suggested. Bearing in mind all these data, we have to closely examine the established chronology of the Salut fortress, and in this respect Iranian analogies for pottery assemblages from Salut are quite interesting.

Our investigations show that the fortress did not remain isolated but was the core of a wide Early Iron Age agricultural oasis with a subordinate settlement (Salut 2) and a sophisticated irrigation system (*falaj*). The early date (late 2nd – early 1st millennia BC) for the construction and usage of the *falaj* system in Oman is of special importance. It strongly backs the theory of the first appearance of such irrigation constructions on Omani soil, some centuries before they were distributed on the other side of the Gulf, in Achaemenian Iran.

The artefacts (stone and bronze tools, pottery vessels, votive objects etc.) discovered during our excavations as well as the construction technique of unearthed mud-brick and stone structures of the Salut fortress are very similar, indeed almost identical, to what we have from contemporary sites along the coast of the Gulf, in the U.A.E. interior and eastern Oman, from the sites like Rumeilah and Hili 14 (the oasis of al-Ain), Shimal, Qarn Bint Saud, Dibba, al-Qusais, Lizq and the sites in the Samad area. From an archaeological point of view there are strong grounds to speak about cultural unity of the ancient population of the whole of Eastern Arabia in the late 2nd – 1st millennia BC, about the single cultural province, in archaeological terms, which included also Dhofar region (Ain Humran and Shisur).

The presence of two Iron Age sites, Salut fortress at the very end of the irrigation system and the Salut 2 settlement at the end of *falaj* shafts and at the beginning of the open channel, clearly demonstrate that we are dealing with a vast agricultural oasis flourishing in the late 2nd – early 1st millennia BC. There is no doubt that, all these monuments – settlement, fortress and the *falaj* system – are contemporary and constitute a single integrated complex. Most probably, the Salut fortress was an administrative centre of the ancient oasis and/or a residence of a local ruler. Apparently, the *falaj* system was renewed several times, in the medieval period and in modern times.

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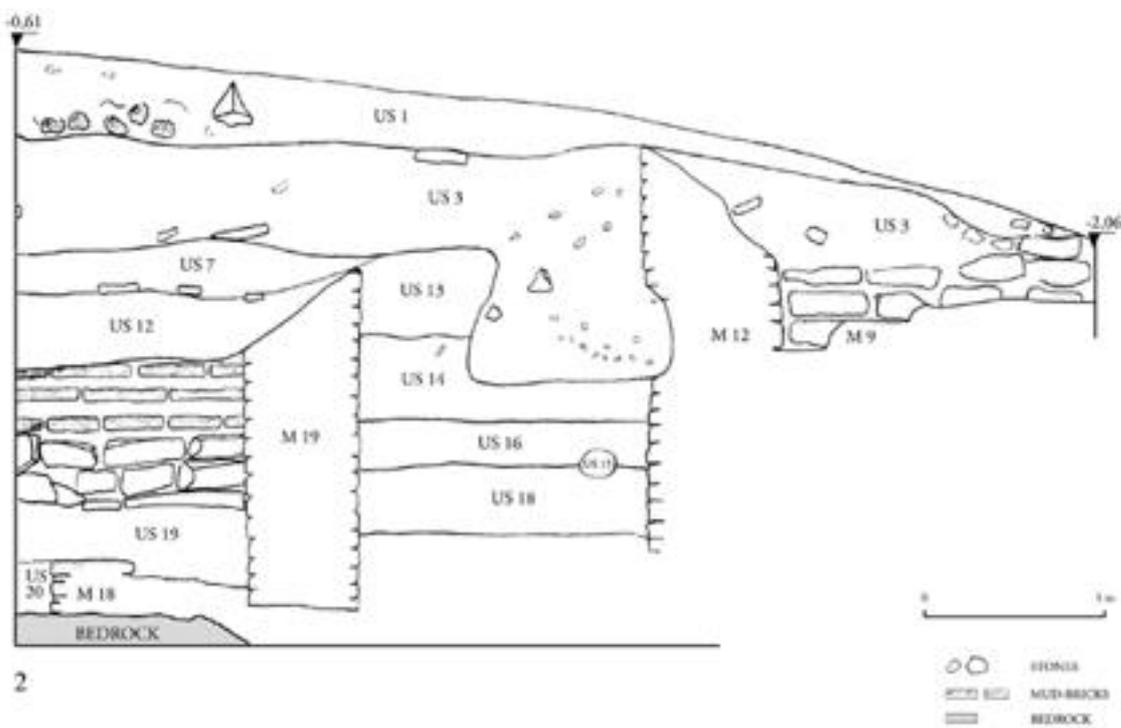
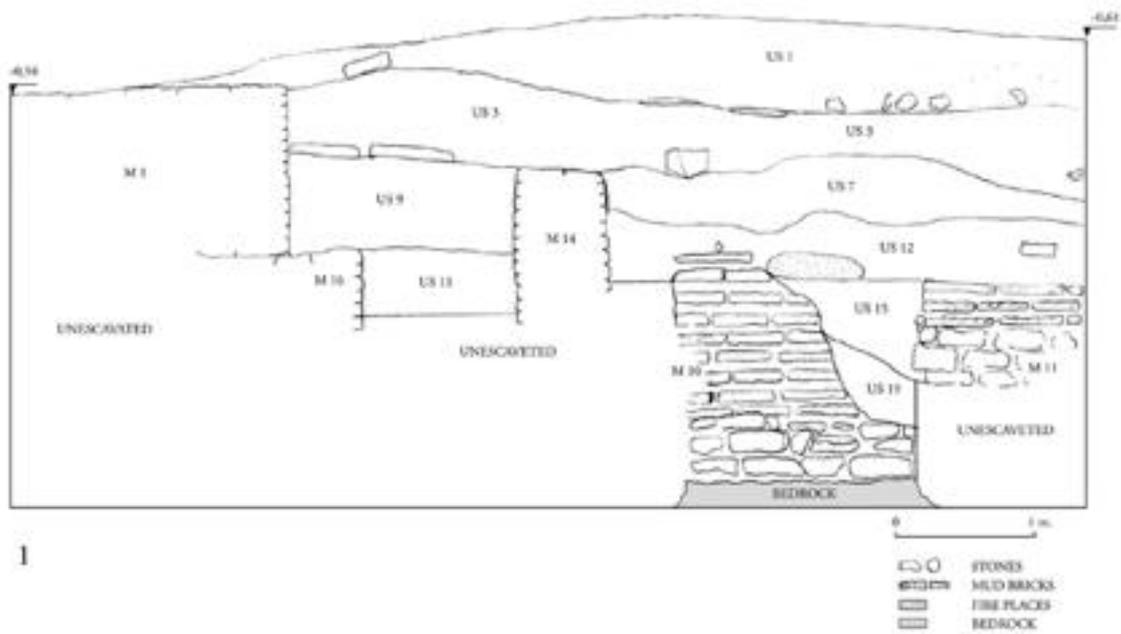
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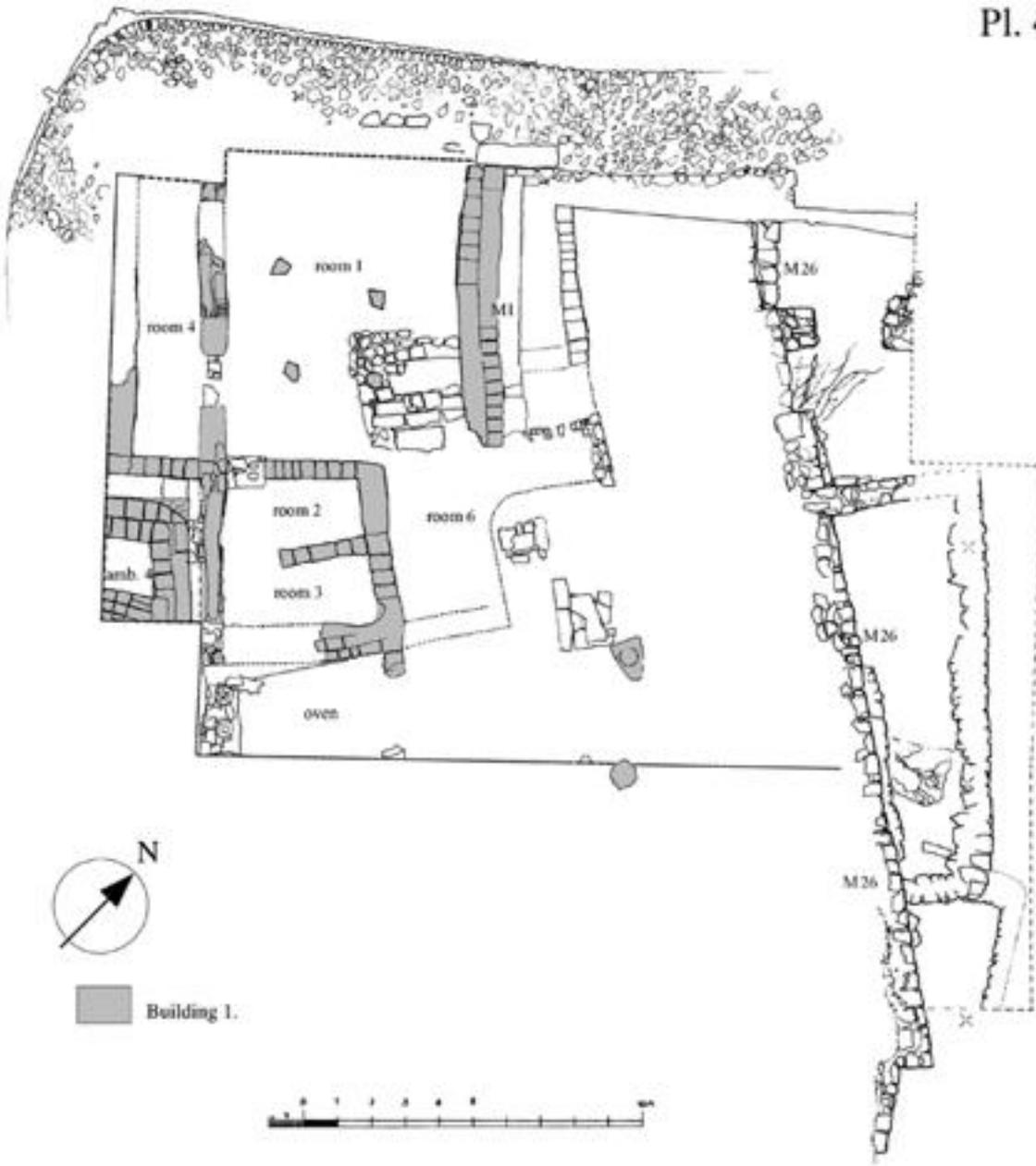
Salut, campaign 2004B, main and extension soundings (Ahmad Yehia).



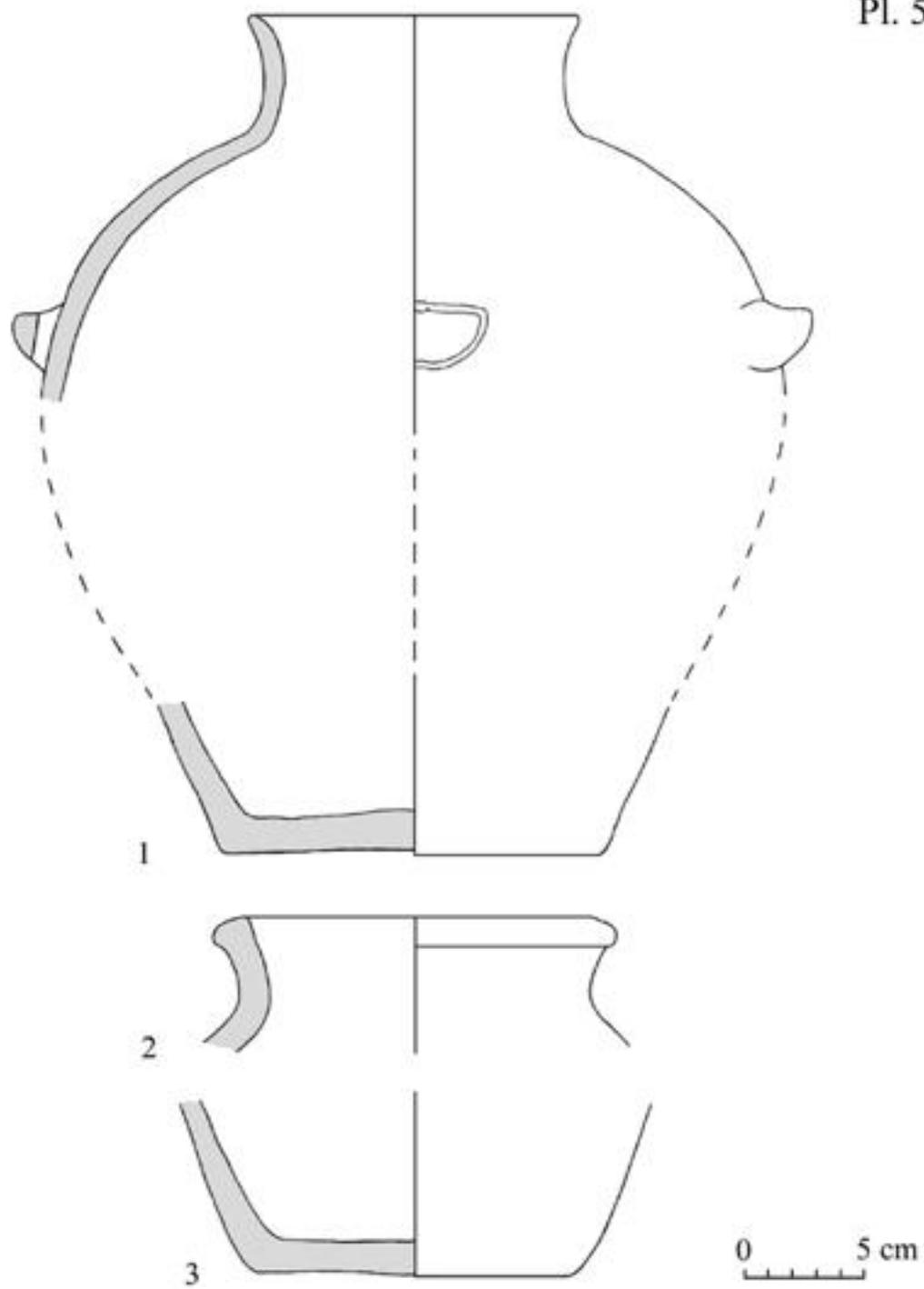
Salut, campaign 2004B, main sounding, 1: south wall section, 2: east wall section.



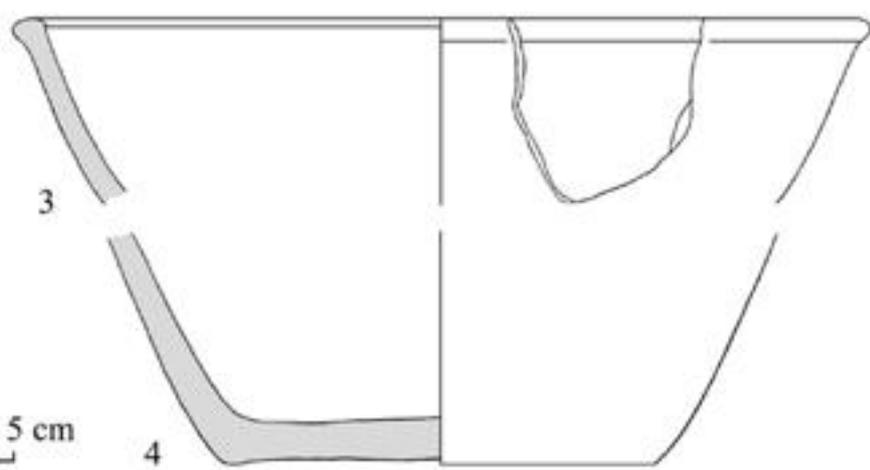
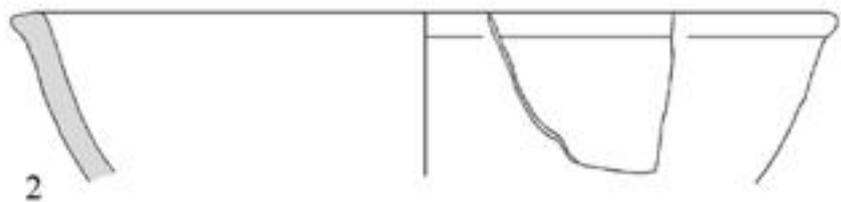
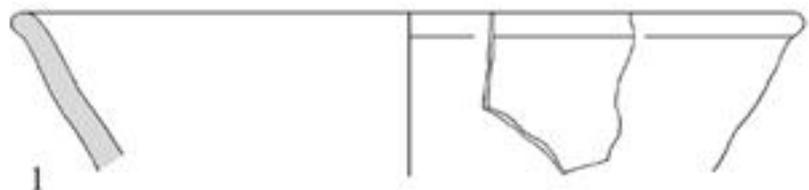
Salut, campaign 2005A, topographical sketch (Nils Hellner).



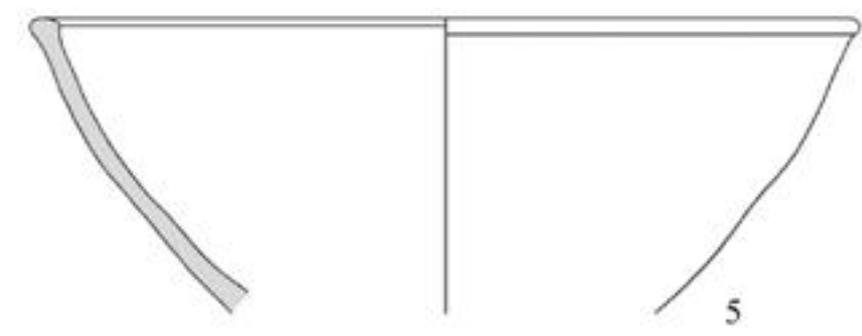
Salut, campaign 2005A, the Building 1, Early Iron Age (Nils Hellner).



Salut, pottery of the second phase, 1-3: jars.



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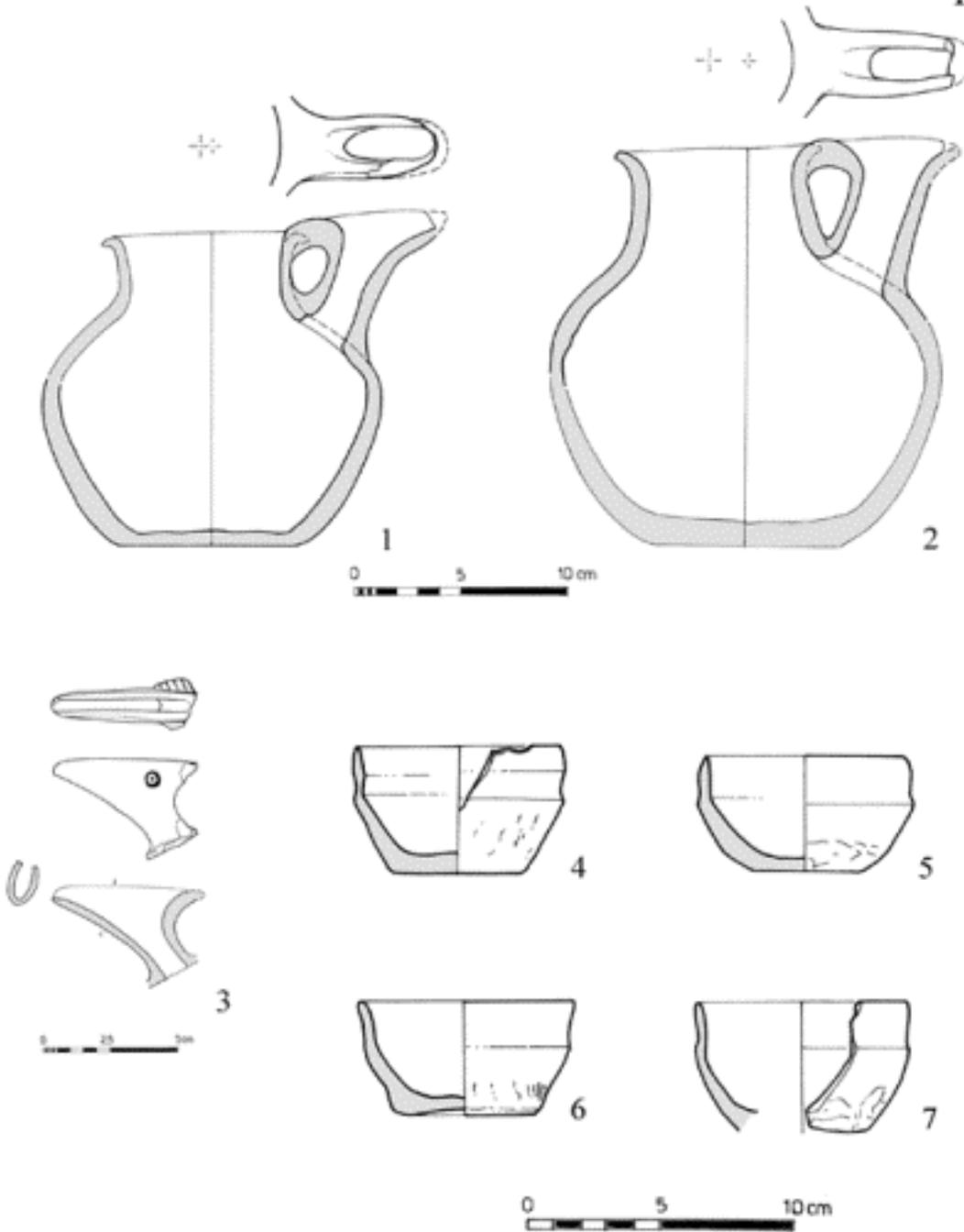


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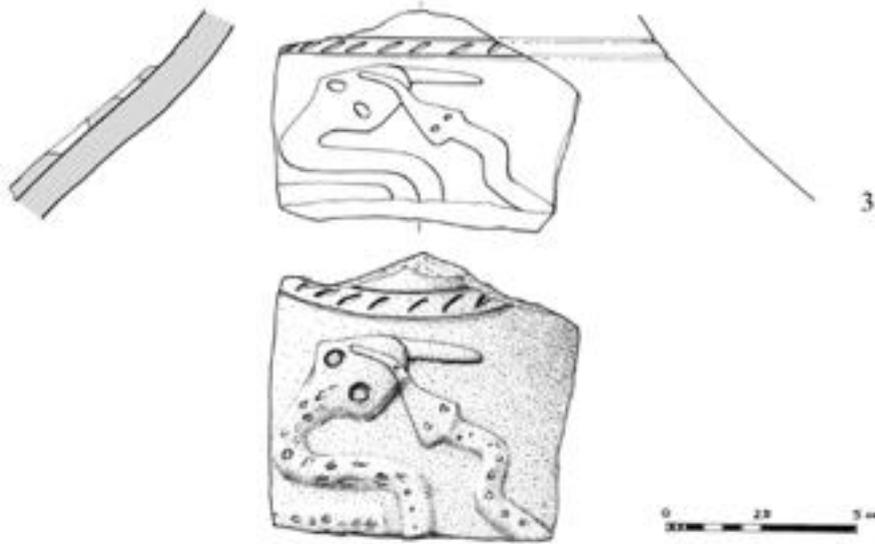
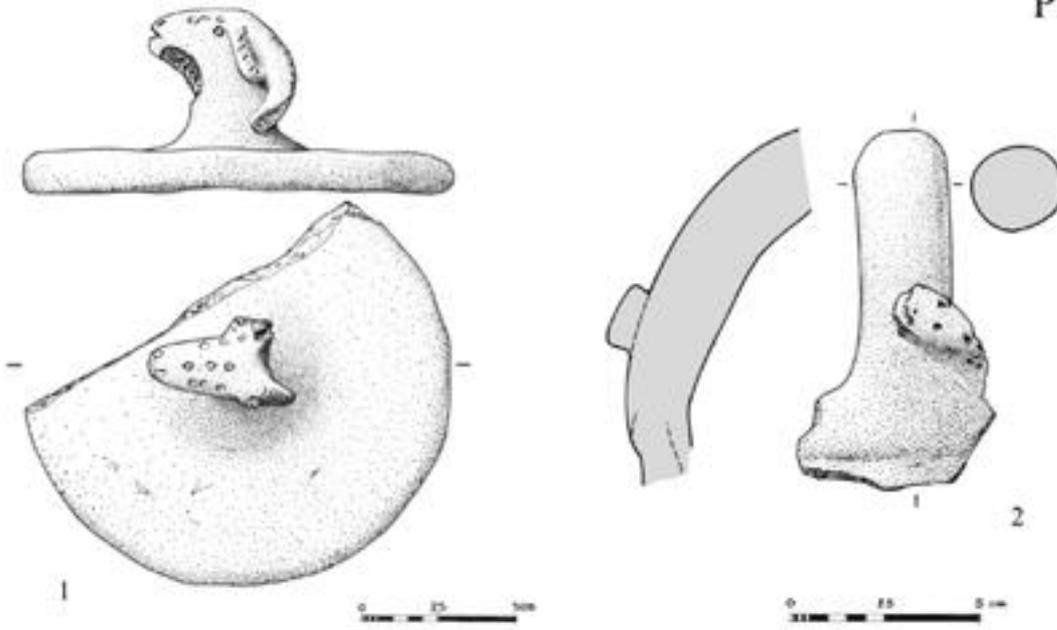
0 5 cm



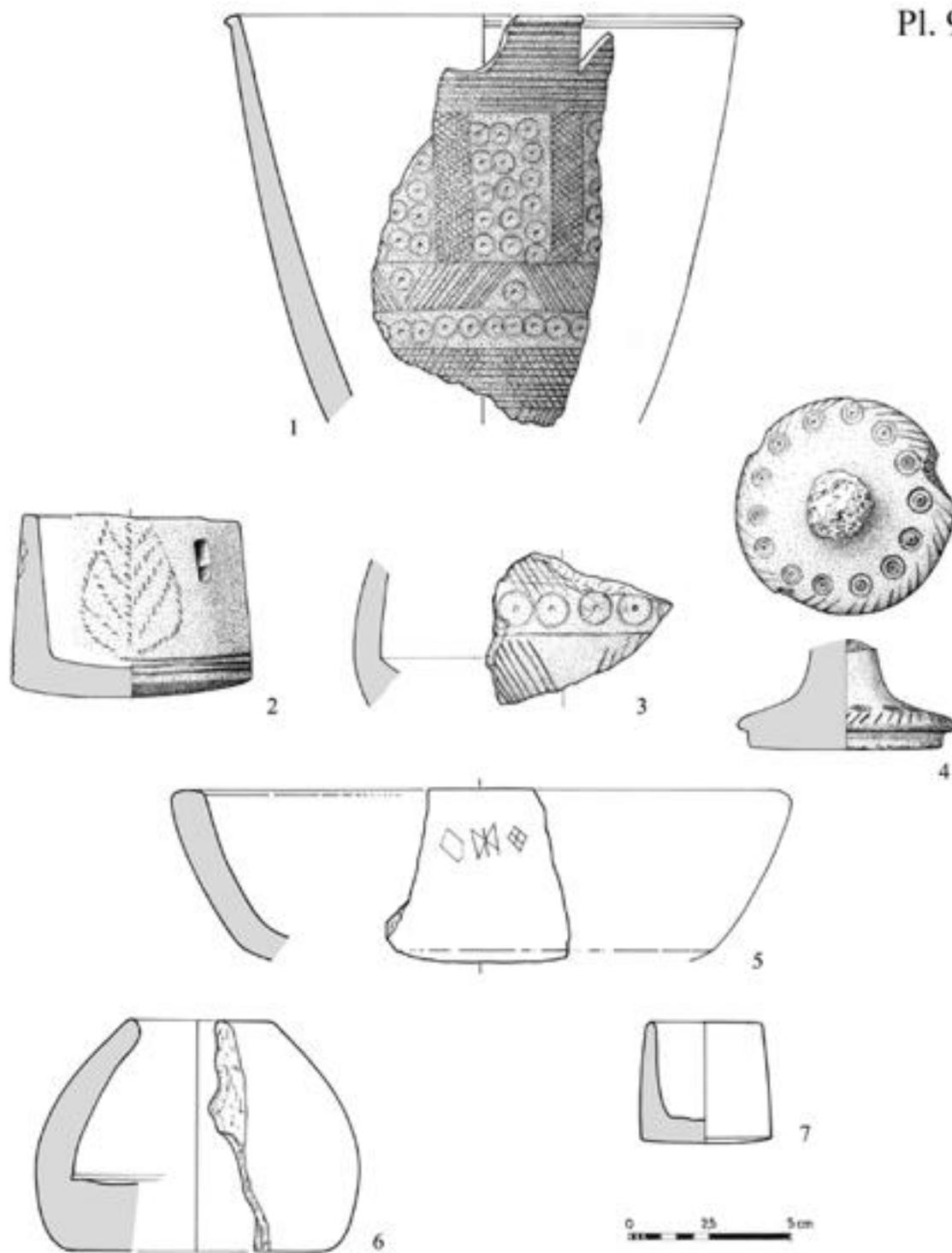
Salut, pottery of the second phase, 1-6: basins.



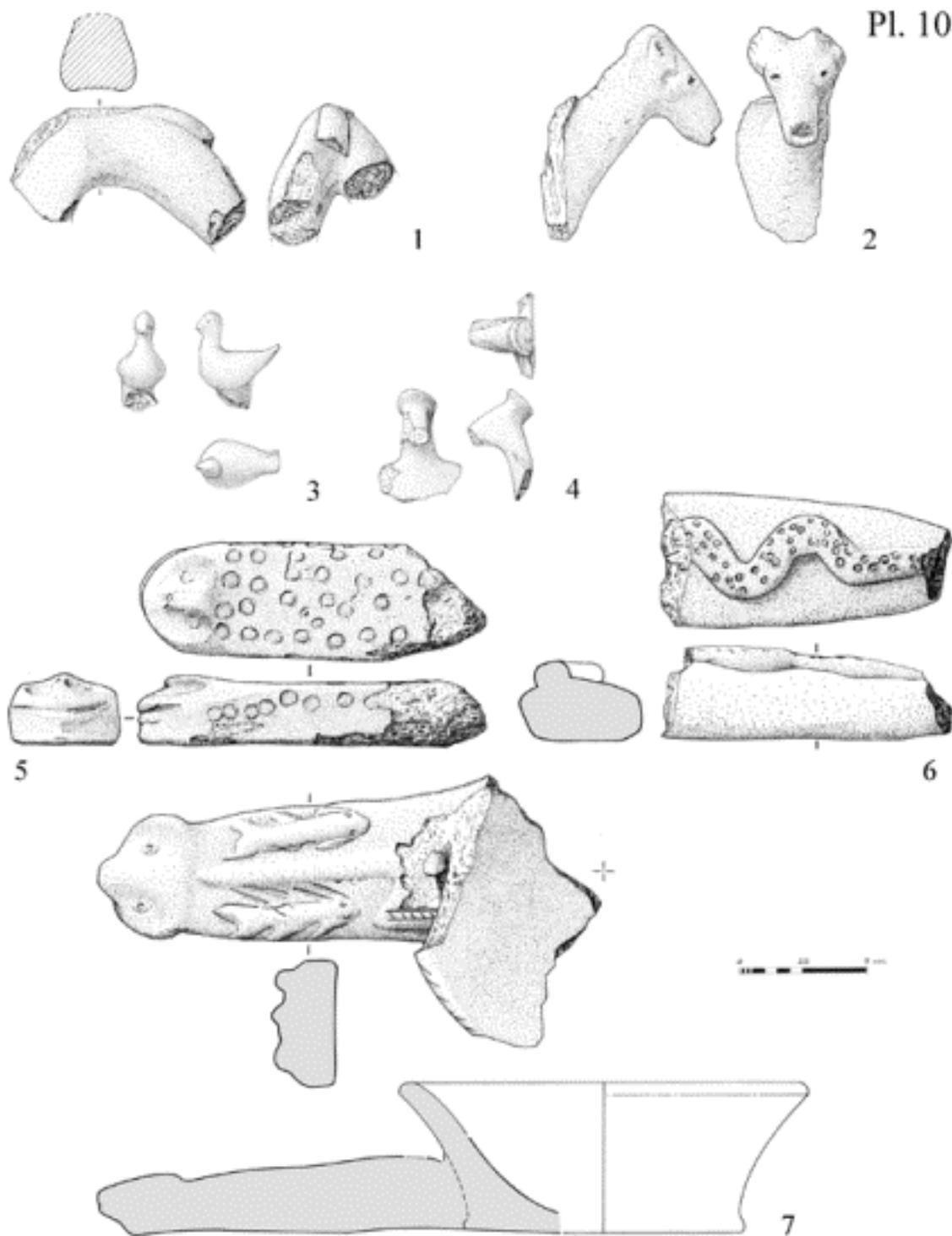
Salut, pottery of the second phase, 1-3 spouted vessels; 4-7: rimmed bowls (Sergio Martelli).



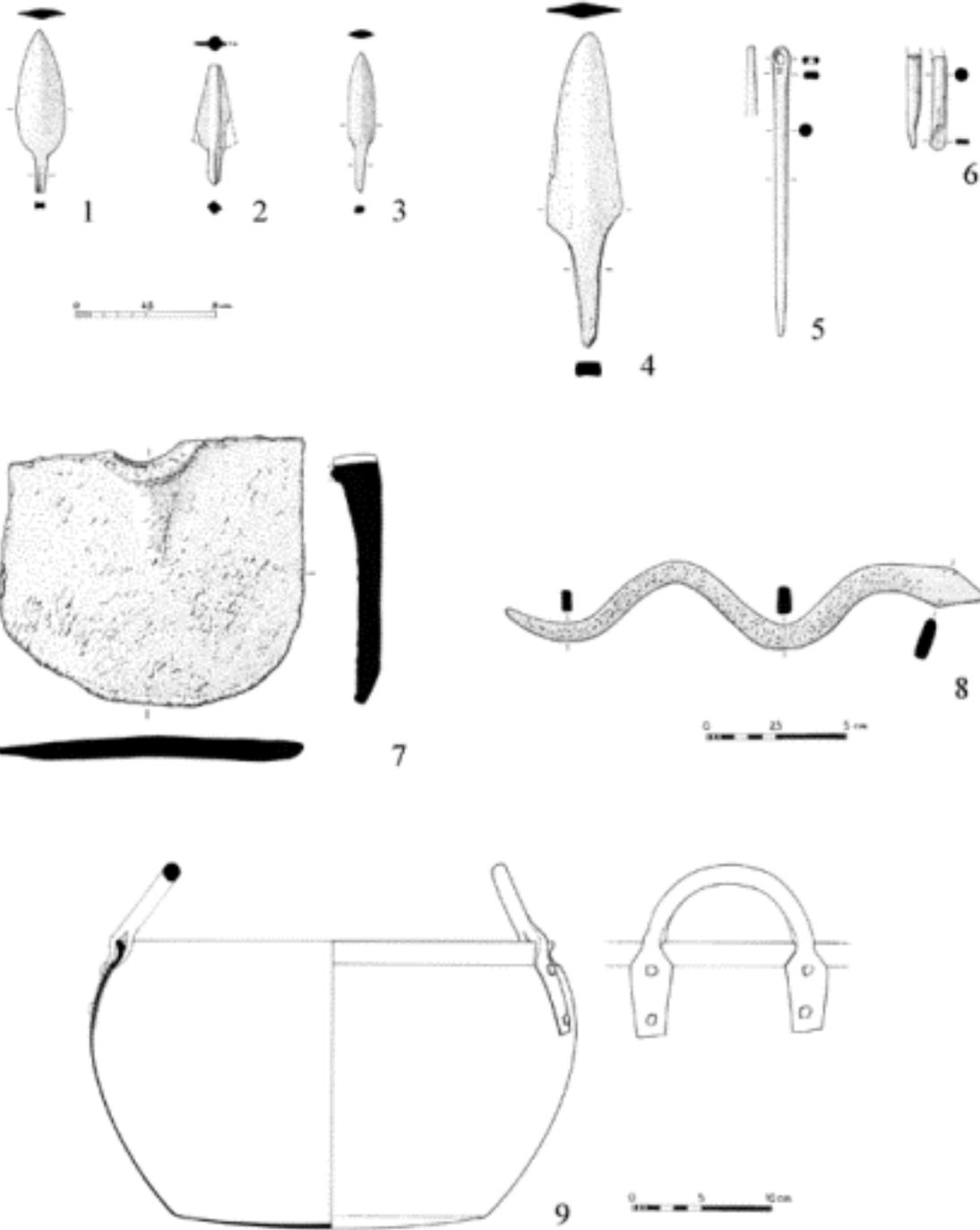
Salut, 1: lid with ram's head; 2-3: snake motifs (Sergio Martelli).



Salut, 1-5: soft-stone vessels, 6-7: alabaster vessels (Sergio Martelli).



Salut, 1-4: backed-clay figurines, 5-7: oil-lumps (Sergio Martelli).



Salut, copper/bronze objects 1-4: arrowheads; 5: needle; 6: chisel; 7: hoe; 8: snake; 9: cauldron (Sergio Martelli).

[1] Cf. Humphries J.H. 1974: 51-52, figs. 8-10; Wilkinson J.C. 1977: 129.

[2] Whitcomb D.S. 1975: 127-128, fig. 10, pl. 1b.

[3] de Cardi B., Collier St., Doe B. 1976: 145, 164.

[4] Orchard J. 2000: 168, fig.3; Orchard J. and J. 2002: 227-234.

[5] The members of the team were Alessandra Avanzini, Alexander V. Sedov, Said al-Salmi and Abdullah Khamis al-Hudar (representatives of the Office of H.E. the Adviser to H.M. the Sultan for Cultural Affairs, Muscat).

[6] The members of the team were Alessandra Avanzini, Valeria Bartoloni (archaeologist, Rome), Ivana Cerato (archaeologist and topographer, Padova), Chiara Condoluci (archaeologist, Pisa), Martina Rugiadi (archaeologist, Naples), Mr. Khalifa Mansoor and Saif Al-Shamsi (representatives of the Office of H.E. the Adviser to H.M. the Sultan for Cultural Affairs, Muscat). The work was carried out from 22.03.04 till 6.04.04.

[7] The inhabitants of the region maintain that this structure was a well.

[8] The well openings are in masonry, while the lower part is completely dug into the bedrock.

[9] De Cardi B., Collier St., Doe B. 1976: 164, 39, fig. 37.

[10] De Cardi B., Collier St., Doe B. 1976: 164, 38.

[11] The mosque is on the Birmingham Expedition plan, cf. Orchard J. 2000: 168, fig. 3.

[12] The archaeological excavations of IMTO were carried out from 9.10.2004 till 5.11.2004 (10.10.2004-27.10.2004 – test-soundings on the site, 28.10.2004-5.10.2004 – work on documentation). The members of the team were: Alessandra Avanzini, Alexander V. Sedov, Alessandra Lombardi (archaeologist, Florence), Chiara Condoluci, Ahmad Yehia (architect, Beirut), Said Al-Salmi, Saif Ahmad Salem Al-Farsi, and Khalifa Mansoor Saif Al-Shamsi (representatives of the Office of H.E. the Adviser to H.M. the Sultan for Cultural Affairs, Muscat). The team was sporadically enriched by the presence of representatives from the Ministry of Heritage and Culture of the Sultanate of Oman. Fifteen unskilled workmen from Nizwa were employed for the excavations.

[13] All pottery fragments collected from the surface of the trench were denoted as belonging to US0.

[14] The period of work was from 1.02.2005 till 22.03.2005 (1-4.02 and 19-22.03.2005 – documentation work, 5.02-17.03.2005 – excavations at the site). The members of the team were: Alessandra Avanzini, Alexander V. Sedov, Chiara Condoluci, Marco Serradimigni (archaeologist, Pisa), Filippo Virgilio (archaeologist, Pisa), Riccardo Baudinelli (archaeologist, Pisa), Costanza Odierna (archaeologist, Pisa), Nils Hellner (architect, Trieste), Sergio Martelli (draftsman, Pisa), Said Al-Salmi, Saif Ahmad Salem Al-Farsi, and Khalifa Mansoor Saif Al-Shamsi (representatives of the Office of H.E. the Adviser to H.M. the Sultan for Cultural Affairs, Muscat), Ali Salim Mohad Al-Kathiri and Muhammad Ahmad Al-Jahfali (representatives of the Office of H.E. the Adviser to H.M. the Sultan for Cultural Affairs, Salalah). 30 unskilled workmen from Nizwa were employed for the excavations.

[15] For details and description of the Early Iron Age *falaj* systems in U.A.E. and Oman see: Boucharlat R. 2003: 161-172.

[16] See: Humphries J.H. 1974: 49-76.

[17] See: De Cardi B., Collier St., Doe B. 1976: 101-174.

[18] De Cardi B., Kennet D., Stocks R.L. 1994: 52, fig. 8: 40, 41; Benoist A. et alii 2004: 27, fig. 7:1-3; 29, fig. 9:1-2, 5, 7; 30, fig. 10:2; Boucharlat R., Lombard P. 2001: 238, fig. 14; Taha M.Y. 1982-1983: 87, fig. 15:c.

[19] Humphries J.H. 1974: 73, fig. 10:b.

[20] Humphries J.H. 1974: 73, fig. 10: a, d.

- [21] Taha M.Y. 1982-1983: 87, fig. 15: a, b.
- [22] Boucharlat R., Lombard P. 1985: 60.
- [23] Lombard P. 1989: 25-37; Magee P. 1988: 112-117.
- [24] Lombard P. 1985: 206-208.
- [25] Potts D. T. 1998: 182-187.
- [26] Lombard P. 1985: 208, fig. 105: 365.
- [27] See, for instance, Boucharlat R., Lombard P. 1985: pl. 63:1.
- [28] Boucharlat R., Lombard P. 1985: pl. 62:13.
- [29] Al Tikriti W.Y. 1989: pl. 71, 96: b.
- [30] Cf. Gershuny L. 1985:12-14, pl. 8: 99, 100.
- [31] Lombard P. 1985: 208-209, fig. 106; see also Potts D.T. 1998: 199-200.
- [32] Taha M.Y. 1982-198: 87, fig. 16.
- [33] In addition to al-Qusais see also snake motifs in pottery decoration from number of Iron Age sites in Eastern Arabia such as Rumeilah, Tell Abraç, Muweilah, Bithna etc.; cf. also snake sacrifices in Qala'at al-Bahrain (Højlund F., Andersen H.H. 1997: 134-144).
- [34] For comparisons, see the 'hache à collet' in Lombard P. 1985: 212-213, figs. 108-109; Boucharlat R., Lombard P. 1985: 61, pl. 62:15-16.
- [35] Cf. Lombard P. 1985: 192-194.
- [36] Cf. Bourchalat R., Mouton M. 1991: 23-33, fig. 3.
- [37] Lombard P. 1985: 193.
- [38] Cf. Corboud P. et alii 1996: 63.
- [39] Boucharlat R., Lombard P. 1985 : pl. 61:6.
- [40] Cf. Hassel J. 1997: 245-281; Simpson St.J. 2002: 137, fig. 175.
- [41] Boucharlat R., Lombard P. 1985: pl. 66.
- [42] Phillips C. 1987: fig. 39.
- [43] Corboud P. et alii 1996: pl. 27:3.
- [44] Phillips C. 1987: fig. 39.
- [45] Corboud P. et alii 1996: pl. 27:2.
- [46] Potts D.T. 1990: 126: fig. 155.
- [47] Cf. two similar fragmentary figurines from Rumeilah: Boucharlat R., Lombard P. 1985: pl. 65: 9-10.

[48]

Salles J. F. 1978-79: 84, pl. VI:3.

[49]

Cf. Magee P. 1999: 46, fig. 7; Magee P. 2003: 185, fig. 5; Benoist A. et alii 2004: 30, fig. 10:1.

[50]

Cf. De Cardi B., Kennet D., Stocks R.L. 1994, fig. 8:39; Benoist A. et alii 2004, fig. 7:2, 4.

[51]

The use of this kind of shell pendants is known from ancient to modern times in Arabia; parallels from the Iron Age sites on the Omani Peninsula can be found, for instance, in Bithnah (Corboud P. et alii, 1996, pl. 28: 8-10); cf also a complete necklace from Hurayda in the Wadi Hadramawt (Simpson St. J. 2002: 188, figs 249-251).

[52]

Similar shell beads/buttons are known from the Iron Age context in Bithnah (Corboud P. et alii 1996: pl. 28:1-2) and Ghalilah (Donaldson P. 1984: fig. 29:80); the ancient use of the *Conidae* shells as beads is demonstrated by the finds from Jebel Hafit cairns (Cleuziou S. 1978: 46, fig. 17:1).

[53]

Cf.: Boucharlat R., Lombard P. 1985: 44-73.

[54]

See: Kroll St. 1991: 315-320.

[55]

Cf. Whitcomb D.S. 1975: 127-128.

[56]

See: Potts D.T. 1990a: 393-395; for a more detailed discussion see: Potts D.T. 1985: 81-83.

[57]

Cited according to Potts D.T. 1990a: 393.

[58]

Cf. Potts D.T. 1985a: 75-76.

[59]

Costa P.M. 1988: 15-23.

[60]

Wilkinson 1977: 129.

[61]

See: Potts D.T. 1990a: 399.