

Newly-discovered Coastal and Island Archaeological Sites in North East Abu Dhabi

by Peter Hellyer

Introduction

Since late 1995, the Abu Dhabi Islands Archaeological Survey, ADIAS, has carried out several field surveys in an area south and south-west of the island of Abu Dhabi, investigating parts of the Shanayel and Rumaitha areas on the inland edge of the coastal *sabkhas* (salt-flats), around 30-40 km south of Abu Dhabi, and also the Dabb'iya peninsula, approximately 30 km. south-west of Abu Dhabi and a group of islands to the west of Dabb'iya. Much, though not all, of the work has been undertaken in association with the Abu Dhabi Company for Onshore Oil Operations, ADCO, whose fields of Shanayel, Rumaitha and Dabb'iya underlie much of the surveyed area. These three fields are known collectively by ADCO as the North-East Abu Dhabi Fields.

This paper reviews the archaeological discoveries in this area, and compares the very different nature of the sites found on the peninsula and adjacent islands of Dabb'iya and on the sand dunes and aeolianite outcrops at the inner edge of the *sabkha* in Shanayel and Rumaitha.

Geography and Geology of the Survey Area

The geographical area herein described as North East Abu Dhabi lies to the west and south-west of the island city of Abu Dhabi, capital of the United Arab Emirates. Shanayel, the smallest and most easterly area, is crossed by the new tarmac highway running south to the

Liwa Oasis village of Hamim, and comprises partly *sabkha* salt flats and partly mobile Holocene dunes and outcrops of Pleistocene aeolianite (fossil sand dunes). It is adjoined, to its west, by the Rumaitha area, which also lies partly under *sabkha*, but extends deeper into the sandsheet south of the inner edge of the *sabkha*. The *sabkha* areas include small plains or 'fingers' extending into the sandsheet, often merging almost imperceptibly into rocky, shallowly-ridged exposures of aeolianite that have been eroded by wind and water down almost to the level of the *sabkha* itself. In the *sabkha* areas, as well as in interdunal plains between the aeolianite outcrops and the mobile dunes of the sandsheet, there are occasional outcrops of an earlier land surface of late Miocene or Pliocene date. These are sometimes eroded almost completely away, but some, locally known as *barqat*, rise to 30 m. or more above the surrounding surface, where they are capped by harder material.

The Dabb'iya area lies north-west of Rumaitha, extending westwards to around 50 km. from Abu Dhabi island. It includes an extensive area of coastal *sabkha*, the tombolo of the Dabb'iya peninsula itself, several low-lying islands comprised mainly of *sabkha* and aeolianite outcrops, of which those of, from the west, Rufayq, Bu Sharah, Qusabi and Bu Qirmah are the most important, and a surrounding area of shallow inshore waters and inter-tidal flats, within which eroded rocky outcrops and low sand banks occur.

While much of the broader Dabb'iya area is today

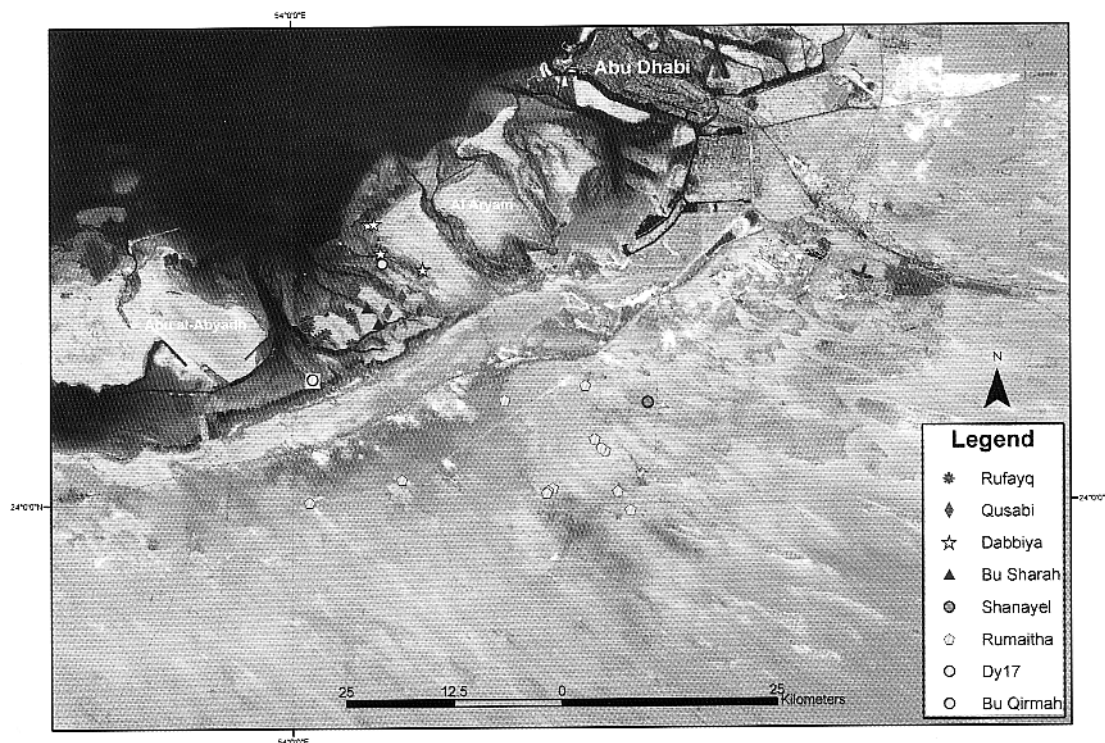


Fig. 1. The Shanayel, Rumaitha and Dabb'iya areas of North-East Abu Dhabi, showing sites mentioned in the text. Map prepared by ERWDA.

sabkha, particularly on the Dabb'iyā peninsula itself and on the mainland coastline to the south of the islands mentioned above, it is important to note that the geography of this part of the coastal zone of Abu Dhabi has changed significantly over the course of the past four thousand years or so. Studies of the *sabkha* have suggested that it first began to form around 2,000 BC (1). Prior to that, much of the area would have been shallow lagoons, with some of today's raised outcrops in the *sabkha* being islands. Detectable from satellite photography and, with care, on the ground, a slightly raised ridge running broadly parallel to the present coastline, but a few hundred metres or so inland, represents the old beach that was formed at the time of the peak of the Flandrian transgression in the mid-Holocene, when sea levels were up to a metre or so higher than they are today. Inland of the old beach ridge, the *sabkha* extends to the aeolianite and dunes at its inner edge, over areas which, in some cases, have been deflated as part of the process of *sabkha* formation although, in some areas, the inner edge roughly represents the mid-Holocene shoreline (2). As will be seen, this is of importance in terms of the results of archaeological survey.

As noted elsewhere (3), the *sabkhas* of Abu Dhabi, as strictly defined in geological terms, have thus far failed to yield a single archaeological or palaeontological site, despite considerable study, although such sites have been found on earlier Holocene shorelines or raised Miocene outcrops within the *sabkhas*.

Survey results

During an ADIAS baseline study of the North East Abu Dhabi area in late 1998 and early 1999 (4), and

subsequent work, a total of 45 archaeological sites have been identified, along with a further five sites of purely palaeontological interest not discussed here. Of the 45, two were in Shanayel, seven in Rumaitha and 36 in the Dabb'iyā area, including the peninsula and nearby islands.

During the survey work and subsequent analysis of finds, it has become apparent that there is a clear difference between the types of sites, and their date, to be found on the islands adjacent to the Dabb'iyā peninsula and the peninsula itself, on the one hand, and in the Shanayel and Rumaitha areas, on the other. This distinction appears to be directly related to the current geography, as well as to the geography that existed prior to the formation of the *sabkha* salt-flats.

Shanayel and Rumaitha

In Shanayel, only two archaeological sites have thus far been identified. Close to each other, on the same interdunal exposure of aeolianite, not far inland from the inner edge of the *sabkha*, they comprise small and loose scatters of Late Islamic ceramics, including pottery of the well-known Julfar horizon. Judging by the number and types of sherds recovered, each probably represent single incidents of occupation, and can be interpreted as the remains of temporary campsites (*Plate 1*).

In the Rumaitha area, a total of twelve sites have now been identified, although five of these are purely palaeontological in nature. These, including one with vertebrate fossil remains, appear to be Late Miocene in date, (6 to 8 million years ago), but are not dealt with here. All the archaeological sites have been ascribed to periods that pre-date the formation of the *sabkha*. Six yielded lithic artifacts or debitage attributable to the Late

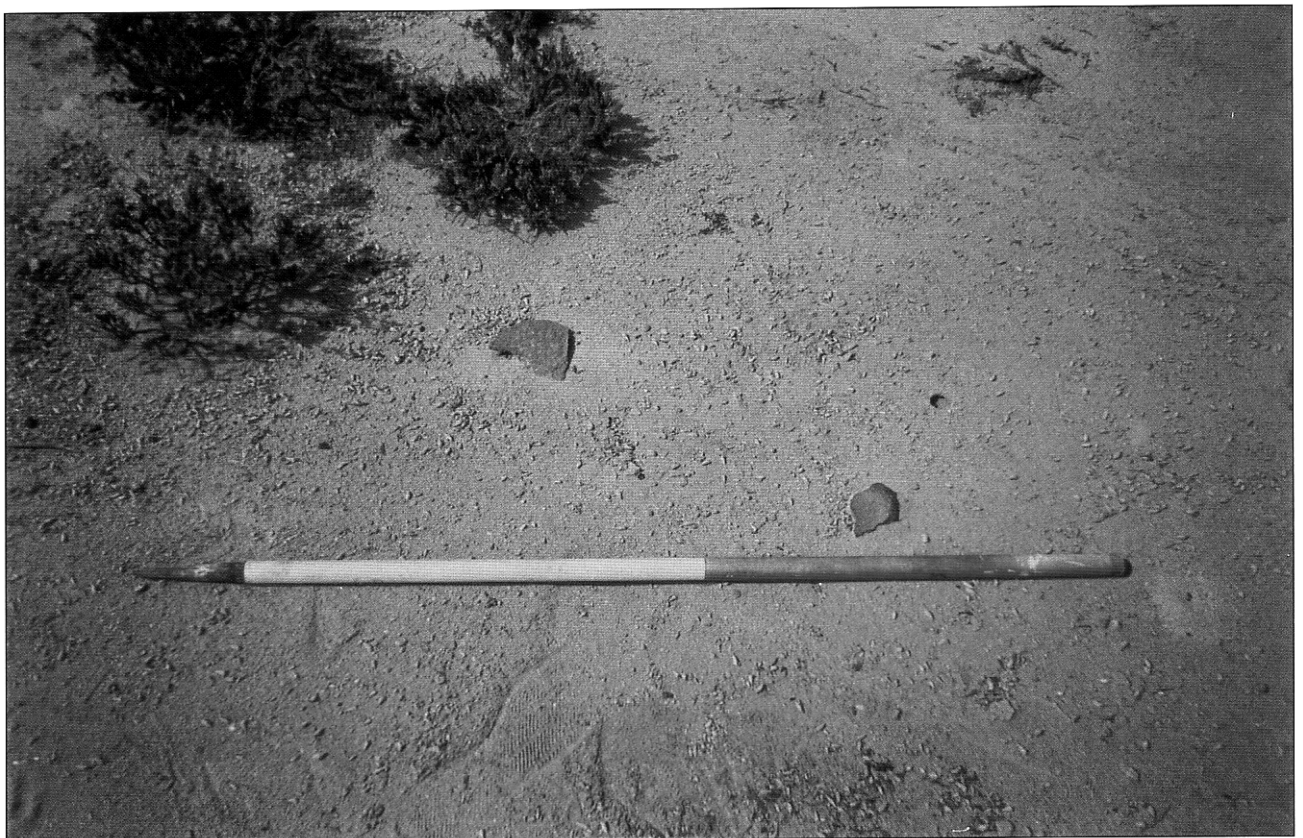


Plate 1. Late Islamic Julfar ware sherds at Shanayel site SN 2

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Plate 1. Late Islamic Julfar ware sherds at Shanayel site SN 2

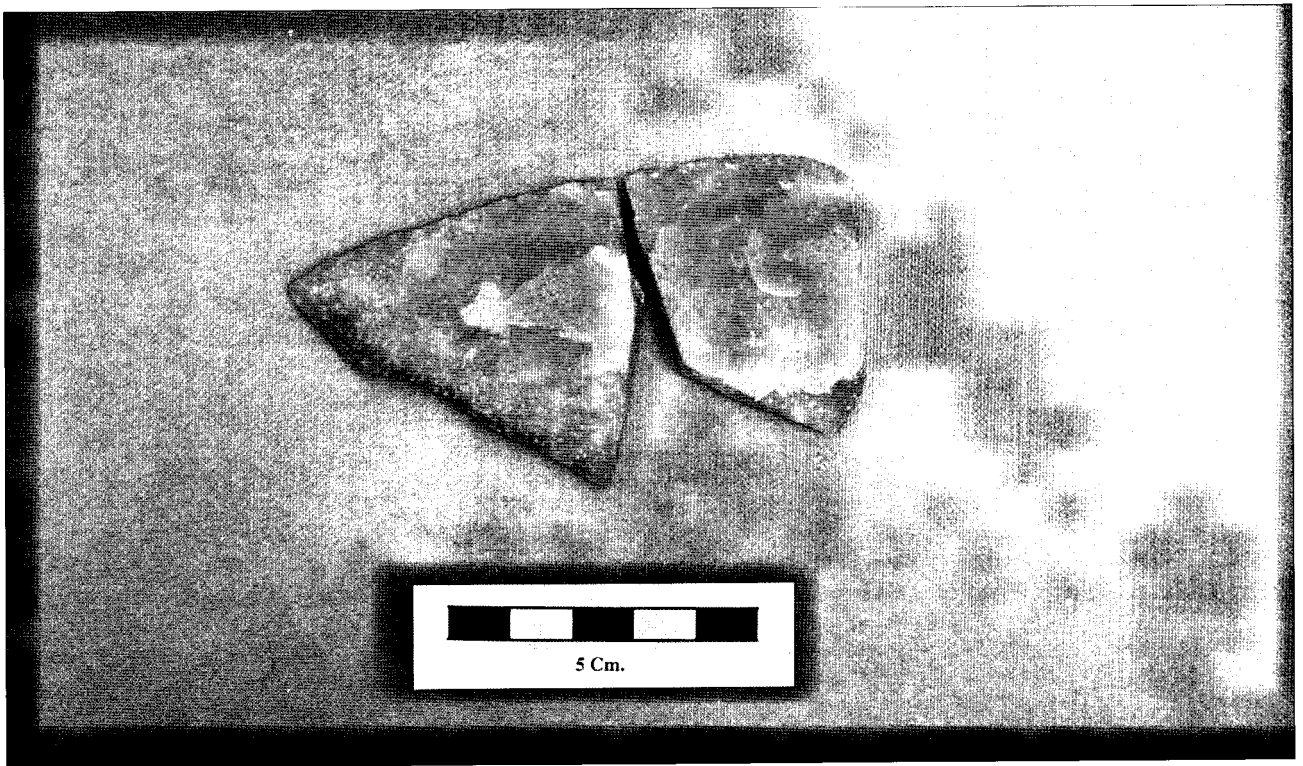


Plate 2. Possible flint dagger from Rumaitha Site RM 9

Stone Age period, which commenced in the United Arab Emirates around 5,500 BC. The seventh site, RM 9, yielded a very fine, but broken, large flint foliate of a type not previously published from South-eastern Arabia (Plate 2). Although the base of the foliate is missing, it has been interpreted as possibly being a flint dagger made as a decorative or ritual object, perhaps copied from a copper artefact during the early Bronze Age, or the late 4th millennium and early 3rd millennium BC, when copper artifacts were rare and highly prized (5). This period, too, preceded the formation of the *sabkha*. The absence of Late Islamic material in the Rumaitha area is somewhat surprising, since it is close to Shanayel. The failure to identify sites from this period may simply be due to the fact that only limited survey work has been carried out. Moreover, in the deeper sands that comprise the southern sector of the Rumaitha area, sites may have been obscured by sand movement. As noted above, the northern part of the Rumaitha area, where all but one of the sites of archaeological interest were identified, lies adjacent to the inner edge of the *sabkha*, and, therefore, close to what would have been the coast during the Late Stone Age and early Bronze Age. Moreover, both on *barqat* emerging from the *sabkha* (e.g. Barqat Rashid, Site RM-12), and on inter-dunal plains, there are extensive outcrops of natural tabular or nodular flint, suitable for the making of stone tools. Indeed some of the lithic material present appears to have been made of this locally-available material. It is suggested, therefore, that this part of what was formerly the coastal zone was utilised by the Late Stone Age population, for hunting or gathering, and, perhaps, for the pasturing of flocks. This period coincided with a 'climatic optimum' around 4,000 BC, or 6,000 years ago, with more rainfall than there is today. As is possibly suggested by the presence of the foliate referred to above, this type of occupation may have extended into the very beginning of the Bronze Age.

No shell middens or other evidence of the exploitation of marine resources has yet been identified in the northern part of the Rumaitha field, with the exception of a single, worn fragment of turtle carapace at Site RM 1. Midden sites are, however, well-known from islands such as Abu al-Abyadh (6), Marawah, Sir Bani Yas and Dalma (7), as well as on the inner edges of the coastal *sabkhas* in the Northern Emirates, such as at Jazirat al-Hamra, in Ra's al-Khaimah (8) and Sharjah (9). There is extensive movement of sand in the Rumaitha area, in contrast to the offshore islands and the Northern Emirates, and middens may well have been covered.

Thus the archaeological record from Shanayel and Rumaitha provides evidence – albeit somewhat scanty – of occupation, or at least an occasional presence, during the Late Stone Age, possibly extending into the early Bronze Age, and in the Late Islamic period, but nothing in between. This is consistent with patterns of occupation or human presence identified by ADIAS survey work throughout the desert zone of the Western Region of Abu Dhabi, between the inner edge of the *sabkha* to north of the Liwa Oasis. Of the fifty or so archaeological sites so far recognised by ADIAS in this broad area, only two can be securely dated to another period, the early to mid-Islamic period, and that only on the basis of less than half a dozen artifacts. Published data on other work in this area has also referred only to the presence of Late Stone Age and Late Islamic material (10).

While the area is large, covering several thousand square kilometres, and much has yet to be surveyed, the absence, thus far at least, of archaeological material from the Bronze Age and Iron Age, and from the Late pre-Islamic and Early to Mid-Islamic periods is striking.

The Dabb'iya area

The archaeological record from the Dabb'iya area, including both the Dabb'iya peninsula itself and the

adjacent islands, is markedly different.

The geography and geology of this area differs from that of Shanayel and Rumaitha. In essence, it comprises a number of islands, one of which, the Dabb'iya peninsula itself, is a tombolo which has prograded through *sabkha* formation until it has become joined to the outer edge of the coastal *sabkha* behind which Shanayel and Rumaitha lie. These islands are generally low-lying, rising two to three metres above current high water mark, and with extensive areas of near-*sabkha* lying just above high water mark. In some areas, mainly on the outer, western edges of the Dabb'iya peninsula, are a number of *qasasir* (sing. *Qassar*) or *zeugen*, rock outcrops that represent the eroded remnants of an earlier land surface, comprised of fossilised aeolianite capped by limestone. Such *qasasir* are also present in adjacent inter-tidal and shallow water areas. Around the edges of the *qasasir*, and elsewhere, a wave-cut platform provides evidence of a former higher sea level, about 80 cm. above that of today. Geological and geomorphological studies have suggested that this higher sea level occurred around 2,000 BC, thus roughly coinciding with the period when *sabkha* formation began (11).

To the north, the islands of the Dabb'iya area are bounded by the waters of the Arabian Gulf, while to the south, between them and the mainland, the deep channel of the Khor al-Bazm runs in from the west, (being called the Khor Qantur at its eastern end), and reaching the western *sabkha* fringes of the Dabb'iya peninsula. Although the peninsula is now linked by *sabkha* to the mainland, both the higher areas at the outer edge of the peninsula and the islands themselves would have been well offshore prior to the development of the *sabkha* and the associated slight fall in sea levels. Moreover, the relatively impassable nature of the *sabkha* itself, until the development of modern roads and tracks,

effectively rendered the area inaccessible, at least for much of the year, except by sea. It is within this geographical context that the archaeological sites of the Dabb'iya area must be viewed.

A total of 36 sites have currently been identified by ADIAS in the Dabb'iya area, including one that has been so heavily disturbed in recent years that no archaeological data can be determined. Of these sites, five are on the Dabb'iya peninsula and a *qassar* in the adjacent inter-tidal area, one on Bu Qirmah, 14 on Qusabi, two on Bu Sharah, 13 on the westernmost of the islands, Rufayq, and one on a low sandbank, presumed to be of relatively recent formation, on the southern edge of the Khor al-Bazm, to the south of Rufayq.

Most of the sites on the Dabb'iya peninsula, Bu Qirmah and Bu Sharah, as well as that on the sandbank (herein named Dy-17, after the oil well present there), can be dated with confidence to the Late Islamic period, being mainly small scatters near the coastline of Late Islamic ceramics, associated on occasion with mollusc shells (primarily of *Pinctada radiata*, the pearl oyster), and, on Bu Qirmah, with a small hearth. One site, on Bu Sharah, Site BS 2, is structural in nature, a small mosque built of local beach rock (*farush*), with its walls surviving to a height of around a metre. It lies on the south-east corner of the island, overlooking the sheltered waters of the Khor Qantur, and could have been approached easily by shallow draught boats. Now abandoned, the mosque is of a type also identified by ADIAS on several other offshore islands, including Marawah, Liffiyah and Sir Bani Yas (12), and it was probably formerly roofed with *'arish* material. Late Islamic ceramics was present nearby.

Also tentatively assigned a Late Islamic date, owing to the associated presence of ceramics from the period, as well as to its relatively good state of preservation, is an intricate water catchment system, Site DB 4, (*Arabic*



Plate 3. Hearth at Site QS 9

cover illustration), on the surface of a *qassar* in the inter-tidal area adjacent to the ADCO Dabb'iyā jetty. The system makes use both of the natural contours on the surface of the *qassar* and of small walls built of locally available stone to guide rainfall into a central depression which has been enlarged by excavation. While many water catchment features have been noted by ADIAS on the islands of Abu Dhabi, this one at Dabb'iyā is notable for the intricacy of its design. It has now been afforded protection by ADCO through the erection of a fence around the *qassar* and of a warning signboard.

On the edge of a small outcrop in the *sabkha* on the south-western side of the Dabb'iyā peninsula, and close to the inner end of the Khor Qantur, is Site DB 5, a raised mound with extensive evidence or charcoal, ash and burnt coral and *farush*. It is interpreted as a hearth, although in the absence of any associated ceramics or radiocarbon dating, no date can be assigned to the site. All of these sites, with the exception of DB 4, DB 5 and BS 2, are interpreted as providing evidence of occasional, perhaps single, use rather than of permanent or seasonal occupation.

While similar sites with small scatters of Late Islamic pottery and pearl oyster and other mollusc shells have also been identified on the remaining two islands, Qusabi and Rufayq, the remainder of the archaeological evidence from these islands presents a significantly different picture of occupation. To some extent this may be due to the fact that more archaeological survey work has been undertaken on these two islands. At the same time, however, it is of probable significance that although they, like the Dabb'iyā peninsula and the other islands, are low-lying, Rufayq and Qusabi do have areas that are of slightly higher elevation. Moreover, these two islands are more easily accessible by sea at all states of the tide. This is particularly true of Rufayq, whose western and north-western coast overlooks a khor that runs from the Gulf into the Khor al-Bazm, between the island and Abu al-Abyadh to the west, and whose southern shoreline overlooks the Khor al-Bazm proper.

Substantially more archaeological work has taken place on Rufayq than on Qusabi, (or indeed anywhere else in the Dabb'iyā area), and it is, therefore, appropriate to deal with this island first.

No evidence of a Late Stone Age presence has yet been noted on Rufayq or elsewhere in the Dabb'iyā area. It should, however, be noted that a single painted sherd of 'Ubaid pottery has been collected on the island of al-Aryam, immediately east of the Dabb'iyā peninsula, while Late Stone Age lithics and possible (unpainted) 'Ubaid period ceramics have been identified on Abu al-Abyadh, immediately to the west of Rufayq (13). A Late Stone Age presence in the area can, therefore, be deduced. At this period, prior to the formation of the *sabkhas* and at a time of slightly higher sea levels, Rufayq, al-Aryam and Abu al-Abyadh would have been well offshore. Whether or not the Late Stone Age visitors to the Rumaitha area were the same as those who visited the islands cannot be determined, and there is, of course, evidence of maritime commerce in the Gulf at this period, exemplified by the presence of the Ubaid sherds on al-Aryam, possibly Abu al-Abyadh, and, further to the west, on Marawah, Dalma and Ghagha (14).

The next period for which there is evidence of occupation is during the Bronze Age. At two locations on Rufayq, Site RU 2, on the inner edge of the inter-tidal and immediately supra-tidal area on the west coast, and Site

RU 5, on the top of a rocky platform overlooking the north-west coast, a number of stone-lined hearths or firepits have been identified, at least four at RU 2, and at least 23 at RU 5 (15). Similar fire-pits from the islands of Marawah, to the west, and Balghelam (to the north-east of Abu Dhabi island) have produced radiocarbon dates from around the end of the 3rd millennium BC and the beginning of the 2nd millennium BC (16), although this has not been the case with the four Rufayq hearths which have so far been subjected to testing (see below).

In the vicinity of both RU 2 and RU 5, however, ceramics were collected which have been identified as dating to the late 3rd millennium / early 2nd millennium BC period. These sherds, few in number, are early Dilmun period in style and manufacture, of the common red 'Barbar' ware. It has been suggested that these sherds, as well as the dated firepits from Marawah and Balghelam and similar ceramics from Balghelam, may represent evidence of way-stations that were used by the merchants of Dilmun (Bahrain) on their way down the Gulf (17), or, perhaps, merely of visiting fishermen. No other evidence of settlement or of associated tombs of this period has yet been identified in the Dabb'iyā area, although it is possible that some of the undated hearths at RU 5, from where the pottery was collected, may be of similar origin. During the course of study of these two sites, RU 2 and RU 5, charcoal and ash samples were excavated from four hearths, two from each site, for radiocarbon dating. Funding of the dating was undertaken by ADCO, as part of its programme of support for investigations into the archaeology of the field area. Although the associated ceramics were either Barbar ware or of more recent Late Islamic fabrics, the results of the radiocarbon dating provided evidence of occupation at a completely different period.

Three of the hearths, those of RU 2.2, RU 2.3 and RU 5.1, produced a range of dates that fit firmly into the UAE's Iron Age I/II period (1300 – 800 BC), while the fourth, RU 5.2, produced a date range into the Iron Age II/III period (1100 – 300 BC), and was, perhaps, a little later (18). Iron Age ceramics have been identified by ADIAS elsewhere on Balghelam, north-east of Abu Dhabi, and, closer to Dabb'iyā, Iron Age ceramics have been shown to ADIAS which are said to have come from the island of al-Aryam (19). An Iron Age site with both hearths and ceramics has been identified on the island of Ghanadha, north-east of Abu Dhabi (20), but the Iron Age dating of the Rufayq hearths was somewhat of a surprise, given the absence of ceramics of the same period.

Similar hearth structures, without associated ceramics of any period, have also been identified on both the west and east coasts of Qusabi (Sites QS 6, QS 9 [Plate 3] and QS 10). These have not been excavated and it is not possible, therefore, to assign a date to them.

A series of over fifteen radiocarbon dates have, however, been obtained from such hearth sites on, from east to west, Balghelam, Rufayq, Abu al-Abyadh and Marawah, dating from the end of the 3rd millennium BC into the Late Islamic period. It is possible that the Qusabi hearths, and other such sites, may date to anywhere within this lengthy timespan, although all of the ceramics so far studied from Qusabi can be ascribed a Late Islamic date, as is also probably the case with the coastal shell scatters on the north side of the island.

Ceramics from Rufayq Site RU 6, on the rocky coastal platform that also contains RU 5, included probable Late

pre-Islamic or early Islamic wares. Late pre-Islamic pottery has also been noted on the island of Abu al-Abyadh, to the west (21).

A little south of Sites RU 5 and RU 6, Site RU-3, on a shallow, but shelving, beach, contains an extensive scatter of shells of the pearl oyster *Pinctada radiata* and a widespread scatter of ceramics, as well as modern debris, indicating use until recently. Among artifacts recovered from the site were a cache of sixteen net weights, made of *farush*, (Plate 4), and a large metal anchor weight, indicating that fishing was among the occupations practiced from this site.

The majority of the ceramics are of typical Late Islamic wares, including Julfar ware from Ra's al-Khaimah, in the Northern Emirates. Among the assemblage are a few



Plate 4 Cache of net-weights from Rufayq Site RU 3

sherds that can be ascribed an earlier date, including two sherds dated to the 15th or 16th Centuries AD, at the beginning of the Late Islamic period (22). The range of ceramics at Site RU 3 covers a broader date range (from the 15th or 16th C. AD onwards) than any other site from the Middle or Late Islamic periods yet identified by ADIAS on the offshore islands of Abu Dhabi, with the exception of the permanent settlement on Dalma, far to the west. It is indicative of occupation, probably seasonal, over a lengthy period. No evidence of structures has yet been identified, while no Islamic graves have yet been found on Rufayq or on any of the other islands within the Dabb'iya area, with the exception of a single grave on Qusabi. There is, however, a small graveyard on the western side of the island of al-Aryam, site AR 4, immediately to the east of the Dabb'iya peninsula.

Other sites within the Dabb'iya area not previously mentioned, as well as on the Dy-17 islet, include scatters of shell and ceramics, often no more than a few shells (Plate 5) or sherds, that can be ascribed a Late Islamic date. While such sites can be found throughout the area,

mainly adjacent to the current coastline, there is a marked concentration, both in terms of the number of sites, and the number of shells or artifacts at each site, on Rufayq, which appears to have been the centre for seasonal occupation of these islands. Insofar as the Dabb'iya peninsula itself is concerned, it should be noted that there was a Late Islamic village, named Bu Khushaishah, on the western side of the island of al-Aryam, immediately to the east of the peninsula, and patterns of settlement and of resource exploitation in this eastern fringe of the Dabb'iya area was presumably focused around that settlement.

The Rufayq sites, also provide by far the greatest range of dates, with all other sites in the general Dabb'iya area being Late Islamic, except, possibly, for some or all of the hearths on Qusabi and Site DB 5 on the western edge of the *sabkhas* of the Dabb'iya peninsula.

It is reasonable to suggest that this evidence of occupation over a period of around 4,000 years, from the middle Bronze Age to the Late Islamic period, albeit apparently seasonal, is related to the greater ease of access by sea from the north-western and northern coastline of Rufayq. It should be noted, *inter alia*, that although no evidence of extensive settlement, or of water wells or water catchments, has been identified on Rufayq, such evidence has been found on Abu al-Abyadh, to the west, from where the pearl-divers and fishermen who used Rufayq presumably came, (23), as well as the small system at Site DB 4, close to the Dabb'iya jetty, and on al-Aryam, to the east (24).

The surveys and other work carried out by ADIAS in North East Abu Dhabi have produced useful information about the archaeology of this part of Abu Dhabi's coastal zone and the inshore islands. There appears to have been a degree of occupation during the Late Stone Age both onshore, on the inner edge of the current *sabkha* belt, and offshore, although, as noted, here data derives from islands immediately east and west of the Dabb'iya area, rather than in this area itself.

From the Middle Bronze Age onwards until the middle of the 20th Century, however, it is only the islands of the Dabb'iya area which have produced evidence of human activity. Although this may, in part, be due to the obscuring of sites inland by sand movement, or to the fact that survey work has not been evenly distributed, such a pattern is broadly consistent with the results obtained by ADIAS elsewhere on the coast and islands of the Emirate of Abu Dhabi.

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Plate 5. Pearl oyster
Pinctada radiata
shells on the north
coast of Rufayq