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BMH2 and the Iron Age Northern Coastal Oman in Light of 2014–2015 Excavation Seasons

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Abstract

After 2014–2015 field season BMH2 is going to assume a more defined profile within the Iron Age of Southeast Arabia. According to the material culture the village was at its best during the Early Iron Age II, between 1100–600 BCE. During this long time span a complex local society took place thanks to coastal exploitation, agricultural activities and trade. Nonetheless, the transitional periods between the Bronze Age and the Early Iron Age I as well as the end of the Early Iron Age and the beginning of the Late Iron Age should be the objects of future excavations.

Keywords

Sultanate of Oman – coastal archaeology – historical landscape – Iron Age – pottery in archaeology

In the framework of the project *‘Ichthyophagoi: their culture and economy. Landscape and people during the Iron Age in coastal Oman’* a second archaeological campaign was carried out at Bimah from December 5th, 2015 to January 3rd, 2016. The 2015 field season focused on the excavation of the hut H1-H1a, one of the oval structure that composed the main compound of the village (Loreto 2014; 2015: fig. 1). Furthermore, based on the 2014–15 results, specific studies can be conducted on the collected data, in particular: the definition of a typology of the Iron Age pottery and softstone vessels, up to now our best

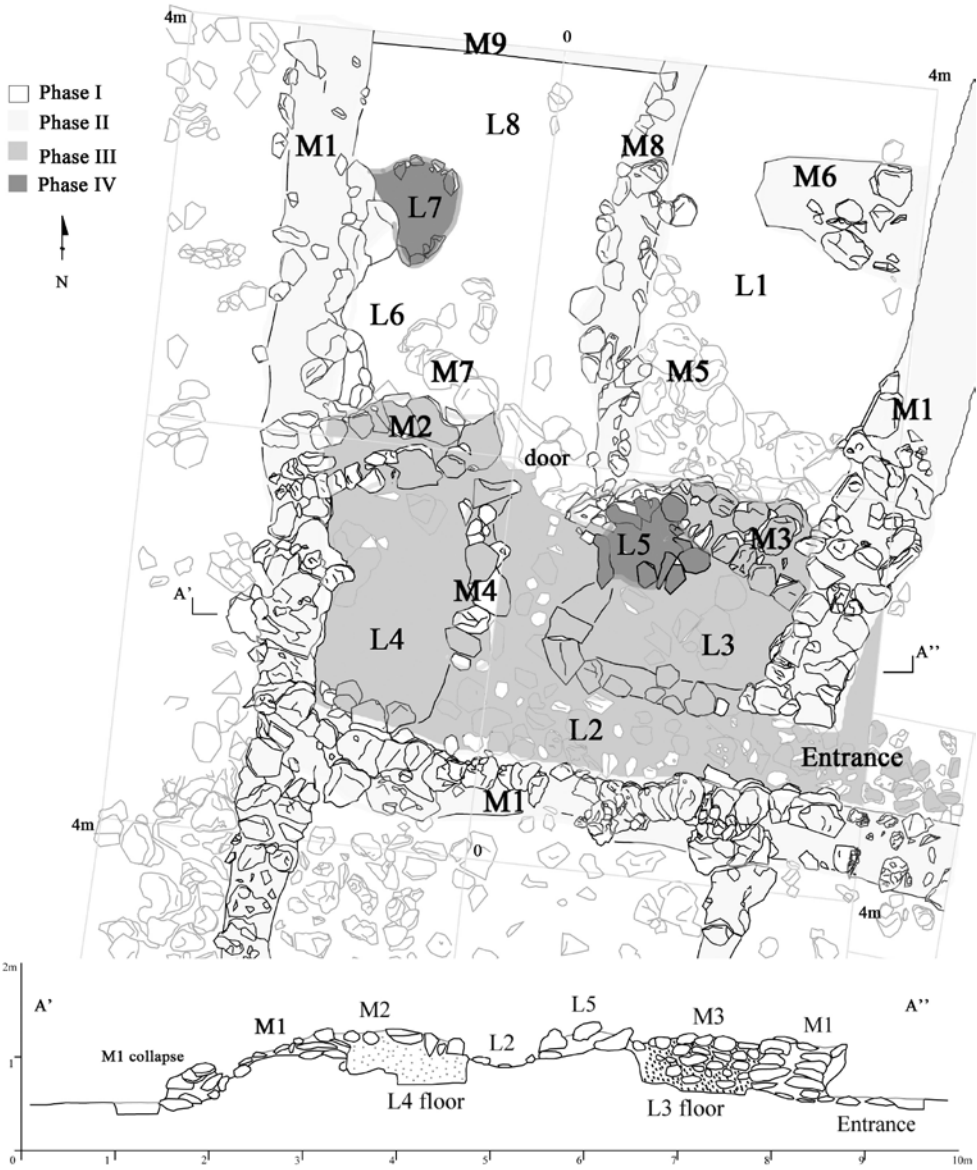


FIGURE 1 *Hi-Hia plan. In grey scale the identified archaeological phases.*

elements for a relative chronology; a first comprehensive study of the faunal remains, in light of the definition of each single structure's function; and the beginning of a devoted study of the collected lithic material. In addition, the proceeding of the geoarchaeological analyses of the ancient landscape by the 2015 survey of the coastline from Bimah to Tīwī is still ongoing.

Thus, after two excavation seasons, Bimah and its natural environment are going to take the shape of a more complex portrait, both from an inner perspective, in which the ancient village subsistence economy takes form and an outer perspective, in which Bimah appears to be mostly connected with the Early Iron Age II (EIA II) cultures of northern Oman.

2015 Field Activities

Survey from Bimah to Tīwī

The 2015 survey focused on the coastline from BMH2 to Tīwī with an inner turn inside *wādī* Fins (Loreto 2014: pl. 1a). As expected from a previous study (Biagi 2004, Korn *et al.* 2004) the survey allowed us to identify sepulchral evidence linked to an uninterrupted occupation of the area which involved both prehistoric structures and historical ones. In detail, the whole coastline is rich in archaeological evidence, mostly funerary *tumuli* (in shape of large *tumuli* with a medium diameter of 1.5 m and small *tumuli* with a medium diameter of 1 m) and sporadic shelters that can be compared to the BMH2 shelters devoted to fishing activities. Moreover, it is quite easy to recognize lithic material along the way.

In the vicinity of Fins the prehistoric materials increase dramatically: various and very large assemblages of lithic tools were recognized as we came into the main *wādī* Fins and secondary *wādīs* (flakes and a great quantity of large flint nodules, some of them slightly chipped and abandoned). Coming to Tīwī, where a limited area has been visited, a huge collection of Islamic pottery was collected, although the modern buildings destroyed most of the antiquities previously recorded (Korn *et al.* 2004). In Tīwī, also mixed lithic materials related to different ages were found: sandstone choppers, dating from 2.6 Ma (pre-Olduwaian or Olduwaian period) to 1.7 Ma and perforators that find a correspondence with Ra's al-Jins 61 (Usai 2000: 2–5), dating from Late Neolithic to Early Bronze Age.

In conclusion, the 2015 survey has been of great utility for the detection of the sepulchral evidence, in particular between Fins and BMH2. A complete mapping of these tombs can be easily done in the future also considering the



PLATE IA *The main village's compound with H1-H1a (foreground) at the beginning of the excavation. View from north.*

opportunity to investigate some of them, allowing us to integrate the sepulchral evidence specifically referred to BMH2.

Excavation of the Iron Age Village, the H1-H1a hut

The 2015 excavation went on at the northern edge of the village in an architectural complex quite different from the single round hut H5 excavated in 2014. The hut chosen for the archaeological investigation was H1-H1a, an oval structure, made of two units already recognizable on surface, which is part of a compound made of at least three main huts arranged one after the other defining a central shared area (Loreto 2015: fig. 2). H1-H1a was chosen for different reasons. First of all it is part of an architectural model that totally differs from H5 and is laid down on a higher ground, at an elevation of *ca.* 0.50 m above the floor level of H5, *i.e.* it is the most elevated area of the entire village so it should have preserved a deeper stratigraphy. Also, the hut is the closest building to the Bronze Age Tower, and could provide new data related to the transition between Bronze Age and Iron Age. Furthermore, no inner structures (such as basins or channels) can be seen on surface inside the main oval of H1 or the small H1a, which means that probably the hut covers a different function from H5, basically devoted to food processing activities.

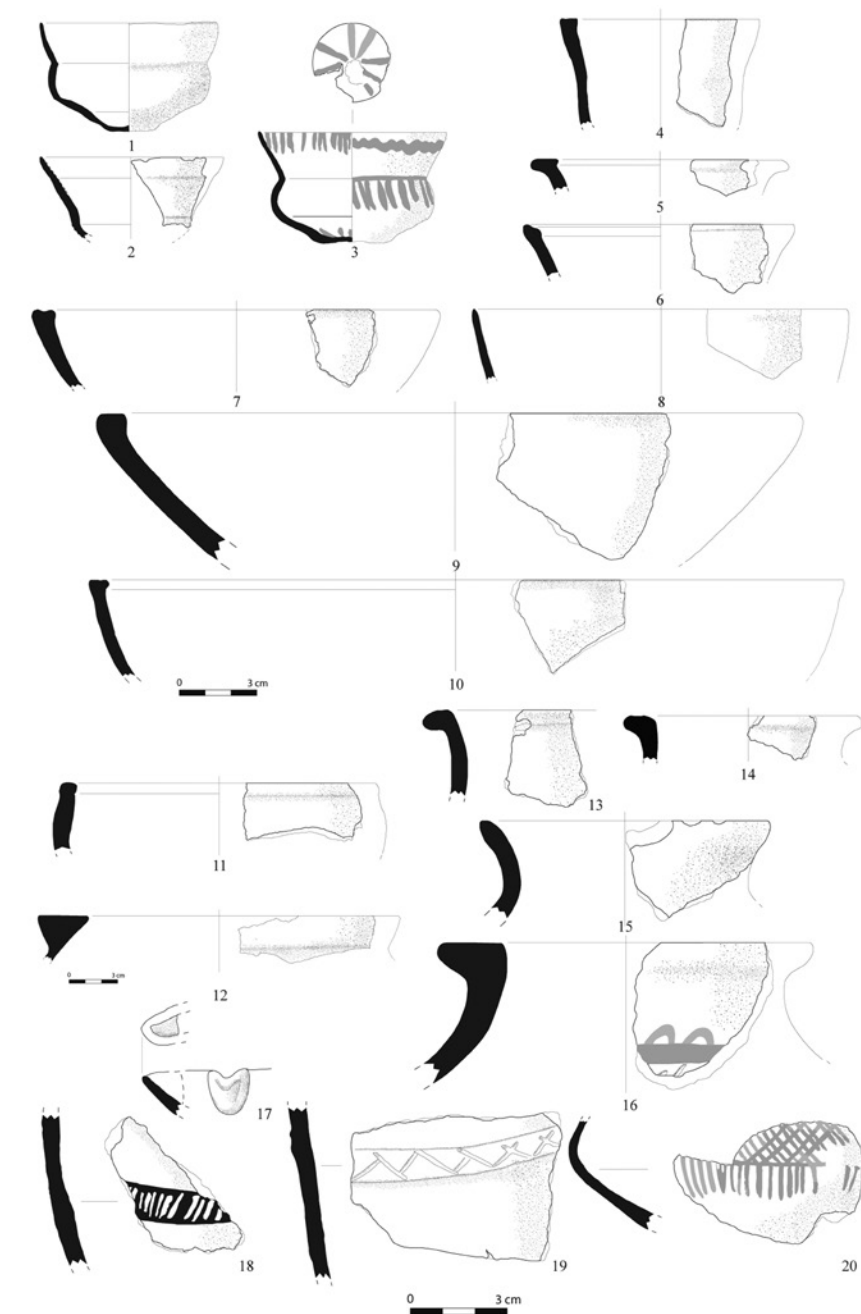


FIGURE 2 *H1-H1a* selected pottery: 1-3 type A; 4-10 type B; 11-16 type C; 17 spouted vessel; 18-20 decorated body sherds.

A 10×10 m trench has been opened, covering the southern half of the building. In detail, the whole area of H1a was excavated together with part of H1 main oval, where a test probe was accomplished. The excavation went on by defining the collapse level of the building: a huge amount of stone debris came down from the perimetral oval wall M1. It is a 0.60/0.70 m thick oval wall that runs by defining a 18 m long oval divided into two units (Pl. 1a): to the north H1, the main section that covers 2/3 of the building and to the south H1a, a small area which preserves the main entrance to the building on its southeastern side (Fig. 1, Pl. 1b). H1a is a small oval defined by M1 and two partition walls, M2 and M3, whose function is to divide H1a from H1. The entrance to the building is located in the southeastern part of H1a, leading to an L shaped corridor (L2) that divides two main inner rooms (L3 and L4) and one small area (L5). From L2 a second door leads to L1, the main oval space of H1 divided by inner partition walls (M5, M6, M7 and M8) in small rooms (L1 and L8) or fireplaces (L6 and L7).

The excavation, with a particular focus on the test probe opened in L1, allows us to see a complex sequence of occupation. The sounding went down for almost 1 m and revealed one main difference between the Bronze Age level and the Iron Age levels (Pls. 11a–b). From the bottom of the probe, the first is

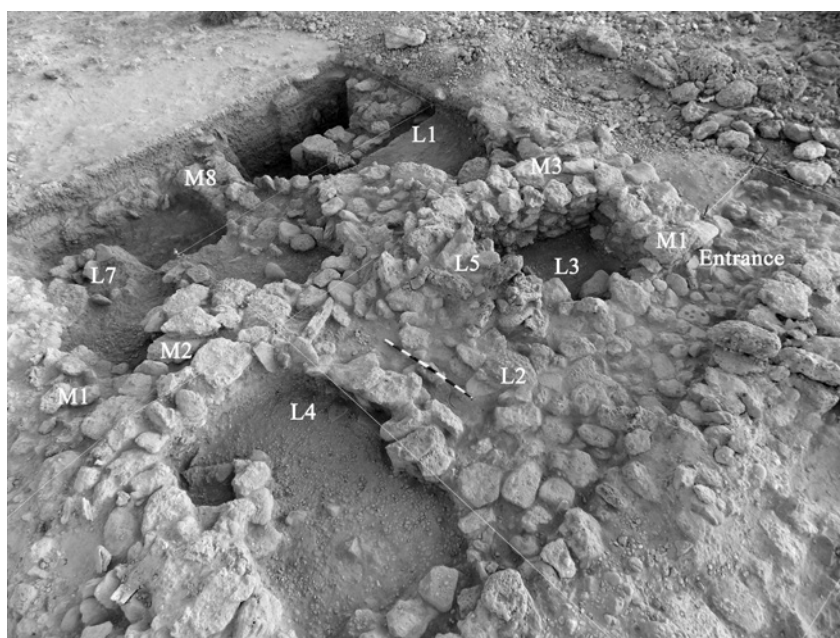


PLATE 1B *The excavated area of H1-H1a. View from west.*



PLATE IIA *H1-H1a after the excavation. On the bottom-left the sounding in L1. View from north.*

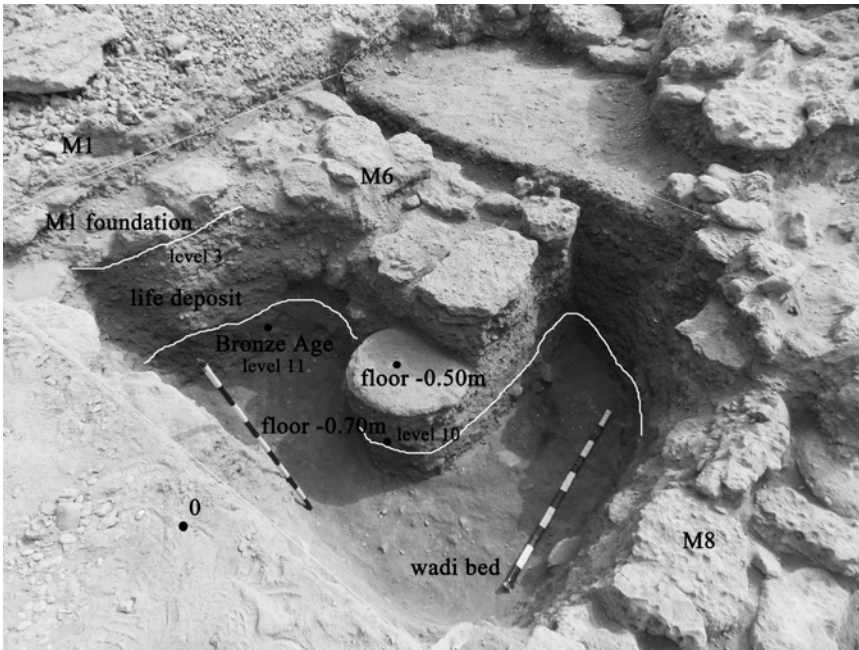


PLATE IIB *The sounding in L1. View from north.*

ascribable to the Bronze Age: a level 0.30 m thick of sand and *wādī* stones that covers the virgin soil of the *wādī* bed (level 11). Then, we are in the Iron Age, made of at least four main phases: a first occupational phase can be seen in the deepest floor detected *ca.* -0.70 m down the surface (level 10), followed by a continuous level (level 3) of sand, small *wādī* stones and discarded materials (shell, pottery and bones) with thin and very light charcoal levels or a single corals discharged level (level 9). At a depth of -0.50 m a second floor, made of the same level 3, only compacted with a single stone slab, can be recognized. At that times M₁ was not in place: its foundation row can be recognized only 0.35 m down the surface. It means that the first 0.35 m were related to a previous occupational phase; the second occupational level took place with the construction of wall M₁, a single wall that defines a single hut. At this stage at least M₆ and M₈ were built as divisor walls; then the one related to the construction of H_{1a}, the southern area surprisingly characterized by a stone slabs paved floor divided from the main oval by the construction of M₂ and M₃. In particular, the corridor L₂ was paved while L₃ and L₄ were made of a compact floor of sand and irregular small stones; finally, small elements such as fireplaces (L₆ and L₇) or an undefined small quadrangular area (L₅) were built.

Thanks to the abundance of collected materials from the sounding (lithic tools and a softstone vessels), we can state that the area was continuously occupied between the Bronze Age and the Iron Age. In particular, the softstone vessel found at the bottom of M₁ foundation row can be dated to the beginning of the EIA II (11th cent. BCE).¹

Coming to H_{1a}, this area seems to be the most interesting feature of the hut: the paved corridor and the rooms could suggest a living space where no food processing activities took place. In fact, this space has revealed an interesting amount of pottery items, in particular room L₃, where a rich amount of EIA II imported items were collected: it is a collection of food consumption red painted carinated bowls widespread in EIA II sites from Sharjah to central Oman.

The Material Culture from H₁-H_{1a}

H₁-H_{1a} hut revealed quite a complex collection of items. At first sight it appears as a rich building devoted not only to economic functions but also to executive commitment.

Unlike H₅, H₁-H_{1a} shows less faunal elements, most of which in the form of bivalves for food consumption instead of shells for baits or fish bones. In addition, few examples of sardines, shark and turtle bones were recognized,

¹ To be compared to Loreto (2015: pl. 111.b) and Yule (2014: fig. 16, item no. 3).

together with a small amount (compared to H5 collected bones) of medium size fish (dry sieving up to 3 mm was used during the whole excavation). Also, many examples of *Pinctada margaritifera* and other species devoted to manufacture working tools (spoon, small cups or polishing tools) from big size shells came to light. Finally, it must be stressed that in H1-H1a, as well as in H5, we found a huge amount of processed shells used to obtain beads for bracelets or necklaces; a reasonable explanation for the number of bronze tools (blades, scrapers and drills) found. In addition, a bronze snake was found near the entrance of H1a. Only very few examples of mammal bones (goats) were gathered.

The pottery collected from the village can be the most important artifact for the identification of the local culture and/or the possibility to recognize trade contact with the inner sites of the EIA culture or movement of people from the mountains to the coast for fishing season. The work is in progress by the definition of a formal and functional typology. In general, it must be stressed that the vast majority of the pottery items is related to the Early Iron Age II. Both local and imported vessels were recognized: in particular, imported ware are the red painted carinated bowls dated to the EIA II (Pl. IIIa).

A peculiar element was identified during the excavation of L8: preserved inside a *Lambis truncata* sebae in the layer just before the construction of M1, *i.e.* the hut, we found a couple of pottery snakes, originally two decorative elements of a vessel. It seems that the snakes were stored inside the *L. truncata* after being separated from the original vessel (Pl. IIIb). Together with the bronze snake these elements can indeed suggest somehow a peculiar sacral function of the building or, if one looks at the stratigraphy, a cultic foundation ritual that took place before the construction of the hut, a very particular one indeed. Typical of the EIA II, both bronze snake figurine and decorative elements of the vessels, the snake can be found in a vast range of archaeological sites, from Tell Abrak to Bithnah and further south (Benoist 2001: 61; 2004; Magee 2014: 238). The cultic role of the snake in pre-Islamic Arabia is quite common, from southwest Arabia to the Gulf area. In particular, an Elamite or Iranian tradition has been suggested for the snakes occurrences in the Emirates and northern Oman EIA II sites (Benoist 2008: 36).

Finally, according to the collected lithic materials it is clear the difference between the Bronze Age production, identified at the bottom of the sounding in L1 (undeterminable fragments and elongated flakes), and the Iron Age flint, much more coarse if compared to the Bronze Age and probably used to cut the fish.



PLATE IIIA *Carinated bowls from L3.*



PLATE IIIB *Snakes inside a Lambis truncata sebae.*

BMH2 in its Historical Context: Southeastern Arabian Peninsula between the Early Iron Age (EIA) and Late Iron Age (LIA)

Cultural Framework and Chronology

The geographic definition of the southeastern Arabian Peninsula includes the northeastern limit of the United Arab Emirates and northern Sultanate of Oman, i.e. the Sharqiya Province (the Eastern Province) where sites such as Ra's al-Hadd or Tiwī are located); the al-Hajār Mountains, where the LIA Samad culture takes place, to the south, or sites such as Rumeilah and Hili, to the north; the Batinah coast with Dibbā, to the north, and Sib to the south; and the Musandam Peninsula, today divided between the Sultanate and the U.A.E., where the Iron Age sites of Tell Abrak or Shimāl are located.

This area represents the location of a cultural and economic network which encompasses a long period of time stretched from 1300 BCE to 300 CE. It is a complex frame of local cultures sharing, or estranged, by material culture assemblages, economic strategies and social behavior, involving cultural exchanges with the Mesopotamia, central Gulf and southern Iran. Based on the number of sites, one of the most rich period of agricultural exploitation of the region took place during the Iron Age: basically due to the Iranian *qanat* inspired by *falaj* hydraulic system. The definition of Iron Age fits well mostly because of the lack of written sources. Only at the beginning of the 3rd cent. BCE writing appears on local coins in the U.A.E. sites and displays some kind of signs during the LIA (Yule 2014: 16). Before the Iron Age, in 3rd and 2nd millennia BCE the toponym of Magan (Sumerian) and Makkan (Akkadian) in Mesopotamian cuneiform texts have been stated for Oman and western Iran (Potts 1986, Yule 2001). In a later period, Neo-Babylonian and Neo-Assirian sources mention the toponym of 'KUR qadē/qadū', the Semitic 'east' also found in Latin as designation of a southeastern Arabia tribe (Potts 1985: 82). Also, Qadē has been associated to the Achemenid *Machiya*, the population of Maka known from the king Dareios's reliefs to be part with the Gedrosia (Baluchistan) to a satrapy which lies on both sides of the Gulf of Oman (Potts 1985: 83–85; Yule 2014: 17–18). In recent decades the number of field project devoted to the Iron Age increased dramatically (Wilkinson 1977, Potts 1990, 1992, Magee 2014, Yule 2014). Formerly divided into EIA (1300–300 BCE) and LIA (300 BCE–300 CE; Yule 2014) it has been subdivided into more precise phases *Fer I* or EIA I (1300–1100 BCE), *Fer II* or EIA II (1100–600 BCE), *Fer III* or EIA III (600–300 BCE; Magee 1996a, Benoist 2001), until the *préislamique récente* PIR.A (300–200 BCE), PIR.B (200 BCE–100 CE), PIR.C (100–300 CE) and PIR.D (300–500 CE; Mouton 2008).

In a region characterized by dry climatic conditions the key to understand the settlement pattern of the EIA sites is the vicinity to the water resources, which interfere with the agricultural potential of an area. Based on environmental aspects P. Yule, after R. Boucharlat, groups the EIA settlements in different functional categories: 1) coastal sites dependant on fishing or agriculture; 2) piedmont sites or oasis located at the mouth of a *wādī* and 3) fortifications. In addition, industrial sites and necropolises are part of the ancient landscape. The best preserved architecture is that of the tombs, in a rich typological number of forms: from simple pits to multichamber subterranean stone-walls tombs. The most impressive type of monumental architecture is that of the forts, such as Salūt or Hili, well fortified military structures around which the population lived. Regarding the residential sites and housing the best preserved site is Rumeilah (Abu Dhabi) where a relative high technical degree is displayed by square plans and the usage of mudbricks and wooden elements for columns (Boucharlat, Lombard 1985). The ancient village-type landscape is completed by the industrial areas, mostly the *falaj* system of underground canalization for agricultural purposes.

The EIA I, still poorly known, appears as a transitional period in which distinct cultures coexist. Few sites are known, for example Shimal and Tell Abraq in U.A.E. (Magee 1997, Benoist 2001). Both were born above more ancient settlement and show a new type of pottery production previously unknown. By contrast, during this period on the northern part of the eastern coast of the Oman peninsula the architectonic type of the Bronze Age tower seems to survive at Kalba (Carter, Magee 1999).

The EIA II represents a mature phase during which the communities become able to develop more intensive economic strategies, social organization and land exploitation. The *falaj* system takes place as principal boost for the agricultural activities, while specialized practice spread out: pottery production, metallurgy, residential and sacral architecture. Thanks to the pottery a more homogeneous picture can be observed: similar types, mostly painted ware, can be found widespread in the EIA II sites between which a trade network is settled between Ras al-Khaimah and central Oman (Benoist 2001: 48). Also the softstone vessels (chlorite or steatite) became a diagnostic production for the EIA II (Benoist 2008: 35–36).

The EIA III is a period during which a general contraction can be observed. The number of sites decreases and the diagnostic EIA II painted ware gradually disappears.

The LIA plus the PIR are periods characterized by different and contemporary cultures probably originated by mobile groups (Mouton, Schiettecatte 2014: 47–86; Yule 2014: 55). Some EIA sites are abandoned and new settlement

patterns appear. Between them, the best known are Mleiha, in the northern Oman peninsula (U.A.E. of Sharja), and the Şamad culture ones, after the *wādī* Şamad valley in central Oman, where almost fifty sites have been grouped in a new culture emerged in the last centuries BCE. It is a period of great changes. If during the EIA the material culture was homogenous, now in the Mleiha assemblages one can distinguish Hellenistic or Parthian traditions. On the contrary, Şamad culture's sites show their own typical productions to which can be added both a local production still linked to the EIA and new insets from Mleiha.

*Dating BMH2 for the Definition of the Settlement Pattern:
A Multilayer Subsistence Economy*

Up to now, the best way to propose a chronology for the BMH2 occupational phases is to look at the pottery assemblages in the wider EIA-LIA regional context. First of all, according to the stratigraphy, it is clear that the site was occupied during the transitional period between Bronze Age and EIA. No levels of abandonment were identified between the lower levels in which Bronze Age lithic came to light (level 11 in H1-H1a and level 9 in H5) and the first Iron Age levels in which stone vessels and pottery assemblages were collected. An interesting point is the lack of EIA I materials. Apparently we have a direct shift from the Bronze Age to the EIA II period. The Bronze Age occupation seems to continue during the first Iron Age centuries, as seen in Kalba and northeastern Oman coast. At this point the EIA II material culture came to light. In both H1-H1a and H5 the earlier Iron Age assemblages (pottery and shells) are related to levels in which no architectonic structures are preserved. The first Iron Age occupation of BMH2 seems to be strictly related to seasonal fishing activities and pottery. Then, considering the prosperity achieved, the village was born and different kind of agglutinate huts, single huts, shelters or functional buildings were built.

According to the 2014–2015 excavations it seems that the village has lived an intense industrial phase during the whole EIA II. The vast majority of the collected materials confirms such a dating. Stone vessels, pottery, bronze arrow heads and cultic practices related to the snake symbolism have led us towards such direction. BMH2 should have had its best for at least five centuries after the Bronze Age occupation.

BMH2 emerged in a period during which a settlement intensification took place in southeastern Arabia Early Iron Age II period along the Gulf regions, in particular from the Musandam peninsula to the Hajar mountain piedmont and alluvial plains. This impressive spread of settlement was mainly allowed by the brand new irrigation system of the *falaj*, as a matter of fact responsible

for intensive cultivations. Paleoclimatic proxies suggest that at the beginning of the first millennium BCE a radical decrease in rainfall occurred (Parker *et al.* 2006). The underwater channels are the natural solution to the problem. In this scheme, BMH2 stands as a particular case. Although in *wādī* Bimah agricultural areas and terraces have been identified, no *falaj* irrigation structures were detected up to now. The only water resources must have been the wells that still today are working inside the *wādī* Bimah or, seasonally, the water coming from the mountain through *wādī* Bimah and the secondary *wādī* flows. In addition, the architectonic features of BMH2 are quite unusual for an Iron Age settlement, where square buildings made of mudbricks or stone blocks are arranged according to residential purposes.

Considering the extension of the agricultural area and the limited number of terrestrial mammals collected, as well as the architectonic features of the village, we still believe that BMH2 was seasonally occupied during the fishing periods, when also agriculture and breeding were part of the coastal life. Although, waiting for a complete mapping of *wādī* Bimah to be achieved, mainly in order to identify possible *falaj*, it is clear that this coastal area was deeply exploited for a number of purposes.

Having discussed of agriculture and breeding, the major resource is the sea. The role of the coastal settlement can be easily seen by referring to the inland sites, where during the EIA II coastal resources emerged, such as shell-fish and dried fish, the last one particularly useful as food and fodder (Magee 2014: 226). BMH2 reveals an impressive amount of sea products. Above all the shell-beads, whose production must have been a major issue in the village, probably a currency of exchange in the commercial trade.

Between the 'industrial' activities, the local production of bronze tools could be testified by the abundant number of bronze production refuses, in shape of small spherical drop-shape items.

Up to now EIA III and LIA materials are very few, only rare shards and two bronze hooks (Loreto 2014). It seems that the main settlement is now Tīwī, few kilometers to the south, where the EIA site is followed by an impressive village made of a permanent urban settlement.

The definition of the Iron Age village proceeds with promising results. After 2015 excavation campaign we can implement the range of social practices adopted in a coastal environment by detecting the main activities of the village and adaptation strategies. Also, an assessment of the local chronology has been proposed.

After 2014 excavation of H5 we thought that the village could have been a seasonal village, only occupied during the fishing season. Three main

activities emerged: 1) fishing, related to the sea; 2) processing of sea resources by dry fish processes and shell beads productions; 3) agriculture, related to the exploitation of the inner *wādīs*. Now we can enhance this picture by adding further elements: trade and commerce. The presence of such an amount of EIA II red painted ware can be explained with commerce purposes. Considering the great amount of shell-beads, we could also suggest that the currency of exchange was as a matter of fact the shell-bead production. Furthermore, the identification of such peculiar decorative elements as snakes can be associated to a building of a particular prominence, usually related to sacral practice or associated to the presence of a community chief. Actually, considering the architectural details of H1-H1a hut and the material culture emerged, it seems that although it was a seasonal village it was a residential area where, right in H1-H1a, domestic and or cultic activities were conducted.

Considering the H1-H1a results, it is now a necessity to go on with the excavation of other buildings, both huts and shelters (the latter never investigated up to now). Still, the identification of necropolises and tombs will be a second interesting topic to be implemented in the future.

The collected pottery from 2014–2015 seasons reached a significant number of interest. A detailed typology can be defined, on the basis of shapes and function. A further step will be to better identify the imported ware from the local production by comparison and analyses on the raw material: a survey devoted to the identification of source areas will be planned.

What can be pointed out, is the need to better understand the role of BMH2 in the whole EIA II framework. In the absence of *falaġ* system, BMH2 is a peculiar component, with local adaptation strategies and a complex economy which survived for a long time span. Last but not least we must also consider to proceed with the excavation of the Bronze Age tower, defined at the moment according to the general architecture and lithic material found therein. This could shine a new in light on a peculiar typology of monuments and help us to understand the interesting link between two major historical phases: the Bronze Age and the Iron Age transition.

The Material Culture after 2014–2015 Seasons²

The Ceramic Assemblages from H5 and H1-H1a

The 2A preliminary typology of BMH2 ware has been proposed, based on formal features, which in turn are related to those of pottery assemblages from

2 Contribution by Denise Antonietti and Maria De Falco.

other archaeological sites of the same geographical area and time span attested in bibliography. The pottery assemblage has been divided into three main formal types: small carinated bowls, bowls and jars. A premise should be made: most of the potsherds collected are in a fragmentary state of preservation, and only very few vessels could be entirely reconstructed, thus preventing us from having reliable data about complete shapes.³

Type A: small carinated bowls. We defined 'small carinated bowls' those vessels small in size, thin walled with a more or less deep carination at about half of their height. Among small carinated bowls, sherds belonging to three different classes that slightly vary from each other in the profile's shape have been outlined. *A.1*: in 2014–2015 excavations seven exemplars of this type have been identified, all of which decorated. The wall above the carination is straight with a rounded, slightly thinned rim (Fig. 2.3, Fig. 3.1). *A.2*: it displays more rounded walls above the carination, although a similarly rounded, thinned rim (Fig. 2.1–2, Fig. 3.3). Of type *A.2*, five decorated and six non decorated fragments have been collected as a whole. *A.3*: these vessels distinguish themselves from others for a sort of 'double'—though lighter—carination which suggest a comparison with the shape of a bell (Fig. 2.2). Five potsherds belonging to this type have been recognized, three of them with and two without decoration. All three types vary very little in size, having a diameter that ranges between 9.6 and 5.8 cm, with an average of 7.6 cm.

Decorations on painted potsherds all belong to the same style, both on the inside and on the outside of vessels. On the inside, 1 cm long and about 3 mm wide bands are painted, departing from the rim either perpendicularly or oblique. On the bottom, a star/flower shaped decoration is preserved in some of them. On the outside of the vessels, right below the rim, an undulating or zigzag band runs all around the vessel, and a straight line fills the groove of the carination. From this straight line, straight or oblique bands lean out towards the lower part of the vase, stopping some 1–2 cm above the bottom. The color of painting generally ranges between reddish-brown and dark violet. On the basis of shape and fabric this type might be associated to consumption activities.

3 The excavation of H1-H1a and H5 yielded quite a great variety of fabrics that range from fine (compact clay, rare or no inclusions) to coarse wares (granulated fabric, large and frequent inclusions). The analysis of the fabrics is to be considered still at a preliminary stage: apart from the major distinction in three main categories based on coarseness, no archaeometrical study has yet been carried out. It must be specified also that in this classification only relevant fragments which have been drawn were considered. A small amount of other fragments appear only as data in the excavation database, but though relevant were not enough preserved to become part of the typology; also complete items are extremely rare.

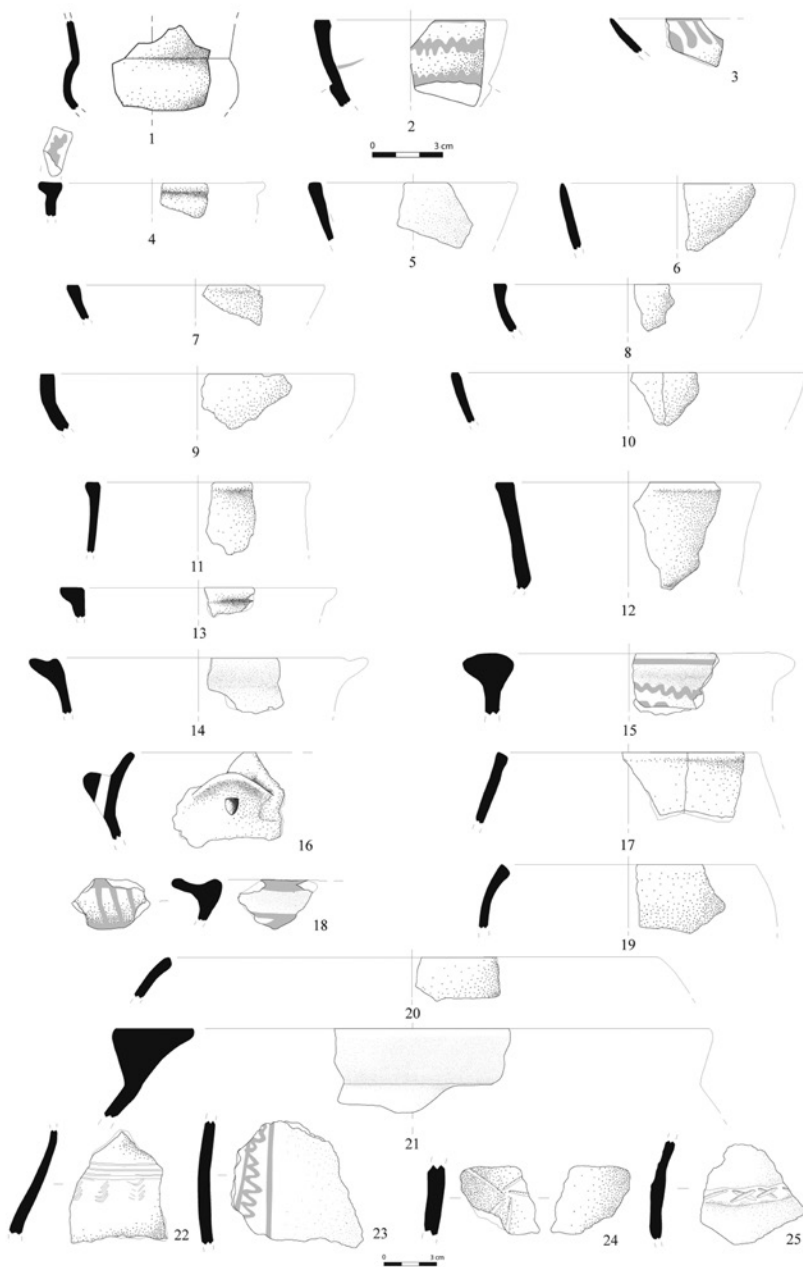


FIGURE 3 *H5* selected pottery. 1-3 type A; 4-10 type B; 11-21 type C; 22-25 decorated body sherds.

Type B: bowls. We defined 'bowls' all open shapes, regardless of their dimension, which are not characterised by carinations, spouts or handles, nor by burned traces due to cooking. For those vessels of which we have been able to determine the diameter, a more general division was made according to their size: we called 'small bowls' those with a diameter that reaches a maximum of 10 cm, 'medium bowls' those whose diameter ranges between 10–20 cm, and 'large bowls' those exceeding 20 cm in width. No entire vessel belonging to this category has yet been found, therefore the distinction in types was based on walls profile and rim shape: three main classes have been recognised distinguishing walls profile, and sub-types indicating rim shape variants are indicated by letters. *B.1*: straight walled vessels; in all its sub-categories is the second less attested with a total of nineteen potsherds from H1-H1a and H5. *B.1a* is characterised by a flat rim (Fig. 2.5, Fig. 3.5,10), whereas *B.1b* rims are grooved on their upper surface (Fig. 2.6, Fig. 3.7), and *B.1c* rims are rounded (Fig. 2.8, Fig. 3.6). Diameters in this type vary greatly, starting from a minimum of 11.2 cm to a maximum of 37.4 cm. *B.2*: it comprises bowls with rounded walls. According to data so far available, this appears to be the most numerous category in both huts: sixteen potsherds from H5 and fourteen from H1-H1a. This type was as well divided into two sub-categories: *B.2a* with flat rim (Fig. 2.9–10, Fig. 3.4,8–9), *B.2b* with a grooved one (Fig. 2.7). Like in type *B.1*, here also a great variety of diameter is represented, but it can be observed that for grooved rimmed vessels there is a remarkably higher percentage of diameters about 20 cm wide. *B.3* vessels are known in only one exemplar so far, distinguished for undulated walls and a flat rim (Fig. 2.4). Its fragmentary state of conservation has not allowed a more detailed analysis of the shape, which could as well be that of a cup or a glass, also given the diameter of 8.2 cm. The great majority of bowls is not decorated. Two exceptions, though, need to be pointed out. In *B.2a* sub-category two vessels present a decoration. The first one has a series of incised 'X' on the upper surface of the rim, whereas the second, besides a rounded (apparently intentional) hole under the rim, presents painted oblique red bands departing from the rim which seem to cover the whole body of the vessel, although its fragmentary state of conservation makes it quite hard to establish. On the basis of shape and fabric this type might be associated to food processing activities.

Type C: jars. Under the definition of 'jars' are grouped all closed shapes used for storage of either liquid or solid goods. As main distinction criteria, we took into account the mouth of vessels, and whether they are or not characterised by a neck. *C.1*: we define 'necked jars' all those vessels that are characterised by a neck (regardless of its length), *i.e.* those in which the inner profile of the shape, after a convexity oriented towards the inside, bends towards the outer

part of the vessel in proximity of the rim. As dimensional criteria, for necked jars we established that vessel mouths ranging between 7–15 cm are to be called medium; whereas diameters wider than 15 cm are defined large. As a whole, sixteen fragments of this type have been found. In 2015 assemblage jars characterised by a protruding rim are more frequent (Fig. 2.13–14, 16), whereas 2014 excavation yielded a group of necked jars the majority of which presents a straight rim, either protruding or not (Fig. 3.3.11–13). Other peculiar shapes are a jar with everted grooved rim and another one which recalls more those with protruding rim typical of 2015 assemblage, though this 2014 exemplar presents decorations both on the rim itself (a straight line running on its margin) and on the neck, with a series of at least two horizontal undulating lines (Fig. 3.14–15). Although normally non decorated vessels, one specific potsherd should be highlighted, as it displays both plastic and painted decoration. The painting follows an undulating line around the neck, and right beneath it a plastic relief was applied. On the latter seem to have been impressed or incised some other decorations, but the sherd is too fragmentary to determine their nature (Fig. 2.16).

Non necked jars required a more detailed distinction. Nonetheless, for both of the following classes the same dimensional criteria we used for classifying bowls were followed. C.2: it groups all jars characterised by a thickened protruding rim (either flat or slightly sloping) and no grooves whatsoever. They are usually larger than C.3 jars, and they averagely have thicker walls (Fig. 2.12, Fig. 3.21). In 2014 campaign only one exemplar of this type was found, whereas in 2015 the number of potsherds belonging to this category reached up to five. C.3: it comprises a smaller group of jars with rounded rim which eventually present a more or less deep groove on the inside right below the rim itself and in 2014 assemblage they are sometimes characterised by vertically perforated lugs (Fig. 2.11, Fig. 3.16–17, 19–20). In this type, the proportion of findings is inverted: nine sherds of C.3 were found in 2014, but only three in 2015.

A peculiar potsherd that should be highlighted is a protruding grooved rim with painted decorations that both appear on its upper surface and on the outer margin of the rim and the body right beneath it (Fig. 3.18). On the basis of shape and fabric this type might be associated to storage purposes.

Spouted vessels. No typology of this kind of ware could be suggested. The few pieces collected are fragmentary and none of them can give a more precise idea of the shape of the entire vessel. Nevertheless, a brief description shall be given: small, thin spout protruding from the wall of the vessel (Fig. 2.17) which do not display any decoration.

Decorations. Quite a number of fragments show traces of decoration, both in fine and medium-coarse wares. Styles of decoration vary from painting to

incision, and also some plastic *appliqués* have been found. Painted decoration in the forms described above is a distinctive marker of small carinated bowls. Another wall of fine ware displays a decoration somewhat similar to those painted on *A* type vessels, but in this case on the upper part of the shoulder of the vessel, criss-crossing lines replace undulating ones (Fig. 2.20). On another fragment, white vertical bands parallel with each other are drawn on a background black band (Fig. 2.18). On a sherd belonging to 2014 assemblage a vertical decoration is painted, characterised by both an undulating and a straight line (Fig. 3.23). Another example of decoration is given by a series of horizontal undulating lines painted in reddish-brown.

Coming to incised decoration, a whole lot of walls with an horizontal, thickened band covered with incised 'X'-decoration was yielded (Fig. 2.19, Fig. 3.25). This decoration is recurrent on walls of variable thickness and different fabrics. Besides these, a bowl rim decorated with crosses (see above), the beginning of a neck with four parallel horizontal lines and vertical series of palmette right below it (Fig. 3.22), a wall with star-shaped lines on the inside (Fig. 3.24), and one perforated lug with three diverging lines were found.

H5 and H1-H1a Pottery Assemblages

The pottery assemblage collected in the two huts is basically homogenous with a recurrence of fabrics and forms; the fabrics recognized may show a variation from one hut to another. Both huts have a similar stratigraphy: a Bronze Age level is followed by an Early Iron Age pre-hut level; at last an intense Early Iron Age occupation with the construction of the huts.

H5. H5 pottery assemblage consists of one thousand and sixty-six total sherds, seventy-six of which relevant for the reconstruction of the shapes or for their significant decoration. With regard to the fabrics, H5 pottery was only preliminarily analysed.⁴ As shown in Fig. 4, within H5 pottery assemblage medium ware appears as the most abundant fabric (51%), followed by a lower percentage of coarse ware (31%) and a minimum of fine one (2%). Fabric percentages reflect the major occurrence of storage/processing vessels, such as jars and bowls attested only in coarse or medium wares.

H5 has a simple plan, a main room with functional structures both on the inside and the outside, such as dry fish basins (Loreto 2014). Therefore, pottery analysis has been conducted taking into account mainly the stratigraphic evidence and the spatial location of the finds, whether inside or outside the hut.

4 During 2015 it has been possible to conduct a more detailed analysis of the fabric assemblage of H1-H1a reaching a better understanding of it. Therefore, H5 percentages must be considered only as a preliminary work hypothesis.

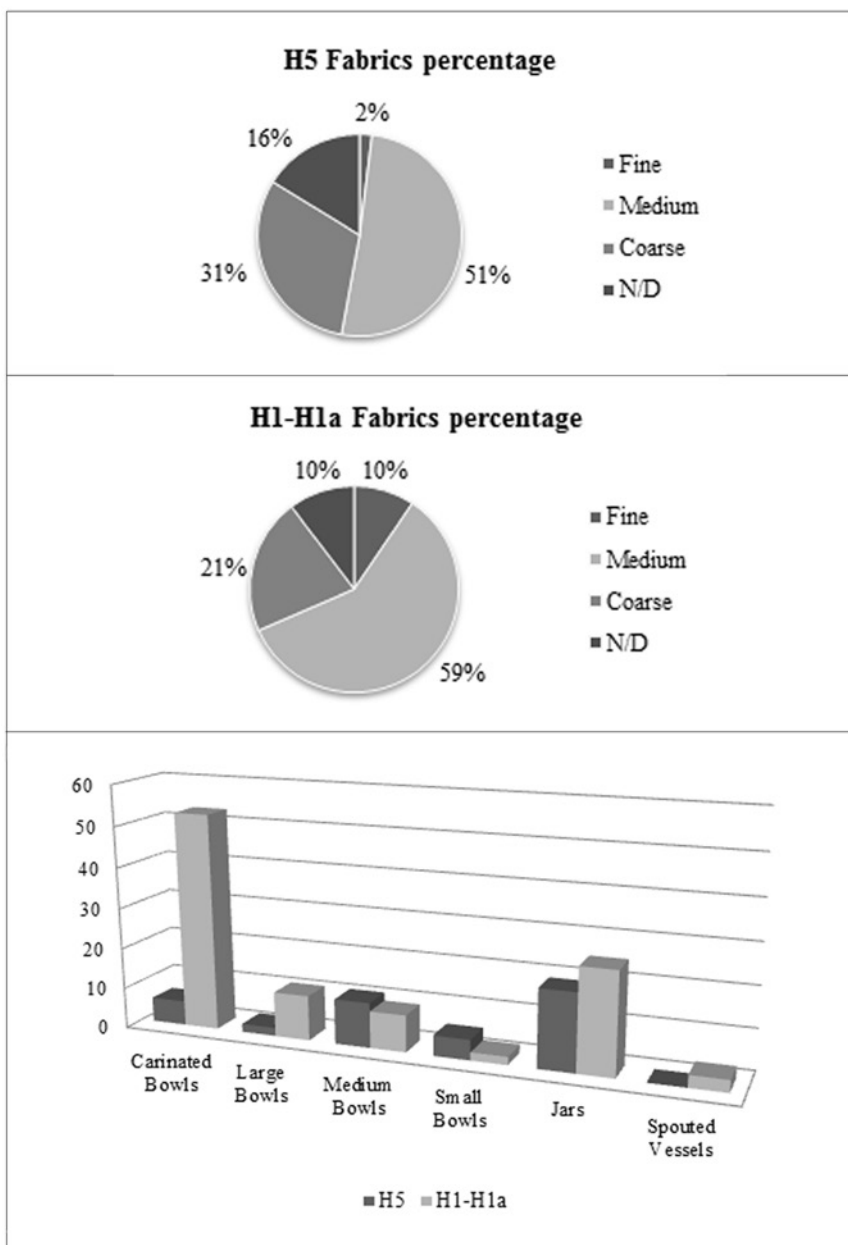


FIGURE 4 Fabrics and formal types occurrences per hut.

With regards to the chronological time span, the most ancient evidences date back to the Bronze Age, level 9. However, no pottery assemblage could be associated to this period. Pottery is therefore concentrated in the EIA levels. It is distributed among all the hut's life levels, with peaks in the surface level, levels 4 and 7. From now on, levels will be discussed in their pottery assemblages proceeding from the top to the bottom of the stratigraphy.

The surface level includes findings coming both from the inside and the outside of the hut and yields a consistent amount of potsherds (two hundred and eighteen fragments) even though only seven recognizable shapes: three jars (*C.2*, *C.3* of which one with vertically perforated lug; Fig. 3.16, 21), two bowls (*B.1a* and *B.1b*, diameter N/D) and two small fine bowls (*A.2* type; Fig. 3.3). Among the body sherds, three stand out for their features and decorations (Fig. 3.22, 25). Level 4 is a compact and thick level covering the proper life levels throughout the whole hut (levels 5 and 6 inside the hut, level 7 outside). This layer yields quite a conspicuous amount of pottery (three hundred and forty-eight sherds), thirteen shapes could be recognized attesting an high percentage of bowls (eight individuals, mainly *B2*, generally with not definable diameters except for two medium bowls; Fig. 3.4) and five jars (three *C.1* and one *C.3* as in Fig. 3.12–14, 20). Among the body sherds, three stand out for their decoration: one bearing the already attested incised-x decoration, a painted one with perpendicular bands in reddish-brown hue only partly visible, and the last, maybe most significant one, has five radial incised bands located on the inside surface of the vessel characterised by a convex inner section (Fig. 3.24). Level 5 and 6 represent the inner more conspicuous life levels basing on the shells, bones and bronze records. From the ceramic point of view, the assemblage appears quite scarce with only ninety-five sherds gathered and five reconstructed shapes: one small fine carinated bowl, three bowls and one necked jar (*A.1*, *B.1a*, *B.2a* and *C.1*; Fig. 3.1, 5, 15). Level 7 corresponds to the same anthropic level as 5 and 6 though located outside the hut to the western excavated area. It yields the larger amount of pottery with three hundred and forty-four collected sherds and twenty-four reconstructed shapes. Bowls are certainly the more attested shapes with fifteen sherds (*B.1a*, *B.1b*, 4 *B.2a*, 2 *B.2b*, 5 *B.1c*; Fig. 3.6–10), followed by eight jars (ranging between *C.1* and *C.3*; Fig. 3.11, 17, 19), and one small bowl (*A.2*). This high concentration of potsherds outside the hut's living area might suggest the waste function of this area laying between H5 and the nearby H6 side walls, therefore ascribable to one or both of the huts. Level 9, the last anthropic level of the area before the bedrock, yields only sixty-one sherds, four of which reconstructed: two painted bowls (type *A*; Fig. 2), one painted jar (Fig. 3.18), two decorated body sherds one of which painted (Fig. 3.23). This level, even though partially related to the Bronze

Age on the basis of the lithic assemblage and stratigraphic location, still yields shapes typical of the Early Iron Age for style and comparisons and in all similar to the above life levels. This might confirm the direct switch between the Bronze Age and the EIA II in this area.

On the whole, as seen in Fig. 3, the majority of shapes reconstructed are large and medium bowls (twenty-eight specimens), followed by jars (sixteen specimens). Only six small carinated bowls, four of which painted, attest a scarce representation of consumption or personal use pottery. This framework confirms the general hypothesis of the functional use of H5 with a dump area right outside the western portion of the perimetral wall, between H5 and H6. On the grounds of its pottery assemblage, a food/fish processing function of the hut during its Early Iron Age frequentation can be suggested.

H1-H1a. H1-H1a hut yielded one-thousand four-hundred and four pottery sherds, divided in the three main phases of anthropic occupation, one hundred and forty-eight of which relevant for the reconstruction of the shape or for the decoration. The most recurrent fabric type is medium one (45%), followed by coarse ware (35%) and by a lower, though considerably higher than the previous hut, amount of fine ware (10%). As previously stated, during the 2015 campaign a more detailed fabric analysis could highlight further differences with H5.

H1-H1a as the previous hut has been excavated only in its half. Unlike H5, this hut has a more complex plan. It has been possible to distinguish different major and minor room inside the hut, as explained above (Fig. 1). Therefore, pottery analysis has been carried out taking into consideration both stratigraphic data and spatial distribution in order to point out a possible correlation between specific functional types and hut's inner spaces. Levels will be analysed from the bottom to the top of the stratigraphy, highlighting the different chronological and building phases of the hut.

The most ancient phase of human use of the area, level II dated to the Bronze Age, is located at the bottom of S1 in the main room of H1 and is characterised by a limited pottery assemblage, only thirty sherds, with no diagnostic or reconstructed shape. It should be noted that on the edge of the Bronze Age level a softstone vessel fragment was collected. It is a body sherd characterised by an incised decoration with a bundle of horizontal parallel lines probably near the bottom, and an oblique similar bundle forming a series of triangles.

As previously stated, from S1 three levels (10, 9 and partly 3) referable to the Early Iron Age and located below the hut's foundation rows emerged. They attest an human frequentation of the area preceding the setting of the hut. The pottery assemblage has been preliminary studied and it does not show a great variation compared to the upper levels. This phase might testify

a different use of the area possibly linked to the subsequent hut. The three levels appear homogenous yielding a conspicuous amount of potsherds, one-hundred and seventy-nine on the whole. They yielded five jars (2 *C.3*, 2 *C.1*; Fig. 2.15–16), seven bowls (2 *B.2a*, 2 *B.2b*, 2 *B.1c*; Fig. 2.8–9), five carinated bowls and two spouted vessels. The most relevant characteristic of this ceramic assemblage is both the presence of spouted vessels, collected only in another level (level 8) and the relevant decoration found on two body sherds. Beneath a *L. truncata*, possibly intentionally set, two fragmented body sherds were found bearing a plastic snake decoration, characteristic of EIA II.

The proper life levels can be recognized in different rooms of the hut. Level 3 in L1 and L8, levels 5 and 7 in L3, level 6 in L4, and level 8 in L7. These levels yield the majority of the pottery assemblage, with different shapes concentrations. Level 3 is located in H1, inside its major rooms. It stands out for the highest amount of reconstructed shapes: fifteen carinated bowls (types attested *A.1*, 6 *A.2*; Fig. 2.1), eight bowls (*B.1a*, *B.1b*, 2 *B.2a*, *B.2b*; Fig. 2.5–6, 10), and ten jars (2 *C.1*, 3 *C.2*, 2 *C.3*; Fig. 2.11–13). This layer yields an high amount of pottery and also the highest concentration of a fabric that appears peculiar of H1-H1a: a yellowish compact medium ware characterised by the recurrence, where preserved, of a dark brown slip both on the inside and outside surface. Furthermore, it is often associated with the incised-‘X’-decoration. Level 5 and level 7 in L3, a minor room in H1a, appear relevant for the concentration of small carinated bowls in such a restricted space, up to sixteen sherds were collected among which, two almost completely reassembled (ranging between all *A* types, included the single *A.3* specimen; Fig. 2.2–3). They all bear the typical reddish-brown painted decoration except for one sherd. Other attested shapes are three bowls (type recognized *B.1a*, *B.3*; Fig. 2.4) and three jars (*C.1*). Level 6 in L4, the main H1a room, appears quite scarce with only eight sherds gathered and one small fragment recognizable as a small carinated bowl. The last life level of the hut before the collapse of the surrounding walls is level 8, identified by a small fireplace slightly successive to the previous levels. It yields a limited amount of pottery, thirteen total sherds. Only one recognizable sherd appears relevant: a spouted vessel with an accentuated spout (Fig. 2.17). Level 2 is a sandy layer covering the collapsed walls, thus subsequent to the proper life levels of the hut. It spreads both in the inside and outside of the hut and does not yield much relevant pottery, only six carinated bowls (*A.2*, 2 *A.3*), two bowls (*B.2a*) and one jar (*C.2*). Finally, the surface level, both in the inside and outside of the hut yields three jars (*C.1*; Fig. 2.14), five bowls (*B.2b*, *B.2a*; Fig. 2.7) and four carinated bowls (*A.2*).

On the whole, the shapes mainly attested in H1-H1a are bowls and carinated bowls in medium and fine wares, followed by jars. Nevertheless, the

great variety of attested shapes suggests a more complex use of this hut. Taking into consideration the spatial distribution of the pottery assemblage during the main life level, it appears that the major room of the hut (L1) has the main concentration of potsherds and a high representation of all the shapes (*A*, *B*, *C* types and spouted vessels), with the highest percentage of carinated bowls (*A*). Among the other minor rooms, L3 stands out for the peculiar concentration of carinated bowls in such a limited space; on the contrary, L4 appears to have a scarce pottery representation. A specific function of L3 room might be inferred, possibly for pots storage. Concerning the shapes attested, the presence of spouted vessels appears relevant especially for their location in deep layers of the hut: two spouts were found in the level preceding the building of the hut. This might link this specific ware to the former use and destination of the area.

After a preliminary analysis the two pottery assemblages appear to have quite a coherent typological correspondence. The main difference lies in the consistency of the sample. The two huts yield almost the same amount of sherds and similar types of vessels can be recognized. The major variation lies in the quantitative representation of the single shapes.

Bronze Age levels appear inconsistent in both huts to make any consideration on the pottery assemblage, except for the general lack of specific Bronze Age vessels.

With regard to the Iron Age levels, both huts yield a conspicuous pottery sample that appears chronologically coeval. As seen in Fig. 4,⁵ H5 is characterised by a significant amount of bowls and jars, in H1-H1a all the shapes are well represented but the largest amount of small carinated bowls undoubtedly stands out. Another shape peculiar of H1-H1a is the spouted vessel, completely lacking in H5.

The complexity of H1-H1a pottery assemblage reflects its composite function and living history. Based on the pottery assemblage, H1-H1a might have fulfilled both domestic and possible community functions, suggested by the high amount of personal consumption fine vessels. On the other hand, H5 has a more simple record characterised by the abundance of storage and processing vessels. Therefore, mainly a functional difference might be suggested for the two huts: food processing in H5 and living/community role in H1-H1a.

5 In this synthesis all the sherds, either drawn or not, that could fit a general typological family have been taken into account. Therefore, not only sherds considered for the typology have been counted but also those whose diameter or specific type could not be reconstructed but that fitted the general typology above exposed.

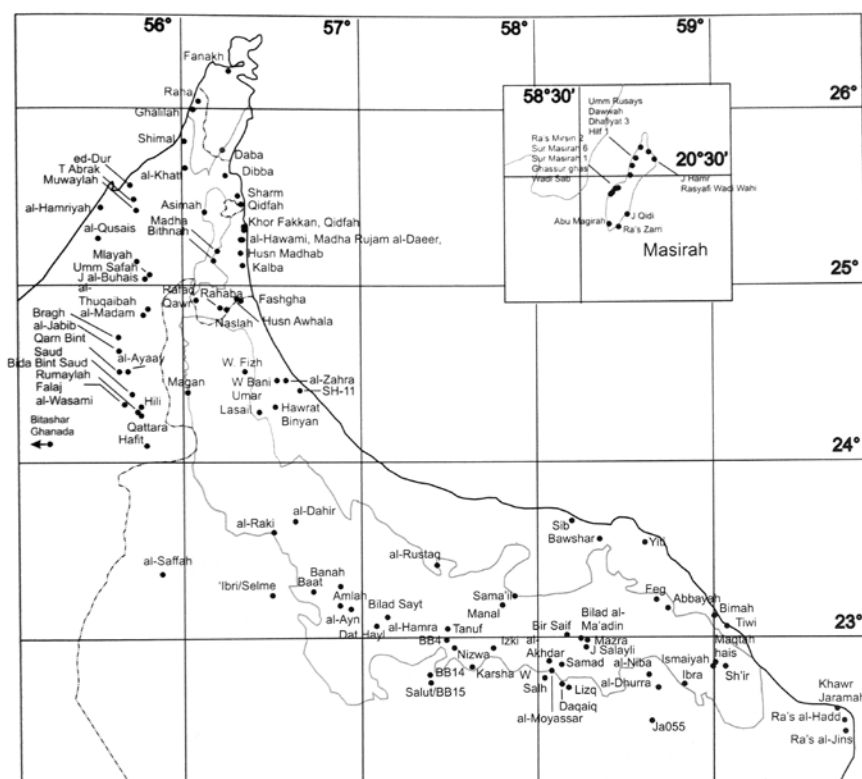


FIGURE 5 Early Iron Age sites in southeastern Arabia (after Yule 2014: 15).

Discussion and Comparisons

H5 and H1-H1a pottery assemblages appear well framed in the ceramic EIA II *koiné* (Magee *et al.* 1998: 236) that characterises southeastern Arabia between the 1100 and 600 BC (Fig. 5). General parallels for the shapes and fabrics can be found with the main contexts of southeastern Arabia attributed to this chronological time span, corresponding to Tell Abraq phase II and Rumeilah period I (Magee 1996a: 242). The main fossils guide of EIA II pottery can be recognized in BMH2 ceramic record (Magee 1996a: 242; Benoist 2001: 48) such as big necked jars (C.1), vertically perforated lugs (Fig. 3.16), storage jars with thickened protruding rims (C.2) and small convex or carinated bowls with or without painted decoration (A).

The main functional and typological categories recognized find a quite perfect correspondence with the major work on Iron Age pottery assemblage defined by Benoist (2001). Taking this work as a model, some inferences can

be made on BMH2 pottery assemblage. Benoist's functional categories could not be perfectly matched since based on the vessel's capacity, a measure not available for BMH2 shapes, mainly attested only in their rims. In any case, on the basis of shape and diameter, bowls (*A* and *B*) might correspond to Benoist's category *bols et coups*; large bowls (*B*) to *bassins*; jars (*C*) to *grandes jarres* and *jarres moyennes*. The distribution of the general categories can be useful to understand the composition of BMH2 pottery assemblage with respect to the main EIA II sites considered in that study. Since the settlement nature of BMH2, the pottery record has been compared with EIA II villages of the piedmont oasis and of the main *wādīs* valleys and with seasonal settlements (*ibid.*: 56–57), no coastal site comparable to BMH2 is there reported for EIA II.

BMH2 pottery assemblage shows a high percentage of closed vessels (84%) that finds an approximate correspondence with the average percentages estimated by Benoist (62–80%). Specifically, the shape mainly attested are without doubt bowls, 75% (50–60% in *wādīs* and piedmont settlements, 50–70% in seasonal settlements), followed by jars 14% (15–25% in *wādīs* and piedmont settlements, 5–20% of small and medium jars in seasonal settlements) and large bowls, 9% (12–20% in *wādīs* and piedmont settlements, 10–30% in seasonal settlements; *ibid.*: 58–60). Therefore, after a first preliminary analysis the ceramic record object of this paper finds a major correspondence with the functional composition of stable piedmont or *wādīs* valley villages, though the percentages might approximately match both records. The main feature that distinguishes BMH2 from seasonal settlements is the attested presence of large storage jars (*C.2* and in some cases *C.3*) completely absent in the former. Moving on to fabrics percentages, studies on the general framework of published pottery assemblages of Oman Peninsula during EIA II pointed out the major presence of coarse and medium/fine ware in settlements area (*e.g.* Tell Abraq phase 2, Rumeilah I, Muweilah, Sharm and Salūt, Building I; Benoist 2001, Iamoni 2009). As shown in Fig. 4, BMH2 pottery assemblage appears to perfectly match this pattern. Among the main wares peculiar of EIA II, BMH2 shows a lack of the so called *céramique grise incisée* that is generally the ceramic copy of contemporary softstone vessels (Benoist 2001: 52) particularly linked to funerary or public context with prestigious features.

From now on, each type attested at BMH2 will be taken into consideration. Carinated bowls appear as the main fossil guide of this period and find wide attestation in the majority of EIA II sites (Yule 2014: fig. 15, Bowls I C12). Comparisons for all the classes recognized (*A.1*, *A.2* and *A.3*) have been found in the Northern area (Magee *et al.* 1998: fig. 3), in sites such as Muweilah (Magee 1996b: fig. 15; Iamoni 2009: fig. 3.5) and in the interior part of Oman,

both in settlements (*e.g.* Lizq Iron age fort,⁶ Maḥleya surface collection [al-Jahwari 2011: fig. 16], Salūt area [Iamoni 2009: fig. 7.4–7; Phillips *et al.* 2012: pl. 2.1; Condoluci *et al.* 2014: fig. 6.62) and in burial grounds (such as Samad ash-Shan⁷ and Maysar [Yule, Weisgerber 1988: 73.26, 74.61]).

The widespread presence of this leitfossil in different EIA II contexts attests a certain homogeneity in the material culture, and maybe even social one, of the southeastern Arabia. A recent archaeometric study (Magee *et al.* 1998) on EIA II fabrics diffusion and production in UAE revealed the low percentages of fine painted pottery recurrence, generally lower than 1%. These general trend does not appear to match BMH2 evidence, where the overall amount of fine ware typical of this kind of production reaches the 6%. Nevertheless, the peculiar characteristics of this ware and the nature of BMH2 settlements suggests a foreign provenience of it. In fact, production centers located outside southeastern Arabia have been proposed for this ware that finds strong comparisons for its decoration and maybe composition with specific Iranian wares (*ibid.*: 242–43).

Bowls appear as one of the most widespread and conspicuous wares in EIA II southeastern Arabian sites, both in settlements and burial contexts, though in higher percentages in the first one (Benoist 2001: 57). With regard to BMH2 type *B*, the main characteristic of these shapes is the contextual presence both of globular rounded rims (*B.2c*) and of flat flaring rims (*B.1a* and *B.2a*) mainly associated with medium wares. Flat, grooved or not, rims appear as the most abundant, whilst simple slightly incurving rim bowls appear less frequent. This aspect can be compared to the so called ‘eastern variant’ proposed by various authors (Potts 1990: 103; Iamoni 2009: 231) to explain some differences between northern U.A.E. and eastern Oman ceramic assemblages. Among the eventual distinguishing features stands out the major presence of globular bowls with incurving walls and rims in northern coastal sites (Muweilah, Tell Abraq phase II and Sharm) whilst result almost absent in southern inner sites (Rumeilah, period I, and Salūt). From this point of view, as far as bowls are concerned, BMH2 pottery assemblage might follow southern inner trends and resemble more Salūt area⁸ and Rumeilah pottery tradition than coastal U.A.E. one. In fact, close comparisons can be find also with the fortified settlements of Lizq where *B.2a* bowls are widely attested among the so called ‘nail-head rim’ bowls (Kroll 2013: 178, fig. 19), often painted, as in the case of fig 3.4.

6 See Kroll (2013: fig. 16.1–11), so called ‘funnel-rim’ bowls.

7 See Yule (1999: fig. 19), painted foot 29 B45 (*ibid.*: fig. 12) painted bowl 49 B-.

8 Phillips *et al.* (2012: pl. 3; pl. 2 n. 5, 6) especially for BMH2 bowl *fig. 3.4* for shape and possible painted decoration; Condoluci *et al.* (2014: fig. 6) bowls.

Taking jars into account, type *C* is equally peculiar of EIA II pottery. Type *C.2* is often named in literature as *pithoi* characterised by considerable measures and capacity (Iamoni 2009: 225, fig. 8). They are devoted to a storage function and therefore mainly attested in settlements.⁹ Necked jars (*C.1*) share the same diffusion pattern (Degli Esposti 2011: pl. VIII.66). A peculiar characteristic of these two BMH2 classes is the lack of the typical incised decoration on the thickened rims or in proximity of it. Only the incised cross decoration on plastic cordons widely attested in EIA II jars and storage vessels (Potts 1990: fig. 117; Iamoni 2009: fig. 1, 5; Condoluci *et al.* 2014: fig. 4.51) appears on many body sherds, though not directly associable to rims. On the contrary, in two cases a painted decoration is preserved on necked jars rims (Fig. 2.16 and Fig. 3.15). A comparable painted and incised decoration is attested only in the site of Lizq, where thickened rimmed and necked jars are associated with different painted decorations (Kroll 2013: fig. 20). Furthermore, Lizq pottery assemblage appears to match all BMH2 jars types for the shapes, lugs and the decoration patterns (*ibid.*: figs. 23, 28). A peculiar painted rim (Fig. 3.18), too poorly preserved to be attributed to a specific type, might find comparisons in some jars from Lizq, that have the same rim's profile with painted decorations, though with slightly different motives (*ibid.*: fig. 25.2–5). The last jar type, *C3*, are less common but equally attested in EIA II contexts (Degli Esposti 2011: pl. VI 34–35).

The scarce conditions of preservation of the spouted vessels, as previously stated, does not allow a proper identification of their features. Therefore, it cannot be confirmed their actual belonging to the bridge-spouted category common in EIA II (Potts 1990: fig. 136.1–3; Iamoni 2009: fig. 1.6; Phillips *et al.* 2012: pl. 4.39, 7.79) that finds strong parallels in Iran (Benoist 2001: 63).

To conclude, BMH2 pottery assemblage appears on the whole to match the main characteristics of EIA II ordinary settlements area. It finds comparisons both with northern coastal sites and with inner sites, especially with the settlement of Lizq. Though a probable seasonal village, BMH2 has a pottery assemblage that suggests a quite pro permanence in time because of the presence of large storage vessels.

9 See Iamoni (2009: figs. 1.19, 8.4, 13, 14), Phillips *et al.* (2012: pl. 5.41, 6.51), Degli Esposti (2011: pl. VII.47), Benoist (2001: 56, 57).

2014–2015 Collected Shells¹⁰

Seashells represent the most abundant data collected from the excavation; their calcareous chemical structure makes them considerably resistant against physical and chemical agents, ensuring their preservation. An accurate collection of individuals and fragments has been carried out both during the excavation and through sifting, thus increasing the chances of gaining malacological samples of small sized exemplars (>3 mm). A database has been created to support the preliminary study of this great assemblage, recording quantitative and informational data.¹¹ There are about 130 identified species belonging to 46 Families, which are in turn associable to three classes of sea molluscs: Gastropods, Scafopodes and Bivalves (Tab. 1a–b). Essential to the approach to the subject and the identification of species along with their ecological characteristics was the specialistic volume by Bosch *et al.* (1995).¹²

Seashell presence on this site testifies more or less identifiable human activities. Shell middens in fact either represent daily waste due to alimentation and fishing accumulated on site, or raw material used by craftsmen mainly for the production of ornamental objects like necklaces or bracelets beads and pendants; nonetheless objects with the main purpose of responding to symbolic and aesthetic needs. Furthermore, we owe to these data the possibility of reconstructing the habitat in which those molluscs lived besides a general idea of the environment and the gathering/collecting methods. The objective we set for this preliminary state of studies is to gain a deeper insight into these pieces of information, with particular regard to alimentation and craftsmanship, in order to reach a better understanding of the life in the village during the Iron Age, and to find either differences or comparisons with Bronze Age phases.

Shell Exploitation: Consumption and Craftsmanship

Gastropods and Bivalves are rich in proteins and mineral salts. Since they are very prolific animals, their presence is always assured, and they provide an

¹⁰ Contribution by Michela Gaudiello and Luisa Terminiello.

¹¹ The first conclusions have been reached thanks to Maurizio Tosi's supervision. More specific studies are to be carried out once a wider assemblage of material from different types of structures present on site (besides huts also shelters, basins and channels) will be available.

¹² The identification of the species is not always sure, given the possible morphological variety among individuals belonging to the same species and the close resemblance among species belonging to the same family/subfamily.

| | FAMILY/ SUB FAMILY | SPECIES | HABITAT |
|--|-----------------------------|--|---|
| B I V A L V E S | Arcidae | <i>Acar plicata</i> | Attached to rocks and coral, lower shore and below |
| | Arcidae - Anadarinae | <i>Anadara antiquata</i> | In muddy sand, intertidal and offshore |
| | Arcidae - Anadarinae | <i>Anadara ehrenbergi</i> | In sand and shell gravel, offshore |
| | Arcidae - Anadarinae | <i>Anadara uropigimelana</i> | In sand, offshore |
| | Arcidae | <i>Barbatia decussata</i> | under rocks, upper shore |
| | Arcidae | <i>Barbatia foliata</i> | Attached to rocks and coral, lower shore – sublittoral |
| | Arcidae | <i>Barbatia perinesa</i> | Strandline only, probably attached to sublittoral rocks |
| | Arcidae | <i>Barbatia setigera</i> | Attached to rocks, lower shore - sublittoral |
| | Arcidae | <i>Barbatia parva</i> | Attached to rocks, lower shore - sublittoral |
| | Arcidae | <i>Scapharca natalensis</i> | In sandy mud and mud in shallow waters |
| | Cardiidae - Trachycardiinae | <i>Acrosterigma n. sp. (a)</i> | In sand, offshore |
| | Cardiidae - Trachycardiinae | <i>Acrosterigma lacunosa</i> | In sand, offshore |
| | Chamoidea (SF) | <i>Chama brassica</i> | Attached to exposed rocks, lower shore. |
| | Chamoidea (SF) | <i>Chama sp.</i> | |
| | Glycymerididae | <i>Glycymeris livida</i> | In clean sand and gravel, shallow water |
| | Glycymerididae | <i>Glycymeris maskatensis</i> | Offshore |
| | Glycymerididae | <i>Glycymeris pectunculus</i> | In mixed sediments, offshore |
| | Lucinidae | <i>Codakia tigrina</i> | In sand, offshore |
| | Lucinidae | <i>Ctena divergens</i> | In sand and gravel, lower shore and below |
| | Mytilidae-Modiolinae | <i>Modiolus auriculatus</i> | In shelly sand in crevices on rocky shores |
| | Modiolinae | | |
| | Ostreidae | | |
| | Pectinidae | <i>Chlamys senatoria</i> | Among rocks, lower shore and below |
| | Pectinidae | <i>Chlamys sp.</i> | |
| | Pteriidae | <i>Pinctada margaritifera</i> | Attached among rocks from lower shore and below |
| | Pteriidae | <i>Pinctada sp.</i> | |
| Spondyliidae | | | |
| Veneridae | <i>Callista florida</i> | In muddy sand and gravel, offshore | |
| Veneridae | <i>Cirrenita callipyga</i> | In sand and sandy mud, mid-tide levels | |
| G A S T R O P O D S | Architectonicidae | <i>Architectonica perspectiva</i> | On sand |
| | Architectonicidae | <i>Architectonica sp.</i> | |
| | Buccinidae-Pisaninae | <i>Engina mendicaria</i> | Under intertidal rocks |
| | Cerithiidae | <i>Cerithium caeruleum</i> | Intertidal under rocks |
| | Cerithiidae | <i>Cerithium columna</i> | Intertidal in sand |
| | Cerithiidae | <i>Cerithium nodulosum adansonii</i> | Intertidal in sand |
| | Cerithiidae | <i>Cerithium scabridum</i> | Subtidal in sand |
| | Columbellidae – Pyreninae | <i>Anachis fauroti</i> | Among intertidal rocks |
| | Columbellidae – Pyreninae | <i>Mitrella albina</i> | Offshore and among intertidal stones |
| | Columbellidae – Pyreninae | <i>Mitrella alizonae</i> | Offshore and beached |
| | Conidae | <i>Conus chaldeus</i> | Offshore and beached |
| | Conidae | <i>Conus ebraeus</i> | Offshore and beached |
| | Conidae | <i>Conus nigropunctatus</i> | Intertidal |
| | Conidae | <i>Conus parvatus sharmiensis</i> | Intertidal among stones |
| | Conidae | <i>Conus taeniatus</i> | Intertidal among rocks |
| | Costellariidae | <i>Costellaria Helena</i> | Intertidal and beached. MAS |
| | Costellariidae | <i>Costellaria sp.</i> | |
| | Costellariidae | <i>Pusia sp.</i> | |
| | Cypraeidae | <i>Cypraea clandestina</i> | Under rocks and in rock crevices. MAS, SO |

| | | | |
|--|----------------------------|--|---|
| G A S T R O P I C S | Cypraeidae | <i>Cypraea grayana</i> | Intertidal under rocks, rock ledges and in crevices |
| | Cypraeidae | <i>Cypraea marginalis pseudozellata</i> | Among stones |
| | Cypraeidae | <i>Cypraea sp.</i> | |
| | Diodorinae | | |
| | Fissurellidae | <i>Medusafissurella salebrosa</i> | Intertidal among rocks and stones |
| | Lottidae - Patelloidinae | <i>Patelloida profunda</i> | On rocks and other objects, often above high-tide level |
| | Littorinidae | <i>Littoraria (Littoraria) glabrata</i> | Rocks at high-tide mark |
| | Mitridae | <i>Strigatella litterata</i> | Intertidal under rocks and coral |
| | Modulidae | <i>Modulus tectum</i> | Offshore in sand |
| | Muricidae - Ergalataxine | <i>Cronia cf konkanensis</i> | Rocky places exposed at low tide |
| | Muricidae - Ergalataxine | <i>Cronia cf margariticola</i> | Under intertidal rocks |
| | Muricidae - Thaidinae | <i>Morula granulata</i> | Under intertidal rocks, often in unsheltered places |
| | Muricidae - Thaidinae | <i>Thais bimaculata</i> | On sheltered side of rocks |
| | Muricidae - Thaidinae | <i>Thais savignyi</i> | Under intertidal rocks |
| | Muricidae - Thaidinae | <i>Thais (Mancinella) alouina</i> | On exposed rocks |
| | Nassariidae | <i>Nassarius (Nassarius) arcularia plicatus</i> | In sand intertidally |
| | Nassariidae | <i>Nassarius (Niotha) jactabundus</i> | Shallow water |
| | Nassariidae | <i>Nassarius (Plicarularia) persicus</i> | Intertidal muddy sand |
| | Nassariidae | <i>Nassarius (Zeuxis) pseudoconcinus</i> | Offshore to deep water |
| | Nassariidae | <i>Nassarius (Niotha) splendidulus</i> | Offshore and intertidal |
| | Nassariidae | <i>Nassarius sp.</i> | |
| | Naticidae - Polinicinae | <i>Policines mammilla</i> | In sand |
| | Neritidae | <i>Nerita albicilla</i> | Intertidal on rocks |
| | Neritidae | <i>Nerita debilis</i> | Intertidal on rocks |
| | Neritidae | <i>Nerita longii</i> | Intertidal on rocks |
| | Olividae | <i>Oliva bulbosa</i> | Intertidal and offshore in sand |
| | Olividae - Ancillinae | <i>Ancilla (Sparella) castanea</i> | Intertidal in sand |
| | Patellidae - Nacellinae | <i>Cellana rota</i> | Intertidal rocks |
| | Planaxidae | <i>Planaxis sulcatus</i> | Intertidal on mud and rocks |
| | Ranellidae | <i>Gyrineum (Gyrineum) natator</i> | Offshore and on intertidal rocks |
| | Ranellidae | <i>Gyrineum (Gyrineum) pusillum</i> | Near coral areas and beached |
| | Siphonariidae | | |
| | Strombidae | | |
| | Strombidae | <i>Lambis truncata sebae</i> | On sand near rocks and coral |
| | Strombidae | <i>Strombus (Gibberulus) gibberulus gibberulus</i> | In sand |
| | Strombidae | <i>Strombus (Canarium) mutabilis mutabilis</i> | In sand among rocks |
| | Strombidae | <i>Strombus (Canarium) urceus urceus</i> | Offshore and beached |
| | Strombidae | <i>Strombus (Tricornis) oldi</i> | In sand offshore and beached. MAS |
| | Terebridae | <i>Duplicaria duplicata</i> | Intertidal in sand |
| | Terebridae | <i>Impages hectica</i> | Intertidal in sand |
| | Terebridae | <i>Terebra babylonica</i> | Offshore and intertidal |
| | Trochidae | | |
| Turbinidae | <i>Lunella coronata</i> | Intertidal on rocks | |
| Turbinidae | <i>Turbo radiatus</i> | Intertidal on rocks | |
| Turritellidae | <i>Turritella maculata</i> | Intertidal | |
| Turritellidae | | | |
| SCA PO PHODS | Dentalidae | <i>Dentalium octangulatum</i> | Intertidal and offshore in sand |
| | Dentalidae | | |

TABB. 1A-B The majority of the species so far recognised in BMH2, indicating their Class, Family/Sub-family, ecological habitat.

important, highly nutritional alimentary source. Bivalves are basically all edible. The most largely consumed molluscs are those belonging to Chamoidea superfamily, followed by those from Ostreidae family.¹³ Both categories live attached to rocky substrate in lower and mid-shore, cemented by their right valve. The heavy exploitation of the species *Chama brassica* e *Chama* sp. seems to be unique, if compared to the most known prehistoric omanite coastal sites (Ra's al Jins, Ra's al Hadd, Ra's al Hamra, Suwayh), in which Ostreidae and Mytilidae families prevailed. Probably *Chama* sp. and Ostreidae molluscs were mostly collected together with *Barbatia* sp. shells, given that their habitat is basically the same. The other two most spread species of bivalves which both live offshore are *Glycymeris maskatensis* and *Anadara uropigelama*. Collecting these molluscs did not have consumption as sole purpose, but also to produce tools and jewellery.¹⁴

Gastropods' role in relation to alimentation is less clear, given the large amount of little species probably mainly used as baits. For sure, some species like *Conus*, which is poisonous for humans, were only collected for their aesthetical value or craftsmanship. What's more, signs of natural erosion on shells of different species suggest that many of them were collected when already beached, with no interest for the mollusc. Probably, molluscs belonging to Stromboidea Superfamily, or even the bigger ones in Muricidae family (like Thaidinae) were fished in great quantities for consumption.¹⁵ As it is well known, the *Lambis truncata sebae*, the biggest gastropods in Eastern Arabia, was considered a luxury food in Indo-pacific and Gulf areas (Tosi, Biscione 1981: 32). It is among the most attested species on site, especially in relation to surface collections. This large shell (up to 350 mm) in fact was clearly used as construction material in walls.

In Near and Middle East Bronze Age sites the following species are widely attested to obtain jewels and ornamental items (they appear in order according to quantities in BMH2): *Conus* sp., *Oliva bulbosa*, *Cypraea* sp., *Anadara* sp., *Engina mendicaria*, *Pinctada margaritifera*, *Policines mammilla* and Dentalidae. Nevertheless, although their presence is well attested, in BMH2 we don't have traces of processed *E. mendicaria* shells, nor do we find objects obtained from *P. margaritifera*'s valve. Exception being made for some species of *Conus*, they

13 Species of these families are easily confused.

14 In BHM2 are surely attested only pendants of *Anadara* sp. European examples of pendants obtained from worked valves of *G. maskatensis* are described in Borrello (2004: 19–42). Often they were used also as pigments containers, common in Ra's al Jins (Lazzari 2003: 36).

15 Well known as food resources in Ra's al Jins 2 (Martin, Cleuziou 2003: 40).

all are small enough to be used, with small adjustments, as necklace beads. Perforation was obtained using a pointed instrument, like those numerous bronze items found in H₅ and H₁-H_{1a}. In some cases, though, the holes are due to beaching or to other predator molluscs. Fissurellidae stand aside, as they are naturally holed. Given their ellipsoidal shape with a central hole sometimes slightly shifted towards the upper part, they make perfect beads or pendants, and they also can easily be found among the rocks in intertidal zone. *Dentalium* shells, thanks to their holed shape extended in length were similarly devoted to the same purpose.¹⁶ The mollusc inside them lives half-buried in sand and mud in the intertidal zone, from shallow waters to greater depths. It is likely that the shell was collected when already beached. Other shells (like *Conus* sp. and other gastropods) were instead sawed: their apexes was sectioned perpendicularly to their axis to obtain discoidal and little truncated cone beads or transversally cut from one side to the top in order to obtain more or less triangular pendants.

Fishing and collecting these species must have been specialized activities. Although in fact it is possible to collect a great number of beached shells, systematic production of beads requires a greater effort, especially for bigger exemplars. Shells belonging to Conidae live in intertidal areas, either on cliffs or buried in the sand, in waters up to 30 m deep. *Conus ebraeus*, well represented in Bimah, is the most attested species in settlements (Tosi, Biscione 1981: 26), and was used as necklace bead. A similar habitat—intertidal zone or offshore sands—is typical for *Oliva bulbosa*. This shell shows a smooth, shiny surface, similar to china ware, characterised by neutral background colours and very variegated ‘decorations’.

Stage 1: Bronze Age

H₁-H_{1a}. A small picture of H₁ hut during Bronze Age (level 11) was acquired through the sounding in L1. Malacological remains are scarce, although this could be of little relevance given the small size of the excavated area, and its only partial sifting. Among bivalves, individuals of species *Chama* sp., *Glycymeris* sp., *Pinctada margaritifera*, and also one sample of *Ostrea* sp. are attested; among gastropods: one shell of *Conus ebraeus* and some others of *Oliva bulbosa*, *Cypraea*, *Policines mammilla*, *Cellana rota*, *Nerita longii* and *Strombus (Gibberulus) gibberulus gibberulus*. Therefore species used for alimentation and craftsmanship (and perhaps baits?) are represented. Most of

¹⁶ Many *Dentalium* were found, for example, in BJD-1 site, near al-Haddah (Charpentier *et al.* 1997: 105–6, fig. 5), from goods in RJ-6 graves (Santini 1988: 33–34) and in grave 803 in Maysar (Yule, Weisgerber 1988: 48–53, 73).

these species were easily harvested from the coast overlooking the site, in the intertidal areas, sometimes using specific tools to detach bivalves and limpets (*C. rota*) from the rocks. The presence of the *C. ebraeus*, *O. bulbosa* and *Cypraea* sp. can testify specialized and especially targeted collecting activities. The *P. mammilla*'s sample presents a lateral hole which could confirm its usage as a pendant or a necklace bead. The ethereal beauty of this small shell commonly nicknamed 'milky moon snail' has impressed ancient people's imagination and has become part of Bronze Age aesthetic taste.¹⁷ Other necklace beads are made up by one *O. bulbosa* and one small entire shell of *Conus* sp. The presence of *Nerita longii* could be linked to the usage of its mollusc as bait for fishing.

H5. The picture of the most ancient occupational phase of BMH2 yielded by H5 sounding is richer. The presence of a relatively large number of shells belonging to Ostreidae family, followed by *Chama* sp., *Glycymeris* sp, Arcidae and other bivalves, besides several Thaidinae and one *Cellana Rota* testifies activities connected to food consumption. The finding of numerous shells of *Nerita longii* could be due to the usage of its mollusc as bait for fishing. These animals live on exposed rocks in intertidal zone, very easy to collect in large quantities and ideal as baits. Nevertheless they are attested in Nubian contexts with a lateral hole used as beads for bracelets, ankle laces or as ornamental elements for accessories. Scepticism about their usage as part of jewels comes from the fact that in BMH2 they are mostly found in fragments. It might be inferred that molluscs belonging to Eragalataxinae subfamily or the small Thaidinae (*Morula granulata*), which live underneath the rocks in the intertidal zone, were used as baits as well.

Traces of local craftsmanship are given by the presence of some half-processed necklace beads and pendants obtained from *Conus* shells, one bead in *Oliva bulbosa* and two perforated valves of *Anadara* sp.

Other shells found on site like *Cypraea* sp. (most numerous), *Lunella coronata* (of which are also present, possibly, some opercula), *Littoria littoria*, *Modulus tectum* and some items of *Trochus (Infundibulops) erithreus* and *Turritella maculata* pieces do not suggest any peculiar function connected to them (only *Modulus tectum* and *Cypraea* sp. could indicate specialized fishing offshore). Perhaps aesthetic and symbolic importance characterizing cowries could be extended also to all other shells distinguished by peculiar colors or by their madreperlacious nature.

17 Some examples of this shell are showed in Tosi, Biscione (1981).

Stage 2: Iron Age, H1-H1a Pre-hut Period

The malacological findings collected in the Iron Age pre-hut levels draw the picture of a gradual development and increase in life at BMH2 resulting in the subsequent building of the village. Level 10 appears similar to Level 11, though with an even lower amount of findings. Among bivalves the most recurrent species (with only 4 samples) is *Chama* sp., followed by one *Glycymeris maskatensis*, one *Barbatia decussata*, one *Circenita callipyga*, one sample of Spondylidae family and one *Codakia tigrina*. The occurrence of the latter and of the *G. maskatensis* beyond the tidal area might suggest specialized underwater gathering activities. Among the gastropods, only small species characterized by a fascinating appearance were collected—*Planaxis sulcatus*, *Strombus (Canarium) mutabilis mutabilis*, *Turbo radiatus*, *Gyrineum (Gyrineum) natator*—and one *C. rota*. Only one ornament has been found: a bead made of a whole *Conus striatellus*. In level 9, the *corpus* yielded by the sounding is richer. Bivalve shells appear in higher percentage than gastropods, thus confirming their identification as food waste. *Chama* sp. remains are conspicuous, followed by the oysters, by *G. maskatensis*, Arcinae (especially *Barbatia setigera*), *Anadara uropigelama* and *Pinctada margaritifera*. The occurrence of *Modiolus auriculatus* and of other samples of Mytilidae rare in BMH2 record should be noted.¹⁸ Furthermore, four mollusc valves occur, they belong respectively to Veneridae family (among which the quite recurrent *Circenita callipyga*) and Lucinidae (among which *Codakia tigrina*). Selective molluscs fishing and gathering activities are, therefore, attested. Among gastropods, in level 9 all the species habitually gathered in all the levels of both huts occur, in addition to the species attested in level 10 and 11. The most recurrent shells belong to Cerithiinae, Cypraeidae and to *Mitrella albina*, *Engina mendicaria*. The first ones have an elongated shape (long-spined shells), whilst the seconds have vivid or contrasting colours such as the *E. mendicaria*, black and yellow. An aesthetic appeal of this shiny, coloured and artistically (or evocatively) shaped items might be suggested, such as gastropod shells (or even the *P. margaritifera* with its outstanding pearly interior). Therefore, an aesthetic but also symbolic value might be suggested. The occurrence of cowries is richer and more varied: *Cypraea marginalis pseudocellata*, *Cypraea clandestina*,¹⁹ *Cypraea grayana* (one of the larger cowries of Eastern Arabia) are among the recognized species.

18 They live in dense groups attached to rocks of the mesolitoral zone or partly buried in soft mixed sediments with their byssus threads attached to some sediment particles. Future detailed studies might better explain the low presence of mussels in BMH2 record.

19 According to Bosch *et al.* (1995: 73) it is distributed from Masirah Island to the southern Oman coast.

In this level traces of a more developed craftsmanship production are clear. The distinction among different kind of ornaments stands out: sixteen small beads made of sectioned *Conus* sp. (or other gastropods) apical parts; two possible pendants; necklace beads made of whole shells (twelve *Oliva bulbosa*, three *Conus* sp., one *C. chaldeus*); eight medium almost disc-shaped beads (one of *C. chaldeus*²⁰ still at a manufacturing stage). Several samples are unfinished possibly as still in their manufacturing process or as waste. Pendants made of *Anadara* sp. valve also occur, together with two small plates, one rectangular and the other triangular. Their use is still uncertain since they lack any perforation.

Malacological remains from the pre-hut level 3 confirm the gradual increase in the human use of the site and of the consequent activities carried out. A peak in the bivalves consumption is recorded. The percentage of the most recurrent species is almost quadrupled with regard to the previous level (*Cha-ma* sp., Ostreidae, *G. maskatensis*, *A. uropigelama*). The overall percentage of other bivalves is otherwise reduced. This suggests a more specifically targeted gathering of the malacofauna for alimentary purposes in this period. Gastro-pods shells display a greater variation. Several Nassarinae species and Archi-tectonicidae samples recur. The most widespread species are still *Conus* sp. and *Oliva bulbosa* followed by *Engina mendicaria*, *Cypraea* sp., *Nerita longii*, *Lunella coronata* and *Turbo radiatus* (with seventeen opercula attested), *Anachis fauroti*, *Strigatella litterata*, *Mitrella albina*, *Strombus (Canarium) mutabilis mutabilis*. The craftsmanship activity is fully operating in this level. About two thousands items among beads and pendants have been found (made of *Conus* sp. and other gastropods), varying in dimensions and features and characterized by different manufacturing stages; eighty *Oliva bulbosa* beads; five *C. ebraeus* beads and three *C. chaldeus*; seven *Anadara* pendants; twelve Fissurellidae shells; one perforated *Cypraea* sp.; one semicircular disk (30 mm diameter); one *Architectonica* sp. bead (the first attestation of this kind in BHM2 corpus).

This production was certainly meant for trade exchange,²¹ ensuring the *Ichthyophagoi* community enough wealth to build a complex village.

20 The majority of the beads presently have a whitish appearance, probably caused by the loss of the original colours and patterns that exalted their aesthetic value. The unfinished *Conus chaldeus* bead still preserves its natural colours and represent a rare example of the vivacity and beauty proper of this items.

21 Shells from the northern Omani coast and shells beads are reported in settlement and funeral contexts of Iron Age, in the area of Eastern Hajar Mountains, like the sites of Manal (Elmahi, Ibrahim 2003: 94–95, fig. 20), Mahleya (al-Jahwari 2007: 93–94, fig. 29),

Phase 3: Iron Age Village

H1-H1a. L1 life deposit yielded several shell remains. Food waste occurrence appears lower than in the pre-hut level 3, nevertheless, the most exploited species are attested together with a wider range of bivalves than in the previous level (Veneridae, *Acrosterigma* sp., Lucinidae, Carditoidea superfamily, Spondylidae, many different Arcinae species). There is an high variety of gastropods with peaks of *Oliva bulbosa* and *Conus* sp., probable craftsmanship raw material. The occurrence of *E. mendicaria* (with forty-nine samples) and of cowries (mainly *C. marginalis pseudocellata*, followed by *C. grayana* and *C. clandestina*) is remarkable. Moreover, quite a high amount of the majority of the 'minor' species attested within all the levels is recorded (the occurrence of fourteen samples of *Strombus (Canarium) mutabilis mutabilis* and of seven *Planaxis sulcatus* is peculiar since it might point out not a random but a specific gathering). The high amount of shell items found reveals the fruitful craftsmanship activity: eleven Fissurellidae beads; three worked *Conus* sp. walls (large pendants not pierced yet or possible tools?); over one hundred little beads and bigger beads, some with large and well-finished holes, others still at a manufacturing stage; thirty pendants; sixty-eight beads made of *O. bulbosa*, four of *C. ebraeu* and six of *Conus* sp (four of which with a side hole); one *Anadara* pendant. Likewise food related activities, craftsmanship evidences appear lower than in the more intense pre-hut period. A possible decrease in craft production might be related to a diversification and increase of different productive activities.

Malacological evidences from *Locus 3* are relatively scarce (the space narrowness should be considered). Possible remains of meals consuming, perhaps an occasional activity, are concentrated in the intermediate life level with the main consumption of *Chama* sp, Ostreidae and *Anadara* sp. molluscs. Traces of craft activities might occur given the recurrence of raw materials and worked items: seven *Fissurellidae* shells; eleven *O. bulbosa* beads; thirteen beads (one of which unfinished); two pendants; one *Anadara* pendant. The concentration of gastropods is low on average, with peak of *Cerithium caeruleum*; Nassarinae, *Morula granulata*, *S. mutabilis* and *E. mendicaria* (with only three individuals) also occur in several samples.

Within *Locus 4* the malacological remains of the main H1-H1a life level highlights craftsmanship evidences similar to *Locus 3*, with fourteen *O. bulbosa* beads, one *Anadara*, three *Conus* sp. pendants, seventeen necklace beads at

Samad/Maysar (Yule, Weisgerber 1988), and in the nearer site of *wādī Tīwī* (Korn 2004: 15–16). Elmahli argues that mollusc shells may have formed part of the inland oasis settlers diet.

different working stages. Bivalves remains show a similar situation to *Locus 1*, though in slightly lesser amounts for the main species and with less variety.

The most superficial levels yielded a scarce malacological record not suggesting any particular activity (except for the above mentioned use of the *Lambis*). An exception is the south-eastern side of H1-H1a outer area (sounding 5). It yielded a remarkable concentration of *Conus* sp. shells together with few other species.

H5. The malacological record of the main frequentation levels (5–6) inside H5 is characterised by the outstanding occurrence of *N. longii* and *N. albicilla*. They might be connected to fishing activities as the numerous *M. granulata* and Ergalataxinae shells does. Among the other species of gastropods the most abundant are: *E. mendicaria*, *Lunella coronata*, several samples of big undetermined gastropods, *Cypraea* sp., Cerithiinae, *Planaxis sulcatus*.²² In this hut probably the production of shell ornaments goes along with fish processing. About twenty-five *Conus* sp. and fifteen *O. bulbosa* have been found, probably as raw materials, together with about thirty worked beads, seven semi-finished *Conus* sp. beads, two pendants (and three Fissurellidae). The possible food consumption function inside the hut might be, at least occasionally, confirmed by the relatively high occurrence of bivalves. *Chama* sp. molluscs are confirmed as the most used along with Anadarinae, Ostreidae and Glycymerididae.

Concerning the outside of the hut, in the same time span, bivalves remains are less attested. On the contrary, the exceptional amount of Neritinae is confirmed (some are characterised by impressive dimensions) together with Ergalataxinae and *Morula granulata*. Many samples of *Conus* sp., cowries, *E. mendicaria*, *L. coronata*, Naticidae, Nassirinae, Trochidae and many fragments of large Thaidinae occur. The latter might be further food waste in addition to bivalves. Probable craft activities are also attested on the outside. Among worked items we have found about thirty common beads and two peculiar beads, probably made by cutting a small gastropod and using its opening as hole, one rare necklace *Architectonica* sp. bead (already attested in the H1 pre-hut level), one whole *Conus* sp. bead (eighteen Fissurellidae).

The remaining malacological *corpus* from H5 related to the most superficial levels suggests a certain continuity also in subsequent periods. Food waste decreases inside the hut, whilst increasing outside. The occurrence of personal ornaments is confirmed: six Fissurellidae, thirty-one beads varying in dimensions and quality (some still unfinished) and five *O. bulbosa* beads.

22 Among the gastropods not cited in this paper, *Tutufa (Tutafella) nigrita* should be reported since it only occurs in this level.

To conclude, the main difference emerging from the malacological *corpus* of the two huts is the lower occurrence of food waste in H5 than in H1-H1a. Probably, the latter was characterised by conviviality moments, perhaps linked to the community function of the structure. Small or large craftsmanship workshops for the production of ornaments might have been set almost everywhere. Moreover in the H5 hut the high quantity of shells from Neritinae, Ergalataxinae and Thaidinae subfamily may be related to fish processing happening here, hinting their use maybe as fishing baits.

Notes on the Collected Lithic²³

After 2013–2015 activities, the collected lithic tools, both from surface and excavation, demonstrate the strong occupation of the *wādī* Bimah area during the prehistory. Moreover, the investigation of the transitional period between the Bronze Age and the Iron Age it is now a major topic, mostly in light of a future excavation of the Bronze Age tower located just a few meters north of the main village compound.

The surface collection in the archaeological area between Bimah and Tīwī returned different kinds of raw materials and flint typology. First macroscopic observations based on color and texture were performed; microscopic analysis will be carried out in the future to better understand the nature of the raw material.

From the *wādī* Bimah area a large amount of small flint pebbles emerged (some of them chipped). Larger nodules must have been collected anciently along the courses of the nearby *wādīs*, *i.e.* *wādī* Fins inner course, where a lot of large flint nodules were detected during 2015 season.

Approaching to BMH2, the lithic has been collected following the distinction of two sectors: Sector A, the BMH2 huts, and sector B, the Bronze Age tower. These materials were preliminarily analysed by a typological study aimed to elaborate the relative frequencies of certain features and, moreover, to facilitate comparisons and technological studies (Arzarello *et al.* 2015). A first definition was made by separating the undeterminable artifacts from the determinable or oriented ones. Then, the preliminary study was made following a descriptive and statistic approach by the implementation of a database and an autoptical analysis of the material, based on the morphotechnics and morphometrics features. The Iron Age period is mostly characterized by

²³ Contribution by Valentina Cozzolino.

undeterminable fragments and more rare generic flakes, recycled flakes and cores. The presence of most recent detachments on the flakes suggests that, probably, the abandoned Bronze Age flakes were collected and re-used. Bronze Age tower T1 presents, along with indeterminable fragments, a greater number of big flakes (unipolar flakes, convergent flakes and partial cortex flakes) as well as a better raw material compared to that found in the Iron Age level. The only blank with denticulate retouch was found in BMH2 Bronze Age tower T1 and it seems to present a different raw material than the others.

Coming to 2015 excavation, in the H1-H1a hut, both EIA and Bronze Age stone tools were collected. The Iron Age flint presents a majority of undeterminable fragments. Among the defined products: partial cortex flakes; unretouched flakes; recycled flakes; one initially struck core; one rounded core; one cortical flake; one chipped flint pebble with fracturing which appears to be produced by heat stress; one ogival scraper and one end-scraper. In general the generic flakes are smaller than the Bronze Age level ones. Interesting correspondence can be seen with other coastal settlements: first of all Ra's al-Hadd 96. In this case small flint pebbles (which, however, are covered by a dark cortex unlike those of BMH2 that are covered by white-grey cortex) emerged; no laminar production but only a simple flaking process; partial cortex flakes; initially struck pebbles and cores (Usai 2000: 1–2). Also in Ra's al-Hamra 5 one correspondence with BMH2 can be detected in one end-scraper (Maggi *et al.* 1990: 19). Iron Age levels of H1-H1a were also characterized by a lot of debris, chipping errors (like reflected flakes) and signs of abandonment and reusing, which confirm the opportunistic use of the flint during the Iron Age.

The Bronze age artifacts emerged from level 11 in L1. This level reveals, together with some undeterminable fragments, an increase of the flint's record. Among them one retouched flake, partial cortex flakes, one unretouched flake and one drill. The use of better raw material and the production of flakes is similar to those found in the surface collection of BMH2 Bronze age tower T1. It should be noted a production that appears less coarse if compared to the Iron age flint. In general, during the metal age there are two kinds of production: specifically planned production with a low quantity of debris defined 'curated technology' and an opportunistic production with a lot of debris and very simple flaking process (Usai 2000: 6–7). In the H1-H1a hut the second case occurred. The Iron Age flint suggests the end of the flint's utilization like main raw material for the productions of tools, especially for its very low presence in each level. The Bronze Age production is a tradition that disappeared over time, probably due to a more frequent use of other metals and for the consequently different function of flint during the Iron Age when also other social and economic factors played primary roles (Rosen 1996: 129).



PLATE IVA *A collection of Oliva bulbosa.*



PLATE IVB *Processed shell beads.*

In conclusion, BMH2 Iron Age flint seems to be used opportunistically, by recycling fragments already available, thanks to the large presence of raw material along the *wādī*. It is possible that the flint was used for working on site: maybe to cut and scale the fish, simple activities that did not require specialized tools.

Therefore, we still have to remember that BMH2 seems to be a seasonal camp (Loreto 2015) so we can see only a little part of the lithic production (the tools may have been taken elsewhere); the inland flint production should also be used in order to have a global view of the lithic production and to favor a technological study. M. Tosi already stated how the distribution of resources in northern Oman is not at all homogeneous, interchanges with other regions possessing complementary resources ensured the survival of the populations (Tosi 1975: 205).

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