

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/322719577>

# Newly Discovered Bronze Age Archaeological Sites on Qeshm Island, Iran

Article in Iran · July 2017

DOI: 10.1080/05786967.2017.1355533

CITATIONS

3

READS

934

3 authors:



**Alireza Khosrowzadeh**  
Shahrekord University

27 PUBLICATIONS 98 CITATIONS

[SEE PROFILE](#)



**Abolfazl Aali**  
Archaeological Museum of Zanjan, Iran

24 PUBLICATIONS 303 CITATIONS

[SEE PROFILE](#)



**Lloyd Richard Weeks**  
University of New England (Australia)

81 PUBLICATIONS 790 CITATIONS

[SEE PROFILE](#)



# Iran

Journal of the British Institute of Persian Studies

ISSN: 0578-6967 (Print) 2396-9202 (Online) Journal homepage: <http://www.tandfonline.com/loi/rirn20>

## Newly Discovered Bronze Age Archaeological Sites on Qeshm Island, Iran

Alireza Khosrowzadeh, Abolfazl Aali & Lloyd Weeks

To cite this article: Alireza Khosrowzadeh, Abolfazl Aali & Lloyd Weeks (2017) Newly Discovered Bronze Age Archaeological Sites on Qeshm Island, Iran, Iran, 55:2, 120-142

To link to this article: <http://dx.doi.org/10.1080/05786967.2017.1355533>



Published online: 02 Oct 2017.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)

Full Terms & Conditions of access and use can be found at  
<http://www.tandfonline.com/action/journalInformation?journalCode=rirn20>

## Newly Discovered Bronze Age Archaeological Sites on Qeshm Island, Iran

Alireza Khosrowzadeh<sup>a</sup>, Abolfazl Aali<sup>b</sup> and Lloyd Weeks<sup>c</sup>

<sup>a</sup>Department of Archaeology, Faculty of Humanities, Shahrekord University, Shahrekord, Iran; <sup>b</sup>Archaeological Museum of Zanjan, Zanjan, Iran;

<sup>c</sup>School of Humanities, University of New England, Armidale, NSW, Australia

### ABSTRACT

Archaeological surveys of Qeshm Island conducted in 2006 and 2012 have identified a total of 191 archaeological sites dating from prehistoric to late Islamic times and provided new insights into the ancient settlement of the island. Among the identified sites, seven (three settlements and four cemeteries) can be attributed to the Bronze Age, representing the first archaeological sites from this period to have been identified on the Iranian islands of the Persian Gulf. Although only a preliminary reconstruction of the social and economic aspects of the third-millennium BC settlement of Qeshm Island is possible from these two seasons of survey, it appears that communities practised both agricultural production and the exploitation of marine resources. Material remains collected during surface survey indicate cultural, economic and technological connections between the Bronze Age inhabitants of Qeshm Island and neighbouring communities in south-eastern Iran and south-eastern Arabia.

### KEYWORDS

Persian Gulf; Umm an-Nar period; third-millennium BC; settlement; cemeteries

### 1. Introduction

Historical documents and archaeological excavations provide abundant evidence for thriving long-distance maritime exchange networks that linked the Bronze Age societies of the greater Persian Gulf region – Mesopotamia, Iran and eastern Arabia – with each other and with areas further afield such as the Indus Valley. The cultural connections and exchange systems that can be reconstructed for this period, however, inevitably reflect the inconsistencies and unevenness of archaeological research across this large area. Most significantly, the Bronze Age archaeology of the northern/Iranian coast of the Persian Gulf is much less well known than that of the southern/Arabian coast and hinterlands<sup>1</sup> and the prehistoric archaeology of the Iranian islands in the Persian Gulf is even less well researched than that of the neighbouring coast. This paper describes the first recorded Bronze Age settlements and funerary structures for the Iranian islands of the Persian Gulf, identified during archaeological surveys of Qeshm Island in 2006 and 2012 that also provided abundant evidence for occupation in later periods. Surface finds indicate that the Bronze Age inhabitants of Qeshm participated in cultural and economic networks that linked the island

with sites and areas on the northern and southern sides of the Persian Gulf in the third-millennium BC.

### 2. Previous Research

Archaeological sites were recorded on the Iranian coast of the Persian Gulf from the early twentieth century, when excavations at the site of Tol-e Peytul (ancient Liyan) on the Bushehr peninsula revealed significant evidence for Bronze Age occupation in that location.<sup>2</sup> Subsequently, an opportunistic and discontinuous survey of the coastal region between Minab and the Bushehr peninsula was undertaken by Stein.<sup>3</sup> More intensive archaeological field survey of the coastal regions by Western and Iranian scholars began in earnest only in the late 1960s. Williamson and Prickett undertook exploratory survey into the early 1970s over a very broad area of the coast between Bandar-e Kangan north of Siraf and the eastern Straits of Hormuz near Bandar-e Jask, and also on the Bushehr peninsula.<sup>4</sup> Beginning at approximately the same time and continuing until 1977, Babak-Rad, Shamlou, Yasi and Bakhtiari directed extensive surveys of Hormuzgan province, including not only the mainland areas of Bandar-e Abbas and Minab, but also Hormuz and Qeshm Islands.<sup>5</sup> When considered

**CONTACT** Alireza Khosrowzadeh ✉ [khosrozadeh.alireza@lit.sku.ac.ir](mailto:khosrozadeh.alireza@lit.sku.ac.ir) Department of Archaeology, Faculty of Humanities, Shahrekord University, Rahbar Bolvar, 5648456 Shahrekord, Iran

<sup>1</sup>E.g. Potts, "Trends and Patterns."

<sup>2</sup>Pézarid, *Mission à Bender-Bouchir*; Potts, "Trends and Patterns."

<sup>3</sup>Stein, "Archaeological Reconnaissances in Southern Persia"; *Archaeological Reconnaissances in North-western India*.

<sup>4</sup>Prickett, "Man, Land and Water," Appendix IIB; Priestman, "Settlement & Ceramics," figs. 2, 3.

<sup>5</sup>Shamlou, "Excavation Around Minab Port"; Yasi, "Archaeological Survey."

together, these surveys provided very little evidence for prehistoric (i.e. Bronze Age and earlier) occupation of the Iranian coast. Stein,<sup>6</sup> for example, noted that “nowhere about Minab or, I may state at once, anywhere else [westward] along the 600 odd miles we covered along or close to the Persian Gulf coast, did I come upon remains which could be ascribed to prehistoric times”. Likewise, although much of the material collected by Williamson and Prickett remains under-studied, they identified only a very small number of coastal sites dating to earlier than the mid-first millennium BC.<sup>7</sup>

Since that time, more survey has been undertaken along the Iranian coast of the Gulf, including in the hinterlands of Bushehr and of Nayband. Carter et al.<sup>8</sup> recorded a range of Chalcolithic to Bronze Age sites, generally towards the back of the Bushehr hinterland, close to the mountains. Askari-Chaverdi et al.<sup>9</sup> recorded several fifth-millennium BC sites (some already noted by Stein), not on the immediate coastal plains around Nayband, but in the Galehdar Valley and Gavbandi regions behind the first mountain ridges adjacent to the coast. Several authors<sup>10</sup> have noted the greater agricultural potential of these inland valleys and suggested that the dearth of settlement immediately on the Iranian coast may reflect a preference for settlements to be located behind the coastal ranges.

Scarce recent systematic survey has been undertaken further to the south, in the mainland coastal area from Bandar-e Lengeh to the eastern side of the Straits of Hormuz (Figure 1). The prehistoric occupation of this area is, consequently, poorly understood. A 10-day systematic survey of parts of Minab County undertaken in 2005 by a joint ICAR–Durham University team identified several new archaeological sites in addition to Williamson’s and Prickett’s earlier discoveries, a few of which produced Bronze Age material.<sup>11</sup>

Regarding the archaeological record of the Iranian islands, Stein<sup>12</sup> noted only the Portuguese period remains and iron oxide mines on the “barren rock” of Hormuz Island, and on heading westwards from Bandar Abbas, observed that, “no old remains were to be found

along the narrow coastal belt; nor could I learn of any on the long stretched island of Qishm within sight across the narrow waters of the Clarence Strait which the route was skirting.” During two seasons of surface survey, however, Babak-Rad<sup>13</sup> recorded 76 archaeological sites on Qeshm Island dating from the Sasanian to the Qajar periods. Subsequently, Labbaf-e Khaniki<sup>14</sup> led archaeological surveys and excavations on Qeshm Island, investigating important historic sites such as Koulaqan, Ramchah and other sites in Basaidu that had previously been identified by Shamlou.<sup>15</sup> The Portuguese castle of Qeshm Island was also excavated by Yaghmaee during three seasons in 2000, 2002, and 2011.<sup>16</sup> Overall, these field projects produced an abundance of evidence for occupation on Qeshm Island from the Sasanian period onwards, but little or no evidence of earlier occupation.

The apparent dearth of occupation on the Iranian coast of the Persian Gulf agrees with the reports of some modern travellers in the region. Stein,<sup>17</sup> for example, noted the general barrenness of the coast and the lack of cultivation. A more varied view is provided by the ancient account of the voyage along the southern Iranian coast by Nearchus, the Admiral of Alexander the Great’s fleet;<sup>18</sup> desert islands and desolate territories and villages of the *Ichthyophagi* or “fish eaters” existed alongside more agriculturally abundant regions, including Qeshm Island (*Oaracta*) and the Bushehr peninsula (*Mesambria*), and relatively populous parts of the coast with clusters of several villages, many boats in their harbours, and mountains with date palms and fruit trees.

Nevertheless, the absence of Bronze Age occupation on the Iranian islands is unexpected given the considerable political and economic importance of several of them, such as Kharg, Kish and Hormuz, in historic periods.<sup>19</sup> Moreover, the relative scarcity of known Bronze Age (and earlier) settlement on the Iranian islands and the northern coast of the Persian Gulf stands in stark contrast to its Arabian islands, where Bronze Age occupation of variable but significant scale and intensity is known, for example, on the islands of

<sup>6</sup>Stein, “Archaeological Reconnaissances in Southern Persia,” 129.

<sup>7</sup>Prickett, “Man, Land and Water,” 514, 1269–72; Priestman, “Settlement & Ceramics,” 8.

<sup>8</sup>Carter et al., “The Bushehr Hinterland,” fig. 4.

<sup>9</sup>Askari-Chaverdi, Petrie, and Taylor, “Early Villages on the Persian Gulf.”

<sup>10</sup>Stein, *Archaeological Reconnaissances in North-western India*, 217–18; Askari-Chaverdi, Petrie, and Taylor, “Early Villages on the Persian Gulf,” 25; and Potts, “Trends and Patterns.”

<sup>11</sup>Khosrowzadeh, *Archaeological Survey of Minab County*; Khosrowzadeh et al., “Kahur Langarchini.”

<sup>12</sup>Stein, “Archaeological Reconnaissances in Southern Persia,” 130.

<sup>13</sup>Babak-Rad, “Sasanian Sites of the Persian Gulf.”

<sup>14</sup>Labbaf-e Khaniki, *Archaeological Survey of Qeshm Island*.

<sup>15</sup>*Ibid.*

<sup>16</sup>Yaghmaee, *First Season of Excavation; Second Season of Excavation*.

<sup>17</sup>Stein, *Archaeological Reconnaissances in North-western India*, 198.

<sup>18</sup>Arrian, *Indica*, 37–9.

<sup>19</sup>See Floor, “HORMUZ ii. ISLAMIC PERIOD”; Potts, “Kharg Island ii”; “Kish Island” and references therein.



**Figure 1.** The location of Qeshm Island in the Persian Gulf.

Umm an-Nar, Bahrain, Tarut and Failaka,<sup>20</sup> and where the ephemeral “way stations” of mobile Bronze Age individuals and groups have also been discovered.<sup>21</sup> Moreover, these Arabian sites contain several categories of Iranian Bronze Age materials, including pottery and stone vessels, sometimes in considerable quantities.<sup>22</sup> Potts,<sup>23</sup> among others, has noted the discrepancies in the intensity of archaeological fieldwork on the northern and southern shores of the Persian Gulf and the contribution this situation makes to the perceived differences in Bronze Age occupation of its Iranian and Arabian shores. We are left to wonder whether the archaeological picture of scant prehistoric occupation in the Iranian coastal regions and islands is a reflection of reality, or a product of limited archaeological research and confounding factors affecting the preservation and discoverability of prehistoric coastal sites, such as sea-level rise,

alluviation, more dispersed settlements and the use of perishable construction materials.<sup>24</sup>

### 3. Recent Fieldwork on Qeshm Island

Qeshm County consists of the four islands of Qeshm, Hengam, Larak and Hormuz, which are situated in the strategic Strait of Hormuz at the entrance of the Persian Gulf (see Figure 1). With an area of about 1491 km<sup>2</sup>, Qeshm is the largest island of the county and indeed, the largest island in the Persian Gulf.<sup>25</sup>

#### 3.1. Topography and Environment

There are a variety of landforms on Qeshm Island, including large and small plains, elevated areas and coastal areas. Generally speaking, the plains of Qeshm

<sup>20</sup>E.g. Potts, *The Arabian Gulf in Antiquity*; Magee, *The Archaeology of Prehistoric Arabia*.

<sup>21</sup>Carter, “Tracing Bronze Age Trade.”

<sup>22</sup>Zarins, “Steatite Vessels”; Potts, “Tepe Yahya”; “In the Beginning: Marhashi”; Petrie, Asgari Chaverdi, and Seyedin, “From Anshan to Dilmun.”

<sup>23</sup>Potts, “Trends and Patterns.”

<sup>24</sup>Cf. Prickett, “Man, Land and Water,” 515–16; Askari-Chaverdi, Petrie, and Taylor, “Early Villages on the Persian Gulf,” 37.

<sup>25</sup>Hormozgan Gazetteer, 5.

have a gentle slope with almost flat terrains and medium- to coarse-grained deep soil profiles consisting predominantly of alluvial sediments, although some plains are narrow and long with sand-rich sediments.<sup>26</sup>

Various features of the coastal areas of Qeshm Island have had profound impacts on the location of settlements and the island's social and economic life throughout its history. The coastal areas can be categorised into three types. The first is coastal wetlands and marshes with shallow bodies of water, notably between Qeshm port and the city of Dargahan to the west. The second type of coastal area is located between Suza and Qeshm port in the southern part of the island and is characterised by the presence of low hills along the coast. In most cases, these hills are close to the beach, creating a striking landscape. The depth of the water is, in most places, enough for launches and ships to moor. Today there are several cities and villages along these southern coasts, a situation that was the case for much of the island's history. The last type of coastal area is the uniform flat sandy beaches along the northern coast. Mangrove forests represent the most important vegetation along the coasts of Qeshm Island, and are particularly common along the northern coast.<sup>27</sup> The western parts of Qeshm Island are mostly composed of marl anticlines with salt domes. The higher areas are dominated by light-coloured mesas and buttes. There are no permanent watercourses on the island, although numerous dried streams carry seasonal floods and rain waters to the Gulf. The water of these streams rarely penetrates into the ground because the sediments are broadly composed of impermeable marl, clay, shale, and/or layers of sandstone and conglomerate. In modern times, the water quality is mediocre, with rather low-rate discharge. The south-westernmost end of the island is composed of carbonate formations with large and small fractures and fissures. Here, in modern times, the rate of discharge is low, but the quality of water is fairly high.<sup>28</sup> Modern average annual rainfall for Qeshm Island is less than 200 mm, which falls predominantly in the cooler season between November and April. These environmental parameters are likely to have impacted on the location of past settlement on the island.

Due to intense erosion and also because of sand storms, sites in the central part of Qeshm Island, and also some littoral areas, are commonly covered with layers of sand, significantly limiting the visibility of surface materials. For this reason, sites identified in the archaeological surveys of the island tend to provide few

surface finds, and conclusions can only be drawn from this material cautiously.

### 3.2. Survey Methodology

The two lead authors of the present paper carried out surveys on Qeshm Island in two seasons, February–March 2006 and March–April 2012. Regional topography was the main consideration for determining the survey methodology, which was largely opportunistic. The survey area incorporated several large and small plains, highlands and coastal areas (Figure 2). During the first season, intensive (walking) surveys were conducted in the eastern part of the island up to the Turian plain. In the second season, intensive survey continued from Turian to the western parts of the island. Because of time constraints, the survey did not cover the entire island. Some remaining areas were only extensively surveyed, using a local guide to target known archaeological sites rather than an intensive walking survey, and the northern coast from Basaido to Guran was not visited at all.

A code consisting of the prefix QS (standing for Qeshm Survey) followed by a sequential number was assigned to the identified sites. The sites were typically designated by their local names; otherwise, the name of the general area or nearby village was assigned to them. Thus, several sites in the vicinity of the same village may have an identical name but a different number.

On the majority of sites, the collection of surface materials – consisting of glass, stone and metal artefacts, but predominantly pottery – proceeded by opportunistic collection, although this strategy varied according to artefact surface density. On sites with comparatively high aggregations of surface materials, collection strategies targeted diagnostic sherds (i.e. rims, bases, pipes and decorated body sherds) and among several typical pottery types, just one example of each was collected. On sites with comparatively few surface finds, such as cemeteries, neither random sampling nor targeted diagnostic collection was employed, and all visible finds were collected for analysis.

### 3.3. Results

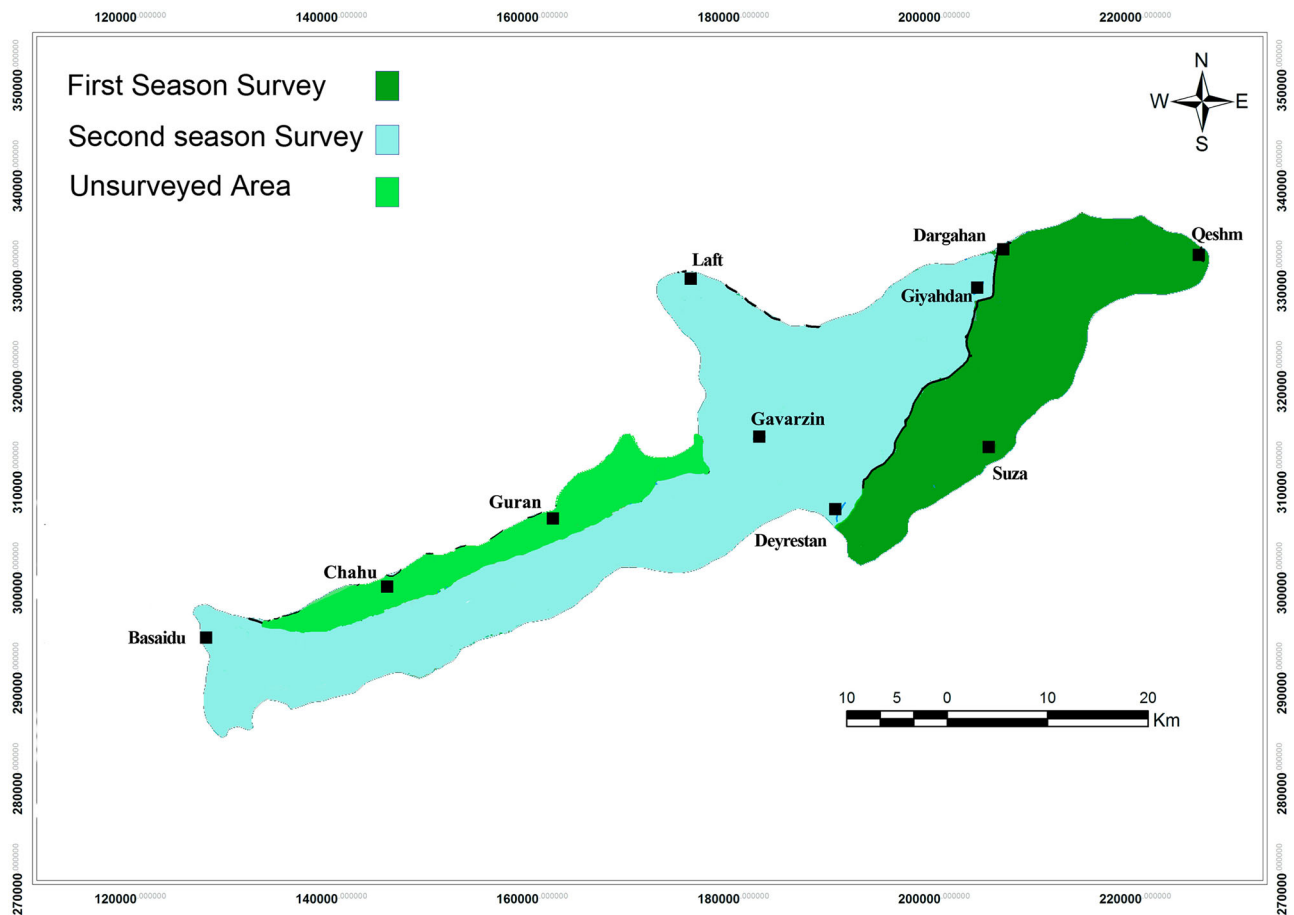
The first season of survey yielded 53 archaeological sites and the second season a further 138.<sup>29</sup> Of these 191 sites, 76 had been identified during previous surveys of the island and the remaining 115 sites were recorded for the first time in our project. The great majority (160)

<sup>26</sup>Khosrowzadeh, "Parthian Settlements and Localities," 81.

<sup>27</sup>Ibid., 82.

<sup>28</sup>Hormozgan Gazetteer, 26.

<sup>29</sup>Khosrowzadeh, *First Season at Qeshm Island; Second Season at Qeshm Island*.



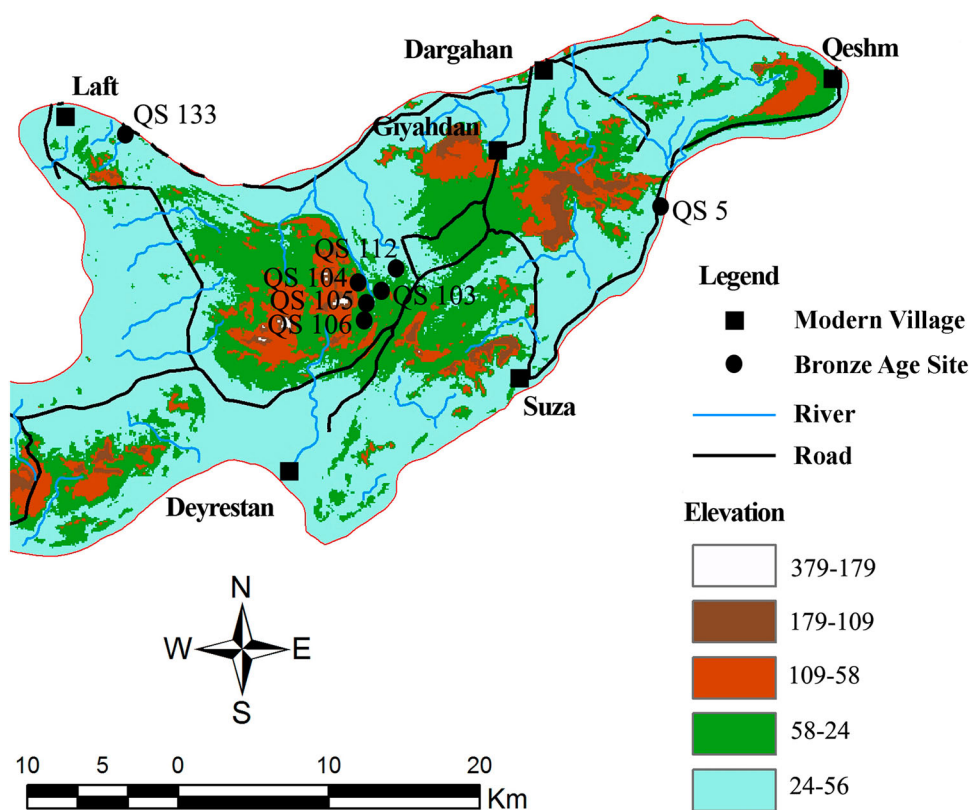
**Figure 2.** The areas of Qeshm Island surveyed in each field season.

of the recorded sites were occupied during various parts of the Islamic period, while 26 exhibit occupation during the Sasanian period, 25 during the Parthian period and 14 during the Iron Age and Achaemenid eras. These results are, in broad terms, similar to those reported in previous studies, albeit with a clearer Iron Age/Achaemenid presence. One of the most significant results of the survey, however, was the discovery of the very first evidence of Bronze Age occupation on Qeshm Island, including three settlements and four cemeteries (Figure 3). These sites are described below, focusing first on settlements and subsequently on cemeteries.

The most significant settlement with unequivocal Bronze Age occupation is Bangali V (QS 112). It is located in the flat and even terrain of the Turian plain and extends over an area *c.* 180 × 580 m. It is almost at the same level as the surrounding ground, and small piles of sandstone (probably used as building materials) were observed in some areas of the site (Figure 4). The main surface characteristic of the site is the ubiquitous distribution of seashells, alongside a relatively high density of potsherds of *c.* 3–5 per square metre. The distribution of potsherds is uneven, with the northern and

southern extremities and the centre point as the most densely populated spots. In total, 30 pieces of Bronze Age pottery were collected from the surface of the site, and this material (see below) indicates that the site was occupied during the third-millennium BC. In addition to these remains, materials related to the Parthian and Ilkhanid (middle Islamic) periods were collected from the surface. Seashell distribution is also uneven, with a few small shell mounds observable in the site's northern and southern extremities. Pieces of metal and glass objects, metal slags (Figure 5), grinding stones and a soft-stone vessel fragment (Figure 6; see Section 3.5) are among the other surface finds. The sandstone distributed across the site was probably used as building material. Bangali V is the largest Bronze Age site of the Iranian islands thus far discovered.

A second site known as Ramchah (QS 5), located *c.* 2 km from the villages of Berkeh Khalaf and Ramchah and *c.* 50 m to the south of the Qeshm-Suza road, also produced Bronze Age material remains. It is the largest site on the island's southern shores, with dimensions of *c.* 150 × 500 m (Figure 7). It is composed of a series of large and small mounds up to 2 m in height. The main

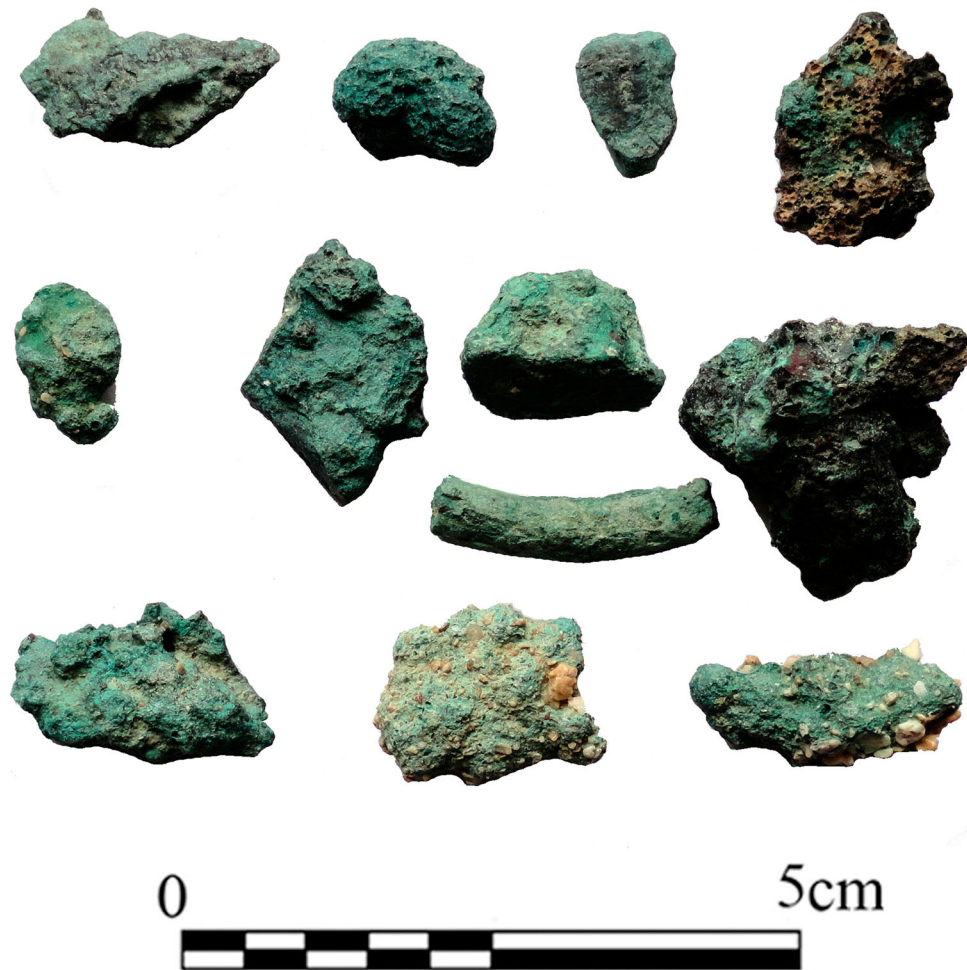


**Figure 3.** The distribution of Bronze Age sites in the surveyed areas of Qeshm Island.



**Figure 4.** A general view of Bangali V (QS 112).



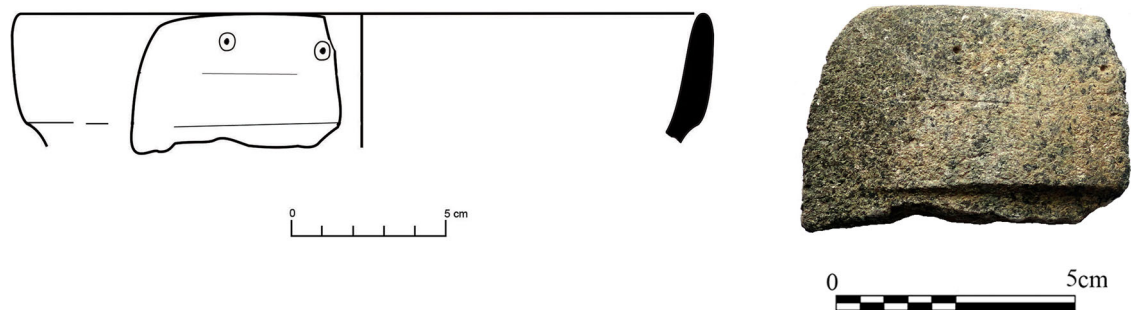


**Figure 5.** Fragments of metal artefacts and metallurgical slags of unknown date from Bangali V (QS 112).

feature of this site is again the ubiquity of seashells, and the remains of sandstone and mud mortar construction could be traced on most parts of the mound. Potsherds and other archaeological materials such as glass pieces are distributed relatively evenly and at a relatively high frequency across the whole site. Preliminary analyses of surface potsherds indicate that the western parts of the site were probably occupied during the Timurid and

Safavid periods, while the central parts are of Ilkhanid and Seljuq times. The eastern parts produced potsherds of the Parthian, Sasanian and early Islamic periods, in addition to 10 sherds of the Bronze Age.

Laft I (QS 133) is located directly on the coast some 4 km east of Bandar-e Laft. With dimensions of c. 680 × 480 m, it is one of the largest historic period sites ever recorded on Qeshm Island. Although the surface



**Figure 6.** A stone vessel fragment with poorly preserved dot-in-circle (or possibly dot-in-double-circle) decoration from Bangali V (QS 112).



**Figure 7.** A general view of Ramchah (QS 5).



**Figure 8.** A general view of Laft I (QS 133). The site is situated beyond the road visible in the middle distance; the Persian Gulf is visible in the far distance.

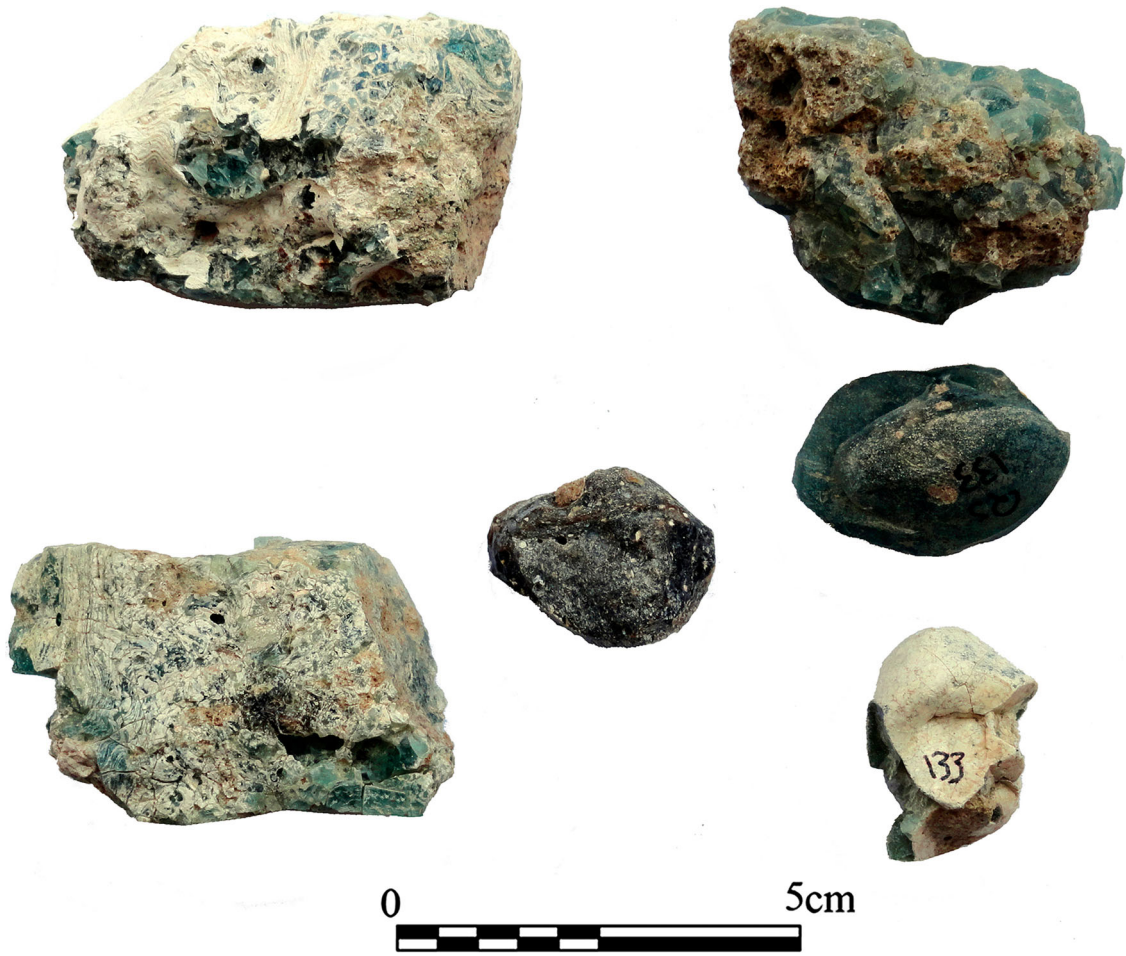


Figure 9. Examples of glass production debris of unknown date from Laft I (QS 133).



Figure 10. Examples of metal ores and metallurgical slags of unknown date from Laft I (QS 133).



**Figure 11.** A general view of Zeinabi IV (QS 103) and some of the visible graves.

finds indicate the site was occupied in Sasanian to Seljuq times, a total of 20 Bronze Age pottery sherds were also recorded across its surface. The landscape of the site is somewhat hilly with the Persian Gulf visible on its northern side and low-level rocks with steeply sloping cliffs to the south (Figure 8). Steep cliffs lie at the northern and western sides of the rocks. The site comprises large and small mounds, with the highest standing more than 2 m tall. Again, seashells are ubiquitous across the surface of the site. Traces of ruined constructions made of sandstone and mud/gypsum mortar are visible on the surface of the site and, similarly to Ramchah (QS 5), the distribution of potsherds and other archaeological materials such as glass pieces is relatively even. The site has been heavily disturbed by digging and levelling of the topsoil, especially at the eastern side, and there are numerous potsherds, glass fragments and metal objects within this spoil. Ceramic wasters and glass production debris (Figure 9) are heaped up on one of the partially destroyed mounds in the northern part of the site. Around 10 m to the south of the mound, there is another mound with remains of slags (probably copper) and possible metal ore specimens (Figure 10), the age of which is unclear.

In addition to these settlement sites, four Bronze Age cemeteries (QS 103–106) with cairn burials were recorded from the second season of the survey. Although some of the graves were located on flat plains, most of them are built on elevated hill slopes and mountains south of Zeinabi village. In shape and structure, the graves are very similar to one another, being constructed of circular or oval-shaped piles of flat rubble with variable dimensions up to c. 10 m in diameter. They represent a burial type that is very common not only in south-eastern Iran,<sup>30</sup> but that also has broad parallels to the south in the U.A.E. and Oman.<sup>31</sup>

The cemetery labelled Zeinabi IV (QS 103) is located about 1 km south of the village of Zeinabi. The site is situated on a relatively elevated, eroded rocky hill composed predominantly of sandstone with a marl bed. Zeinabi IV consists of more than 20 small tumuli that have been disturbed either naturally or anthropogenically (Figure 11). Potsherds, metal pieces (Figure 12), and one bronze vessel (Figure 13) were found on its surface among large numbers of stones from the destroyed graves, which are distributed across the surface of the hill.

<sup>30</sup>Khosrowzadeh, "A Review of Cairn Burial."

<sup>31</sup>E.g. Cleuziou and Tosi, *In the Shadow of the Ancestors*, 107–16.



**Figure 12.** Ferrous metal fragments of unknown date from Zeinabi IV (QS 103).

The cemetery labelled Zeinabi V (QS 104) comprises seven small grave tumuli on a rocky hill approximately 950 m south-west of Zeinabi village. It has a gentle slope on its eastern side. Although the stone structures of the graves have been significantly destroyed, a few tumuli have remained relatively intact and survive to a height of c. 2 m (Figure 14). Bronze Age potsherds are distributed across the surrounding hillside and fragments of alabaster or calcite vessels (Figure 15) were also recorded.

Another cemetery, labelled Zeinabi VI (QS 105), lies on an eroding, rocky hill with a gentle eastwards slope c. 1 km south-west of Zeinabi village. Most of the graves

have been destroyed by natural erosion processes, with only very few remaining relatively intact (Figure 16). Bronze Age potsherds are distributed on and near the disturbed graves and the remains of a sheep skull and postcranial elements were recorded on one of the disturbed graves in the northern part of the site.

The fourth cemetery is labelled Zeinabi VII (QS 106), and is located on an elevated rocky hill approximately 2.5 km south of Zeinabi village and 1 km west of Bangali village. The hill itself is heavily eroding marl and is bounded on the eastern side by Tourian plain, and by natural rocky hills on the other sides. Several relatively



**Figure 13.** A copper-base vessel recovered from the surface of Zeinabi IV (QS 103).

well-preserved stone tumuli are the most noticeable feature of the hill (Figures 17 and 18). As with the other Zeinabi cemetery sites mentioned above, a large number of potsherds are distributed across the hillside.

### 3.4. Pottery

Most of the identifiable surface finds recovered from the Qeshm Bronze Age sites are pottery fragments (Figures 19–24). Within this category, “fine red ware” is the most commonly identified Bronze Age pottery type recovered from both the third-millennium BC settlements and the cemeteries of Qeshm Island. It is well fired with a fine paste and very thin walls. The painted designs are usually located on the upper half of the body and include a range of geometric motifs such as horizontal lines, chevrons, and ladder and triangular motifs. The Qeshm Island Bronze Age pottery has good comparanda over a large area encompassing both the northern and southern sides of the Persian Gulf, including south-eastern Iran and south-eastern Arabia. Detailed sherd descriptions and further parallels are provided in Tables 1 and 2.

Looking to the south, the broad parallels between the Qeshm Island material and pottery from south-eastern Arabia are clear, and draw on a considerable volume of material excavated within the last 30 years. For example, the shapes, designs and technical characteristics of some potsherds are comparable to Umm an-Nar wares recovered from the third-millennium BC settlements and especially burials of the U.A.E. and Oman, for example, at Umm an-Nar Island in Abu Dhabi,<sup>32</sup> Hili in Al-Ain,<sup>33</sup> Al Sufouh in Dubai,<sup>34</sup> Tell Abraç, Jebel al-Emaleh, Mleiha and Jebel al-Buhais in Sharjah,<sup>35</sup> Mowaihat in Ajman,<sup>36</sup> and Unar-2 at Shimal in Ra’s al-Khaimah.<sup>37</sup>

Specifically, a black-on-red sherd from Ramchah (QS 5) (Figure 21) displays horizontal painted lines below the neck framing an undulating ladder motif, which has parallels in the Umm an-Nar assemblages of the U.A.E., for example at Hili,<sup>38</sup> Bat,<sup>39</sup> Tell Abraç,<sup>40</sup> and Kalba K4.<sup>41</sup> Two pieces of painted wares (Figure 23/5, 6) found at Laft I (QS 133) on Qeshm Island are comparable to examples from the Umm an-Nar tomb at Mleiha.<sup>42</sup> Undecorated necked jars from QS 104 resemble examples from Umm an-Nar Island,<sup>43</sup> Tell Abraç,<sup>44</sup> and from the late Umm an-Nar/early Wadi Suq occupation levels at Nud Ziba.<sup>45</sup> One particularly well-

<sup>32</sup>Frifelt, *Third Millennium Graves; The Third Millennium Settlement*.

<sup>33</sup>Al-Tikriti, “Reconsideration of the Late Fourth Millennium”; Cleuziou, Méry, and Vogt, *Protohistoire de l’Oasis d’al-Ain*.

<sup>34</sup>Benton, *Excavations at Al Sufouh*.

<sup>35</sup>Potts, *A Prehistoric Mound; Further Excavations at Tell Abraç; Ancient Magan*; “In the Beginning: Marhashi”; Benton and Potts, *Jebel al-Emaleh*; Jasim, “Third Millennium Culture”; *The Necropolis of Jebel al-Buhais*.

<sup>36</sup>Al-Tikriti, “Umm an-Nar Culture”; Haerinck, “The Rectangular Umm an-Nar Period Grave.”

<sup>37</sup>Carter, “Umm an-Nar 2 and Its Ceramics.”

<sup>38</sup>Cleuziou, “Dilmoun-Arabie,” 47.

<sup>39</sup>Thornton and Ghazal, “Typological and Chronological Consideration of Ceramics,” fig. 9.5.

<sup>40</sup>Potts, *A Prehistoric Mound*, fig. 55/3; *Ancient Magan*, 73.

<sup>41</sup>Eddisford and Phillips, “Kalba in the Third Millennium,” figs. 9/1–3, 10/2–3.

<sup>42</sup>Jasim, “Third Millennium Culture,” fig. 30.

<sup>43</sup>E.g. Frifelt, *Third Millennium Graves*, figs. 68, 71, 104, 110, 170, 175.

<sup>44</sup>E.g. Potts, *A Prehistoric Mound*, fig. 53/8.

<sup>45</sup>Kennet and Velde, “Third and Second Millennium Occupation,” fig. 8.

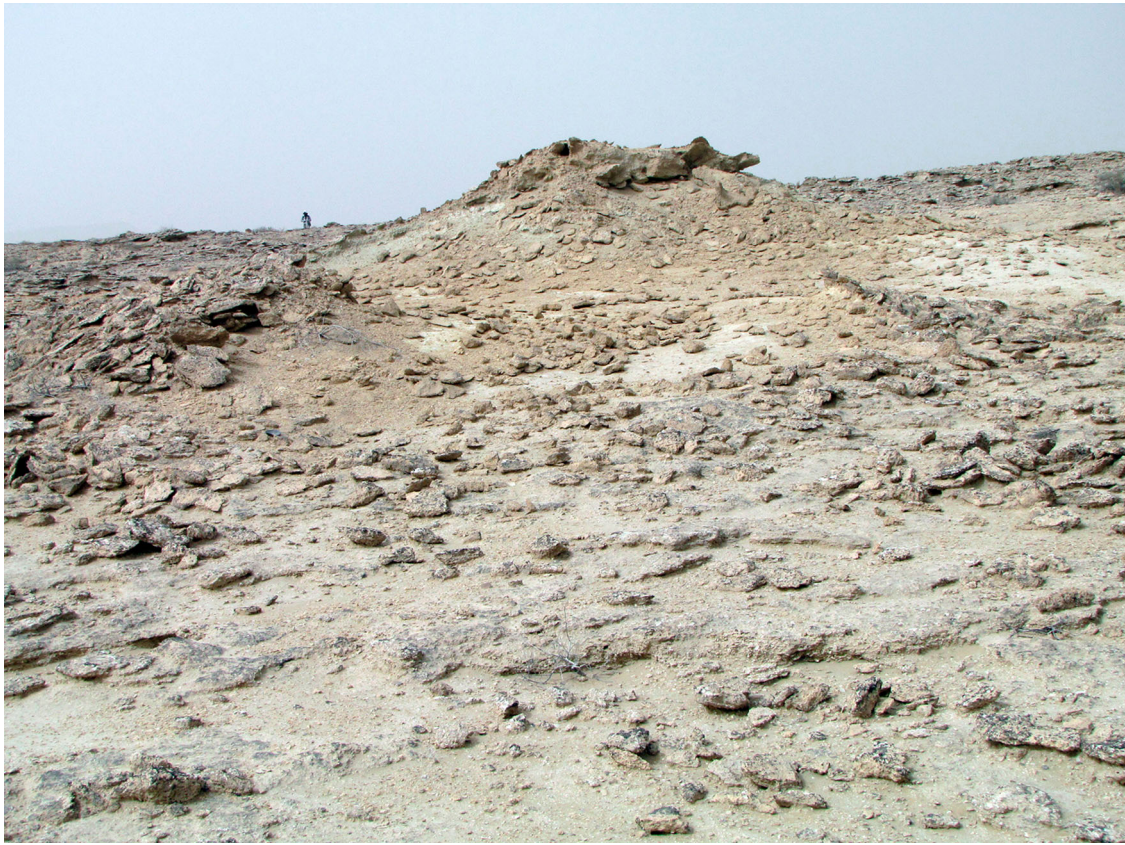


Figure 14. Some destroyed graves on the rocky hills at Zeinabi V (QS 104).



Figure 15. Fragments of alabaster or calcite vessels from Zeinabi V (QS 104).



**Figure 16.** Examples of destroyed Bronze Age graves at Zeinabi VI (QS 105).

preserved black-on-red vessel (Figure 20) is decorated on the upper half, below the neck and on its shoulder with two parallel horizontal lines framing a geometric pattern of standing half-circles with hatching. Two closely comparable vessels were excavated from graves V and VI on Umm an-Nar Island in the U.A.E (Figure 25).<sup>46</sup>

In contrast, it is notable that excavated third-millennium BC assemblages to the north of Qeshm Island, from mainland south-eastern Iran, are relatively rare. Nevertheless, several Qeshm Island vessels are broadly comparable to Bronze Age pottery from south-eastern Iranian sites such as Tepe Yahya in the Soghun Valley, Konar Sandal North and South in Jiroft, Shahdad in Kerman and Tam Maroun in Roudan. Recent excavations at Tam Maroun, which is the nearest excavated Iranian Bronze Age site to Qeshm Island, have recovered reddish-brown wares with red slip and black decorations.<sup>47</sup> Several of the Qeshm Island sherds,

including a piece of reddish-brown ware with red slip and black decoration (Figure 22) from Ramchah (QS 5), are broadly comparable to the Tam Maroun examples. Further afield, the Qeshm pottery is similar to black-on-red pottery excavated at Jiroft,<sup>48</sup> particularly in the use of chevrons and other painted geometric motifs.<sup>49</sup> The “black-on-orange” vessels from Tepe Yahya also display similarities of decoration, shape and other technical characteristics with the pottery from Qeshm Island.<sup>50</sup> For example, a vessel from QS 103 (Figure 24/2) shows broad parallels with black-on-orange vessels with chevron decorations from period IVC–IVB,<sup>51</sup> and vessels with a painted wavy ladder pattern (cf. Figure 21, QS 5) are also characteristic of Yahya IVB.<sup>52</sup> Some simple black-on-red/orange/orange-buff pottery vessels from Area C Phase IVC2<sup>53</sup> or Phase IVB6 are comparable to simple jugs from Qeshm Island (Figures 23/1 and 24/1,3). In addition to Jiroft and Tepe

<sup>46</sup>Frifelt, *Third Millennium Graves*, figs. 140, 203.

<sup>47</sup>Sarlak, “Stratigraphy of Tam Maroun.”

<sup>48</sup>Madjidzadeh, *Jiroft the Earliest Oriental Civilization*, 159.

<sup>49</sup>Piran, “Pottery of Southern Konar Sandal,” 8; Madjidzadeh, “Excavations at Konar Sandal,” figs. 22–23.

<sup>50</sup>Potts, *Excavations at Tepe Yahya*, fig. 3/10; Mutin, “Ceramic Traditions and Interactions,” fig. 3/99–3/103.

<sup>51</sup>Potts, *Excavations at Tepe Yahya*, fig. 1/11; Mutin, “Ceramic Traditions and Interactions,” fig. 3/101.

<sup>52</sup>Mutin, “Ceramic Traditions and Interactions,” fig. 3/103.

<sup>53</sup>Potts, *Excavations at Tepe Yahya*, fig. 3/10.

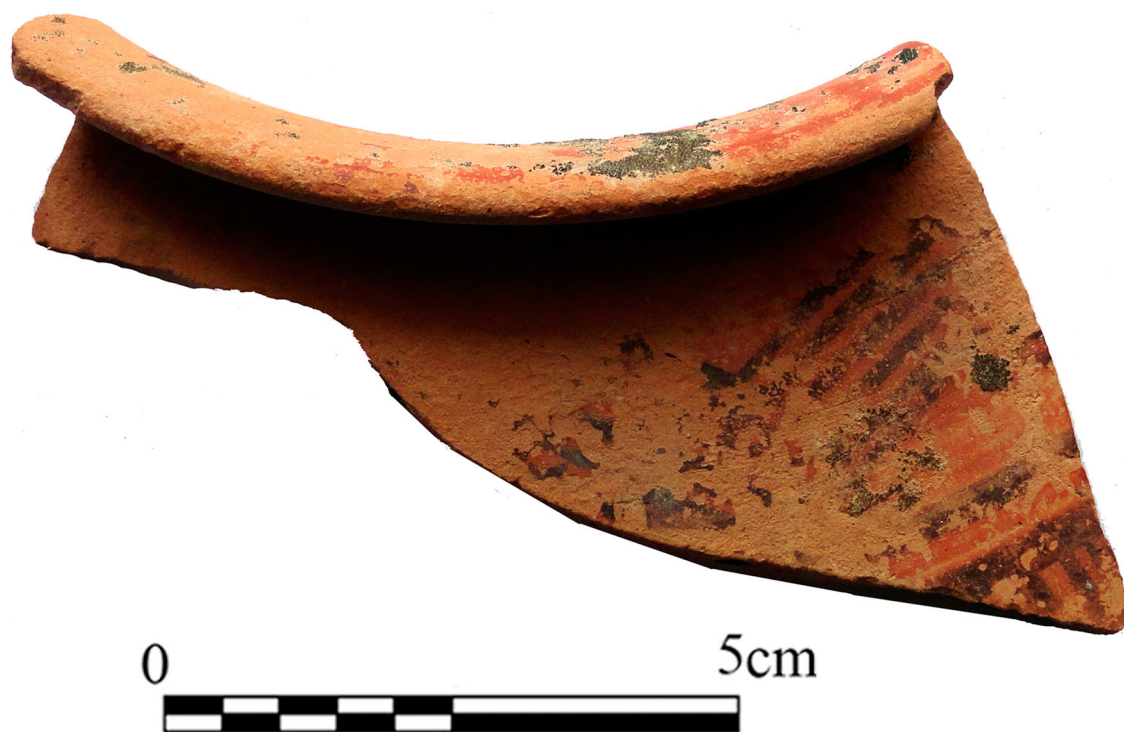




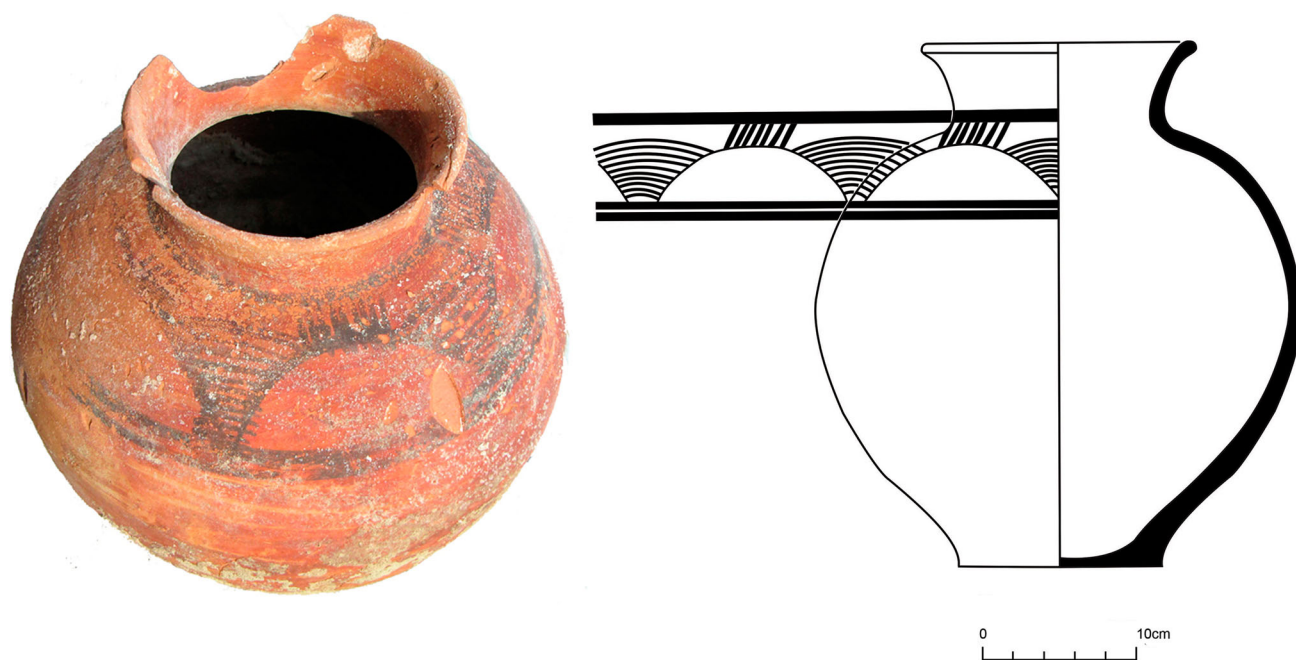
**Figure 17.** Some of the graves at Zeinabi VII (QS 106).



**Figure 18.** One of the graves of Zeinabi VII (QS 106), comprising a large accumulation of rocks in the upper half of the photograph.



**Figure 19.** A fine black-on-red ware rim sherd from Zeinabi IV (QS 103).

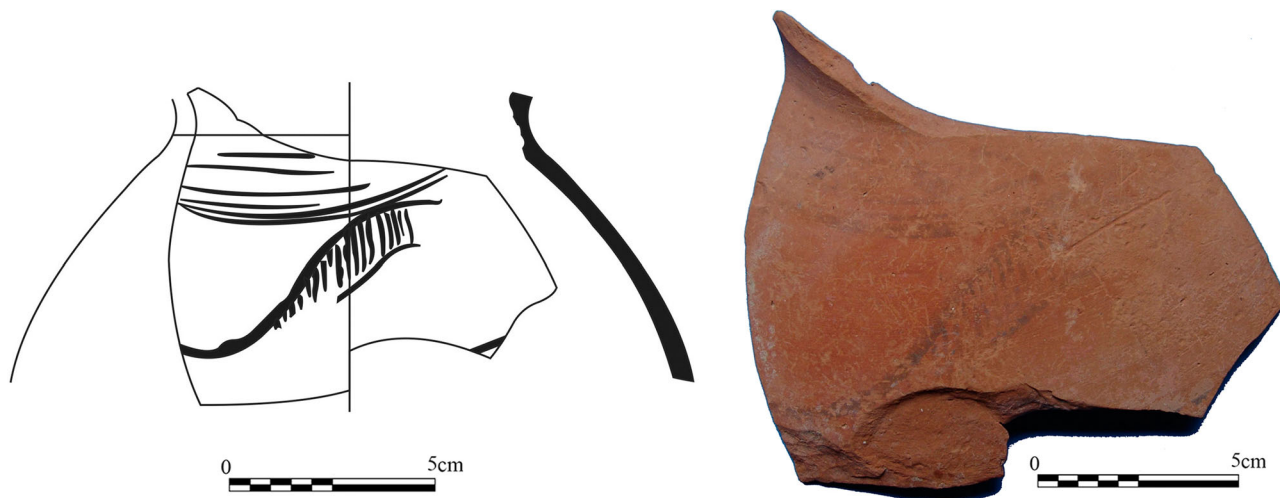


**Figure 20.** Fine black-on-red ware from Zeinabi IV (QS 103).

Yahya, examples of simple, undecorated red ware pottery from Qeshm Island (Figure 24/1,3,4) are technically similar to the plain red pottery of Shahdad and some

motifs from the painted pottery repertoire such as ladder designs, zigzag lines and parallel stripes also find broad parallels at Shahdad Cemetery A.<sup>54</sup>

<sup>54</sup>Hakemi, *Shahdad, Archaeological Excavations*, 584–601, figs. 26–31.



**Figure 21.** A black-on-red ware body sherd from Ramchah (QS 5).



**Figure 22.** A black-on-red ware body sherd from Ramchah (QS 5).

Another type of pottery found in the Qeshm sites is a plain grey ware, characterised by well-fired grey paste with sand and fine grit temper and a dark grey slip, used to produce vessels with finely made bodies. This ware also has parallels at Shahdad.<sup>55</sup> Incised grey wares and painted/polished black-on-grey wares, well known at mainland sites in

south-eastern Iran and as imports in south-eastern Arabia,<sup>56</sup> have not been observed in the Bronze Age ceramic assemblages currently known from Qeshm Island.

### 3.5. Other Bronze Age Materials

The highly eroded dot-in-circle (or dot-in-double-circle) decoration on the stone vessel fragment from Bangali (QS 112: [Figure 6](#)) links it closely to third-millennium BC soft-stone vessels from the U.A.E. and Oman of the Umm an-Nar style or possibly the Wadi Suq style.<sup>57</sup> The vessel is relatively large compared to other examples of this type from south-eastern Arabia, but there are some that are of a similar diameter, for example the Mesopotamian examples presented in Reade and Searight.<sup>58</sup> Outside their production zone in south-eastern Arabia, Umm an-Nar style (and to a lesser extent, Wadi Suq style) soft-stone vessels are widely distributed in the greater Persian Gulf region in Mesopotamia, Iran and Bahrain, and Failaka and Tarut Islands, with rare examples reported as far afield as the Indus Valley and Central Asia.<sup>59</sup>

The alabaster or calcite vessel fragments (see [Figure 15](#)) recorded at Zeinabi V (QS 104) are also possible Bronze Age artefacts, with similar vessels being recorded across a wide area of the ancient Near East in the third and second millennia BC. Parallels for the base fragment ([Figure 15](#), top row, centre) can be found at the Barbar Temple on Bahrain<sup>60</sup> and in the late Umm an-Nar

<sup>55</sup>Hakemi, *Shahdad, Archaeological Excavations*, 582; *Eight Seasons of Survey and Excavation*, 109.

<sup>56</sup>Potts, "Tepe Yahya."

<sup>57</sup>David, "Styles and Evolution"; "Soft-Stone Vessels," 2.

<sup>58</sup>Reade and Searight, "Arabian Soft-Stone Vessels," figs. 2, 3, 9.

<sup>59</sup>E.g. Zarins, "Steatite Vessels"; Kohl, "Production of Chlorite at Tepe Yahya"; Potts, "Umm an-Nar Type Vessel."

<sup>60</sup>Casanova, "Alabaster and Calcite Vessels," fig. 768.

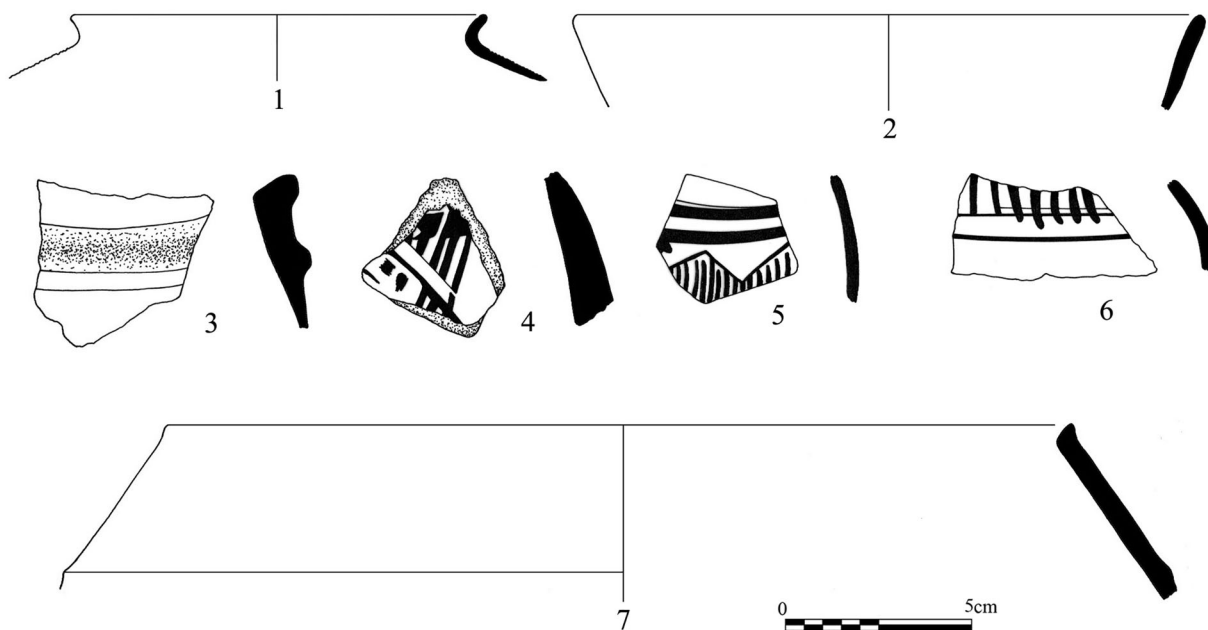


Figure 23. Bronze Age pottery sherds from settlements of Qeshm Island (see Table 1 for detailed descriptions).

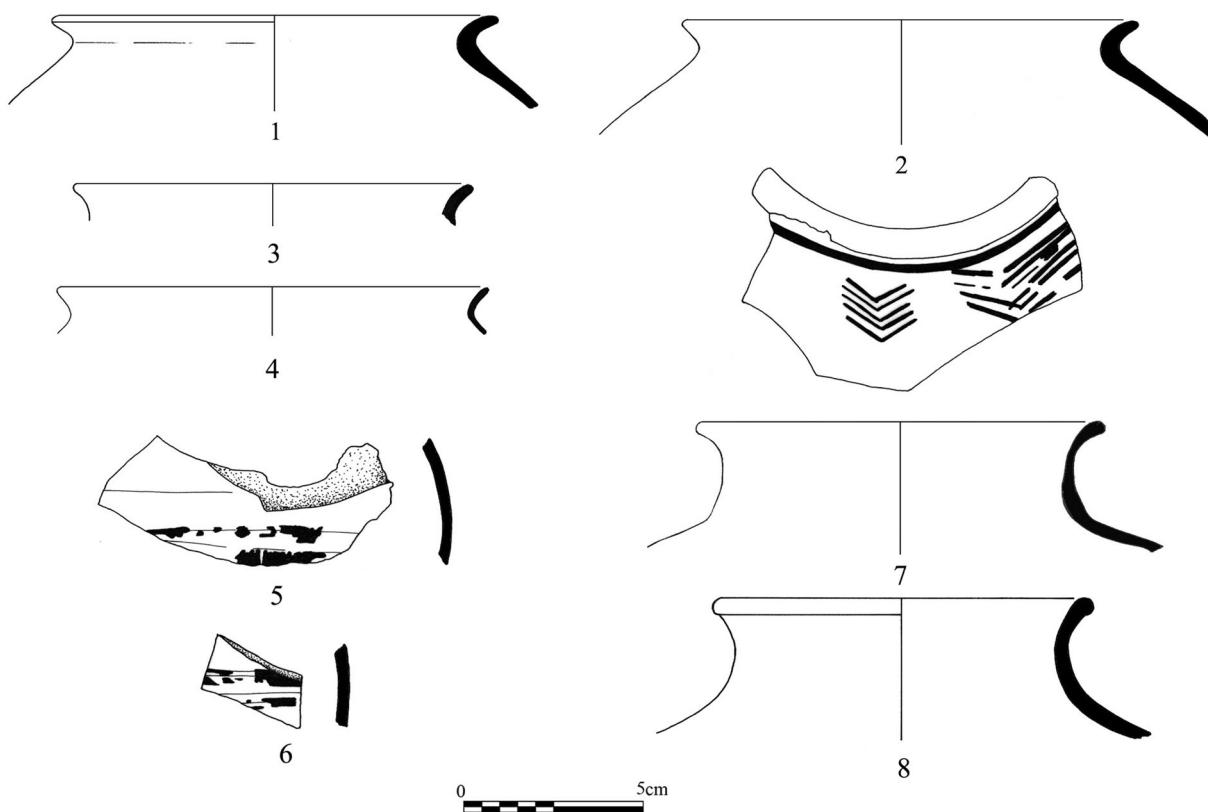


Figure 24. Bronze Age pottery sherds from cemeteries of Qeshm Island (see Table 2 for detailed descriptions).

tomb at Tell Abraq.<sup>61</sup> Both of these sites also provide parallels for the Qeshm Island alabaster or calcite vessels with simple hemispherical profiles (Figure 15, top row,

left<sup>62</sup>). These vessels are most likely the products of workshops in eastern Iran and, as Casanova<sup>63</sup> observed regarding examples from the Barbar Temple, their

<sup>61</sup>Potts, *Ancient Magan*, 125, lower right.

<sup>62</sup>Casanova, "Alabaster and Calcite Vessels," fig. 769; Potts, *Ancient Magan*, 125, lower left.

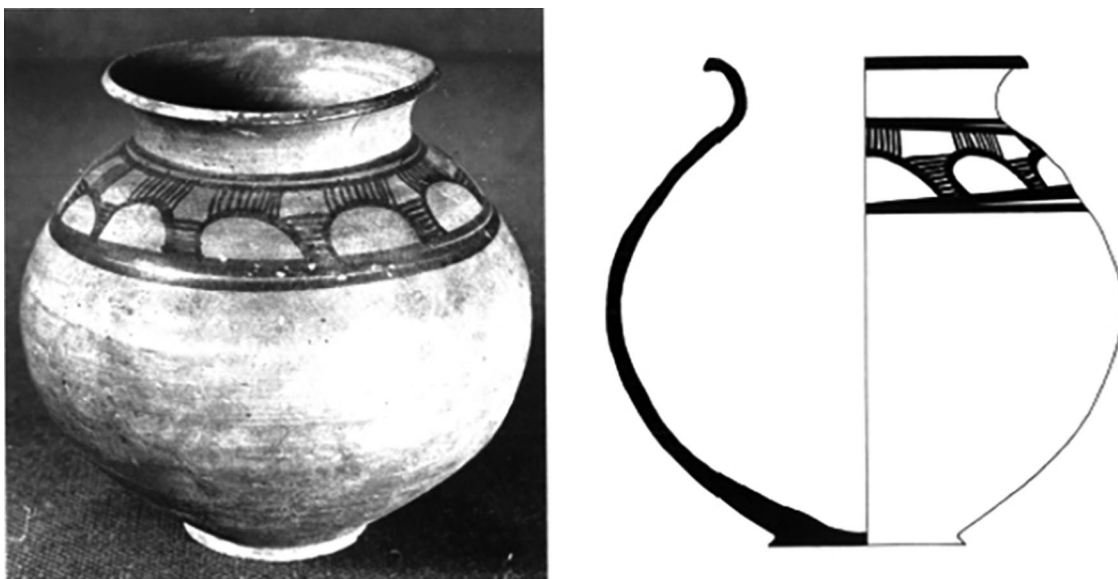
<sup>63</sup>Casanova, "Alabaster and Calcite Vessels," 286.

**Table 1.** Descriptions of Bronze Age pottery sherds from settlements of Qeshm Island.

No.	Site	Ware description					Additional parallels				
		1. Manufacture.	2. Fabric colour (Ext. Int. Core.)	3. Inclusion.	4. Finish.	5. Decoration.		6. Interior coating. Colour. Treatment.	7. Exterior coating. Colour. Treatment.		
24/1	QS 112	1. Wheel.	2. Brownish red.	Brownish red.	Brownish red.	3. Sand.	4. Fine.	5. Exterior surface eroded.	6. n/a.	7. n/a.	
24/2	QS 112	1. Wheel.	2. Light brown.	Light brown.	Light brown.	3. Sand and fine grit.	4. Medium.	5. n/a.	6. n/a.	7. n/a.	
24/3	Qs 112	1. Wheel.	2. Beige.	Beige.	Beige.	3. Grit.	4. Medium.	5. Raised band below the rim.	6. n/a.	7. n/a.	
24/4	QS 112	1. Wheel.	2. Buff.	Buff.	Buff.	3. Sand and grit.	4. Medium.	5. Red painted.	6. Slip.	Light brown.	7. Light brown.
24/5	QS 133	1. Wheel.	2. Orange.	Orange.	Orange.	3. Grit.	4. Medium.	5. Black painted.	6. n/a.	7. Red slip.	
24/6	QS 133	1. Wheel.	2. Orange.	Orange.	Orange.	3. Grit.	4. Medium.	5. Black painted.	6. n/a.	7. Red slip.	Umm an-Nar Island: Frifelt, <i>Third Millennium Graves</i> , figs. 94, 97.
24/7	QS 112	1. Wheel.	2. Brown.	Brown.	Brown.	3. Sand.	4. Medium.	5. n/a.	6. n/a.	7. Slip.	Dark Grey. Abu Dhabi Airport: de Cardi, "Third-millennium pottery", fig. 1/26

**Table 2.** Descriptions of Bronze Age pottery sherds from cemeteries of Qeshm Island.

No.	Site	Ware description					Additional parallels				
		1. Manufacture.	2. Fabric Colour (Ext. Int. Core.).	3. Inclusion.	4. Finish.	5. Decoration.		6. Interior coating. Colour. Treatment.	7. Exterior coating. Colour. Treatment.		
25/1	QS 103	1. Wheel.	2. Beige.	Beige.	Brown.	3. Grit.	4. Fine.	5. n/a.	6. n/a.	7. n/a.	Al-Tikriti, <i>Reconsideration of the Late Fourth Millennium</i> , pl. 128: I Jasim, "The Third Millennium Culture", fig. 33.
25/2	QS 103	1. Wheel.	2. Brown.	Brown.	Brown.	3. Sand.	4. Fine.	5. Black painted.	6. n/a.	7. Red slip.	Al-Tikriti, <i>Reconsideration of the Late Fourth Millennium</i> , pl. 128: I Jasim, "The Third Millennium Culture", fig. 33.
25/3	QS 103	1. Wheel.	2. Brownish orange.	Brownish orange.	Brownish orange.	3. Sand.	4. Fine.	5. n/a.	6. n/a.	7. n/a.	
25/4	QS 103	1. Wheel.	2. Orange.	Orange.	Orange.	3. Sand.	4. Fine.	5. n/a.	6. n/a.	7. n/a.	
25/5	QS 103	1. Wheel.	2. Buff.	Buff.	Buff.	3. Sand.	4. Medium.	5. Black painted.	6. n/a.	7. Red slip.	
25/6	QS 103	1. Wheel.	2. Light brown.	Light brown.	Light brown.	3. Sand.	4. Medium.	5. Black painted.	6. n/a.	7. Red slip.	
25/7	QS 104	1. Wheel.	2. Brownish orange.	Brownish orange.	Brownish orange.	3. Sand.	4. Medium.	5. n/a.	6. n/a.	7. n/a.	Multiple sites in SE Arabia: Frifelt, <i>Third Millennium Graves</i> , fig. 110; Al-Tikriti, <i>Reconsideration of the Late Fourth Millennium</i> , pl. 128/c; Potts, <i>A Prehistoric Mound</i> , fig. 53/8; Kennet and Velde, "Third and Second Millennium Occupation", fig. 8.
25/8	QS 104	1. Wheel.	2. Beige.	Beige.	Brown.	3. Sand and grit.	4. Medium.	5. n/a.	6. n/a.	7. n/a.	

**Figure 25.** A black-on-red ware vessel from Umm an-Nar Island, U.A.E. (Frifelt 1991: 70, fig. 140, max. diam. c. 15 cm).

association with a burial at Zeinabi V represents a common context for such artefacts in a Persian Gulf setting.

Finally, the copper alloy bowl (Figure 13) discovered at site Zeinabi IV (QS103) is very similar to bronze vessels from excavated third-millennium BC graves at Shahdad, including Cemetery A Grave 122.<sup>64</sup> Further afield, the vessel shares a broad similarity with examples of Akkadian date from the Ur Royal Cemetery and Nippur.<sup>65</sup>

#### 4. Conclusions

Most archaeological sites identified on Qeshm Island to date, including all the third-millennium BC sites reported here, have been studied from the perspective of their surface pottery assemblages only. As a result, the conclusions that can be drawn from recent fieldwork remain tentative. The sites of Bangali V (QS 112), Ramchah (QS 5), and Laft I (QS 133) are, nevertheless, the very first third-millennium BC settlements recorded on the Iranian islands of the Persian Gulf. The only other Bronze Age material reported from the Iranian islands of the Persian Gulf is the fragmentary Sumerian statue purportedly from Kharg Island.<sup>66</sup> The significant Bronze Age occupation at Tul-e Peytul on the Bushehr peninsula<sup>67</sup> should also perhaps be considered here, as its difficult access from the mainland even in modern times means that it has functioned more like an island than a mainland port site.<sup>68</sup>

The distribution of the Qeshm Bronze Age sites along the coasts and in cultivable and fertile inland areas, and the preponderance of shell remains at these sites, suggest that subsistence was built around a combination of both agricultural production and the exploitation of marine resources. Contemporary Bronze Age agricultural systems founded on mixed agro-pastoral production are well documented for both mainland south-eastern Iran and south-eastern Arabia,<sup>69</sup> with date palms playing a key role.<sup>70</sup> Likewise, the importance of marine resources including fish to the Bronze Age populations of eastern Arabia and the Arabian islands is very clear.<sup>71</sup> The integration of such subsistence practices by the third-millennium BC inhabitants of Qeshm Island,

while not yet demonstrated, would be unsurprising within this broader regional context.

Based on the pottery assemblages belonging to the third-millennium BC, there is evidence of relationships between Qeshm Island and other regions to the north and south of the Persian Gulf. For instance, the potsherds recovered from Qeshm prehistoric sites are analogous with those of the Umm an-Nar period (2700–2000 BC) of south-eastern Arabia and Bronze Age sites near Minab and further afield in south-eastern Iran. This is perhaps unsurprising given the close cultural, economic and technological connections between these regions.<sup>72</sup> As black-on-red pottery from south-eastern Iran and south-eastern Arabia is very similar both technologically and stylistically<sup>73</sup> and these wares were widely exchanged within the Persian Gulf region,<sup>74</sup> the determination of the locus of production of the Qeshm Bronze Age pottery – whether locally made or imported from Iran or Arabia – will depend on future programmes of compositional analyses along the lines of those already successfully undertaken in south-eastern Arabia.<sup>75</sup>

The third-millennium BC represents an early peak in the intensity of multi-directional, cross-cultural exchange networks that linked a variety of early civilisations in the Persian Gulf region including Sumerian/Akkadian/Babylonian Mesopotamia, Elam, Marhashi, Dilmun, Magan and Meluhha.<sup>76</sup> As yet, the role of Qeshm Island and its inhabitants in this network remains unclear, but further fieldwork on the island, including excavation of the Bronze Age sites described here, will provide fundamental archaeological evidence to build an understanding of this issue.

#### Disclosure Statement

No potential conflict of interest was reported by the authors.

#### Bibliography

Al-Tikriti, W. Y. "Archaeological Investigations in Ghanada Island, 1982–84: Further Evidence for the Coastal Umm an Nar Culture." *Archaeology in the United Arab Emirates* 4 (1985): 9–19.

<sup>64</sup>Hakemi, *Shahdad, Archaeological Excavations*, 633; *Eight Seasons of Survey and Excavation*, 731.

<sup>65</sup>Müller-Karpe, *Metallgefäße im Iraq I*, 185, Taf. 108, cat. nos. 1288–1290.

<sup>66</sup>Madjidzadeh, "A Sumerian Statue from Khark Island."

<sup>67</sup>Pézard, *Mission à Bender-Bouchir*.

<sup>68</sup>Petrie, Asgari Chaverdi, and Seyedin, "From Anshan to Dilmun," 218.

<sup>69</sup>E.g. Mashkour et al., "Bio-archaeological Studies at Konar Sandal"; Méry, "The First Oases in Eastern Arabia."

<sup>70</sup>Tengberg, "Date Palm Garden Cultivation."

<sup>71</sup>E.g. Beech, *In the Land of the Ichthyophagi*.

<sup>72</sup>E.g. Potts, "In the Beginning: Marhashi"; Steinkeller, "New Light on Marhashi."

<sup>73</sup>Potts, "In the Beginning: Marhashi"; Thornton and Ghazal, "Typological and Chronological Consideration of Ceramics," 200–1.

<sup>74</sup>E.g. Laursen, "The Decline of Magan."

<sup>75</sup>Blackman, Méry, and Wright, "Production and Exchange of Ceramics"; Méry, *Les céramiques d'Oman*.

<sup>76</sup>Thornton, "Mesopotamia, Meluhha."

- Al-Tikriti, W. Y. "Reconsideration of the Late Fourth and Third Millennium BC in the Arabian Gulf, with Special Reference to the United Arab Emirates." *PhD diss.*, University of Cambridge, 1981.
- Al-Tikriti, W. Y. "Umm an-Nar Culture in the Northern Emirates: Third Millennium BC Tombs in Ajman." *Archaeology in the United Arab Emirates* 5 (1989): 89–100.
- Arrian. *Indica*. Vol. 2, Books 5–7 of *Anabasis of Alexander*. Translated by P. A. Brunt. Loeb Classical Library 269. Cambridge, MA: Harvard University Press, 1983.
- Askari-Chaverdi, A., C. A. Petrie, and H. Taylor. "Early Villages on the Persian Gulf Littoral: Revisiting Tole-e Pir and the Galehdār Valley." *Iran* 48 (2008): 21–42.
- Babak-Rad, J. "Sasanian Sites of the Persian Gulf (Qeshm Island)." *Barrasiha-ye Tarikhi* 4 (1971): 1–30 (in Persian).
- Beech, M. *In the Land of the Ichthyophagi: Modelling Fish Exploitation in the Arabian Gulf and Gulf of Oman from the 5th Millennium BC to the Late Islamic Period*. BAR International Series S1217. Oxford: Archaeopress, 2004.
- Benton, J. N. *Excavations at Al Sufouh: A Third Millennium Site in the Emirate of Dubai*. Turnhout: Brepols, 1996.
- Benton, J. N., and D. T. Potts. *Jebel Al-Emaleh 1993/1994*. Unpublished Report Submitted to the Directorate of Antiquities, Sharjah, U.A.E., 1995.
- Blackman, M. J., S. Méry, and R. P. Wright. "Production and Exchange of Ceramics on the Oman Peninsula from the Perspective of Hili." *JFA* 16, no. 1 (1989): 61–77.
- Carter, R. A. "Preliminary Report on Umm an-Nar 2 and Its Ceramics." *Bulletin of the Society for Arabian Studies* 7 (2002): 5–14.
- Carter, R. A. "Tracing Bronze Age Trade in the Arabian Gulf: Evidence for Way-Stations of the Merchants of Dilmun Between Bahrain and the Northern Emirates." In *Archaeology of the United Arab Emirates: Proceedings of the First International Conference on the Archaeology of the U.A.E.*, edited by D. T. Potts, H. Al-Naboodah, and P. Hellyer, 123–131. London: Trident Press, 2003.
- Carter, R. A., K. Challis, S. Priestman, and H. Tofighian. "The Bushehr Hinterland. Results of the First Season of the Iranian-British Archaeological Survey of Bushehr Province." *Iran* 44 (2006): 63–103.
- Casanova, M. "Alabaster and Calcite Vessels." In *The Barbar Temples*, edited by H. H. Andersen and F. Højlund, 283–288. Moesgaard: Jutland Archaeological Society, 2004.
- Cleuziou, S. "Dilmoun-Arabie (en marge de C. M. Piesinger: 'The Legacy of Dilmun')." In *L'Arabie et ses mers bordières. I. Itinéraires et voisinages*, edited by J. F. Salles, 27–58. Lyon: Maison de l'Orient, 1988.
- Cleuziou, S., S. Méry, and B. Vogt. *Protohistoire de l'Oasis d'al-Ain, Travaux de la Mission Archéologique Française à Abou Dhabi (Émirats Arabes Unis): Les sépultures de l'Âge du Bronze*. BAR International Series 2227. Oxford: Archaeopress, 2011.
- Cleuziou, S., and M. Tosi. *In the Shadow of the Ancestors: The Prehistoric Foundations of the Early Arabian Civilization in Oman*. Muscat: Ministry of Heritage and Culture, 2007.
- David, H. "Soft-Stone Vessels from Umm an-Nar Tombs at Hili (UAE): A Comparison." *Proceedings of the Seminar for Arabian Studies* 32 (2002): 175–185.
- David, H. "Styles and Evolution: Soft Stone Vessels During the Bronze Age in the Oman Peninsula." *Proceedings of the Seminar for Arabian Studies* 26 (1996): 31–46.
- de Cardi, B. "Third-Millennium and Later Pottery from Abu Dhabi Airport." *Arabian Archaeology and Epigraphy* 8 (1997): 161–173.
- Eddisford, D., and C. Phillips. "Kalba in the Third Millennium (Emirate of Sharjah, UAE)." *Proceedings of the Seminar for Arabian Studies* 39 (2009): 111–124.
- Floor, W. "HORMUZ ii. ISLAMIC PERIOD." In EIr, 2004. Accessed December 15, 2016. [www.iranicaonline.org/articles/hormuz-ii](http://www.iranicaonline.org/articles/hormuz-ii).
- Frifelt, K. *The Third Millennium Settlement. Vol. II of the Island of Umm an-Nar*. Aarhus: Jutland Archaeological Society, 1995.
- Frifelt, K. *Third Millennium Graves. Vol. I of the Island of Umm an-Nar*. Aarhus: Jutland Archaeological Society, 1991.
- Haerincq, E. "The Rectangular Umm an-Nar Period Grave at Mowaihat (The Emirate of Ajman UAE)." *Gentsebijdragen tot de kunstgeschiedenis en ouheidkunde* 29 (1991): 1–30.
- Hakemi, A. *In Archaeological Report of Eight Seasons of Survey and Excavation at Shahdad (Lut Plain) 1968–1975*, edited by M. Moosavi. Tehran: Research Center for ICHHTO, Iranian Center for Archaeological Research, 2006 (in Persian).
- Hakemi, A. *Shahdad, Archaeological Excavations of a Bronze Age Center in Iran*. Translated and edited by S. M. S. Sajjadi. Rome: IsIAO, 1997.
- Hormozgan Gazetteer of Settlements*. Qeshm County. Department of Geography Organization of Armed Forces, 2004 (in Persian).
- Jasim, S. A. *The Necropolis of Jebel al-Buhais: Prehistoric Discoveries in the Emirate of Sharjah, United Arab Emirates*. Sharjah: Department of Culture & Information, Government of Sharjah, 2012.
- Jasim, S. A. "The Third Millennium Culture in the Emirate of Sharjah." In *Proceedings of the First International Conference on the Archaeology of the United Arab Emirates (Abu Dhabi, 15–18 April 2001)*, edited by D. T. Potts, H. Naboodah, and P. Hellyer, 85–100. London: Trident Press, 2003.
- Kennet, D., and C. Velde. "Third and Early Second Millennium Occupation at Nud Ziba, Khatt (UAE)." *Arabian Archaeology and Epigraphy* 6 (1995): 81–99.
- Khosrowzadeh, A. "Parthian Settlements and Localities on Qeshm Island." *Pazhoheshhaye - bastanshenasi Iran* 5 (2013): 79–100 (in Persian).
- Khosrowzadeh, A. *Report on the Archaeological Survey of Minab County*. Unpublished Report Submitted to the Iranian Center for Archaeological Research, Tehran, 2005 (in Persian).
- Khosrowzadeh, A. *Report on the First Season of Archaeological Survey at Qeshm Island*. Unpublished Report Submitted to the Iranian Center for Archaeological Research, Tehran, 2006 (in Persian).
- Khosrowzadeh, A. *Report on the Second Season of Archaeological Survey at Qeshm Island*. Unpublished Report Submitted to the Iranian Center for Archaeological Research, Tehran, 2012 (in Persian).
- Khosrowzadeh, A. "A Review of Cairn Burial of South-Eastern Iran." *Name-ye pazuheshgah* 20–21 (2007): 89–104 (in Persian, with summary in English).
- Khosrowzadeh, A., A. Aali, D. Kennet, and S. Priestman. "Kahur Langarchini, a Parthian Port on the Coast of the Persian Gulf." *Gozareshhay-e Bastanshenasi* 5 (*Archaeological Reports* 5) (2006): 55–71 (in Persian).

- Kohl, P. L. "Reflections on the Production of Chlorite at Tepe Yahya: 25 years Later." In *Excavations at Tepe Yahya, Iran 1967–1975: The Third Millennium*, edited by D. T. Potts, 209–230. Cambridge, MA: American School of Prehistoric Research and Peabody Museum of Archaeology and Ethnology Harvard University, 2001.
- Labaf-e Khaniki, R. *Archaeological Survey of Qeshm Island*. Unpublished Report Submitted to the Center of Cultural Heritage Organization, Tehran, 1981 (in Persian).
- Laursen, S. T. "The Decline of Magan and the Rise of Dilmun: Umm an-Nar Ceramics from the Burial Mounds of Bahrain, c.2250–2000 BC." *Arabian Archaeology and Epigraphy* 20 (2009): 134–155.
- Madjidzadeh, Y. *Jiroft the Earliest Oriental Civilization*. Tehran: Ministry of Culture and Islamic Guidance, 2003 (in Persian).
- Madjidzadeh, Y. "A Sumerian Statue from Khark Island in the Persian Gulf." In *Yeki bud, yeki nabud. Essays on the Archaeology of Iran in Honor of William Sumner*, edited by N. Miller and K. Abdi, 152–155. Los Angeles: Costen Institute of Archaeology, Monograph 48, University of California, 2003.
- Madjidzadeh, Y. with a contribution by Pittman, H. "Excavations at Konar Sandal in the Region of Jiroft in the Halil Basin: First Preliminary Report (2002–2008)." *Iran* 46 (2008): 69–103.
- Magee, P. *The Archaeology of Prehistoric Arabia: Adaptation and Social Formation from the Neolithic to the Iron Age*. New York: Cambridge University Press, 2014.
- Mashkour, M., M. Tengberg, Z. Shirazi, and Y. Madjidzadeh. "Bio-archaeological Studies at Konar Sandal, Halil Rud Basin, Southeastern Iran." *Environmental Archaeology* 18 (2013): 222–246.
- Méry, S. "The First Oases in Eastern Arabia: Society and Craft Technology, in the 3rd Millennium BC at Hili, United Arab Emirates." *Revue d'ethnoécologie* 4 (2013). <http://ethnoecologie.revues.org/1631>.
- Méry, S. *Les céramiques d'Oman et l'Asie moyenne: une archéologie des échanges à l'Âge du Bronze*. Paris: Éditions du CNRS, 2000.
- Müller-Karpe, M. *Metallgefäße im Iraq I (Von den Anfängen bis zur Akkad-Zeit)*. *Prähistorische Bronzefunde Ab. II Bd. 14*. Stuttgart: Franz Steiner, 1993.
- Mutin, B. "Ceramic Traditions and Interactions on the South-Eastern Iranian Plateau During the Fourth Millennium BC." In *Ancient Iran and Its Neighbours. Local Development and Long-Range Interactions in the Fourth Millennium BC*, edited by C. A. Petrie, 253–275. The British Institute of Persian Studies, Archaeological Monographs Series 3. Oxford: Oxbow Books, 2013.
- Petrie, C. A., A. Asgari Chaverdi, and M. Seyedin. "From Anshan to Dilmun and Magan: The Spatial and Temporal Distribution of Kaftari and Kaftari-Related Ceramic Vessels." *Iran* 43 (2005): 199–236.
- Pézar, M. *Mission à Bender-Bouchir*. Paris: Publications de la Mission en Perse, 1914.
- Piran, S. "Pottery of Southern Konar Sandal: The First Half of the Third Millennium." In *First International Conference of Archaeological Research in Jiroft: The Halil Basin Civilization*, edited by Y. Madjidzadeh, 93–113. Kerman: ICHTO, 2008 (in Persian).
- Potts, D. T. *Ancient Magan: The Secrets of Tell Abraq*. London: Trident, 2000.
- Potts, D. T. *The Arabian Gulf in Antiquity, vol. I*. Oxford: Clarendon, 1990.
- Potts, D. T. *Excavations at Tepe Yahya, Iran 1967–1975: The Third Millennium*. Cambridge, MA: American School of Prehistoric Research and Peabody Museum of Archaeology and Ethnology Harvard University, 2001.
- Potts, D. T. *Further Excavations at Tell Abraq: The 1990 Season*. Copenhagen: Munksgaard, 1991.
- Potts, D. T. "In the Beginning: Marhashi and the Origins of Magan's Ceramic Industry in the Third Millennium BC." *Arabian Archaeology and Epigraphy* 16 (2005): 67–78.
- Potts, D. T. "Kharg Island ii. History and Archaeology." In *EIr*, 2004. [www.iranicaonline.org/articles/kharg-island](http://www.iranicaonline.org/articles/kharg-island). Accessed December 15, 2016.
- Potts, D.T. "Kish Island". In *EIr*, 2004. Accessed December 15, 2016. [www.iranicaonline.org/articles/kish-island](http://www.iranicaonline.org/articles/kish-island).
- Potts, D.T. *A Prehistoric Mound in the Emirate of Umm al-Qaiwain, U.A.E.: Excavations at Tell Abraq in 1989*. Copenhagen: Munksgaard, 1990.
- Potts, D. T. "Tepe Yahya, Tell Abraq and the Chronology of the Bampur Sequence." *IA* 38 (2003): 1–24.
- Potts, D. T. "Trends and Patterns in the Archaeology and Pre-modern History of the Gulf Region." In *The Emergence of the Gulf States: Studies in Modern History*, edited by J. E. Petersen, 19–42. London: Bloomsbury Academic, 2016.
- Potts, D. T. "An Umm an-Nar-Type Compartmented Soft-Stone Vessel from Gonur Depe, Turkmenistan." *Arabian Archaeology and Epigraphy* 18 (2008): 167–180.
- Prickett, M. "Man, Land and Water: Settlement Distribution and the Development of Irrigation Agriculture in the Upper Rud-i Gushk Drainage, Southeastern Iran." *PhD diss.*, Harvard University, 1986.
- Priestman, S. M. N. "Settlement & Ceramics in Southern Iran: An Analysis of the Sasanian & Islamic Periods in the Williamson Collection." *Durham theses.*, Durham University, 2005. <http://etheses.dur.ac.uk/2745/>.
- Reade, J., and A. Searight. "Arabian Softstone Vessels from Iraq in the British Museum." *Arabian Archaeology and Epigraphy* 12 (2001): 156–172.
- Sarlak, S. "Stratigraphy of Tam Maroun and Soltan Miran, Rudan, Hormozgan Province." In *Bulletin of the Persian Gulf*, edited by A. Kheyrandish and M. Tabriznia, 371–428. Tehran: Khane Ketab, 2012 (in Persian).
- Shamlou, G. "Excavation Around Minab Port." *Bastanshenasi va honare Iran* 9, no. 10 (1972): 124–128 (in Persian).
- Stein, M. A. *Archaeological Reconnaissances in North-Western India and South-Eastern Iran*. London: Macmillan, 1937.
- Stein, M. A. "Archaeological Reconnaissances in Southern Persia." *The Geographical Journal* 83, no. 2 (1934): 119–134.
- Steinkeller, P. "New Light on Marhashi and Its Contacts with Makkian and Babylonia." *Journal of Magan Studies* 1 (2006): 1–17.
- Tengberg, M. "Beginnings and Early History of Date Palm Garden Cultivation in the Middle East." *Journal of Arid Environments* 86 (2012): 139–147.
- Thornton, C. P. "Mesopotamia, Meluhha, and Those in Between." In *The Sumerian World*, edited by H. Crawford, 600–619. London: Routledge, 2013.



- Thornton, C. P., and R. O. Ghazal. "Typological and Chronological Consideration of the Ceramics at Bat, Oman." In *The Bronze Age Towers at Bat, Sultanate of Oman: Research by the Bat Archaeological Project 2007–12*, edited by C. P. Thornton, C. M. Cable, and G. L. Possehl, 179–216. Philadelphia: University of Pennsylvania Museum of Archaeology and Anthropology, 2016.
- Yaghmaee, E. *Report on the First Season of Archaeological Excavation of the Portuguese Castle of Qeshm*. Unpublished Report Submitted to the Iranian Center for Archaeological Research, Tehran, 2000 (in Persian).
- Yaghmaee, E. *Report on the Second Season of Archaeological Excavation of the Portuguese Castle of Qeshm*. Unpublished Report Submitted to the Iranian Center for Archaeological Research, Tehran, 2002 (in Persian).
- Yasi, J. "Archaeological Survey of the Coastal Province." In *The Third Annual Conference on Excavation and Archaeological Research in Iran*, edited by F. Bagherzadeh, 111–116. Tehran: ICHHTO, 1975 (in Persian).
- Zarins, J. "Steatite Vessels in the Riyadh Museum." *Atlat* 2 (1978): 65–93.