

Excavations on Balghelam Island — a preliminary report

by Salvatore Garfi

Introduction and Acknowledgements

This brief report is a summary of archaeological fieldwork carried out by the Abu Dhabi Islands Archaeological Survey (ADIAS) [1] on the island of Balghelam, north east of Abu Dhabi, between 20 January and 21 February 1996. Permission to work on the island was kindly granted and facilitated by its owner, Sheikh Surour bin Mohammed al Nahyan, Chamberlain of the Presidential Court of the United Arab Emirates and Chairman of the Abu Dhabi Water and Electricity Department.

The work described herein was undertaken as a direct result of a survey carried out in 1994 [2] by ADIAS which highlighted two areas of the south eastern part of the island as deserving further, more detailed archaeological investigation. These areas appeared to include evidence for water management on the island, and the remains of habitation sites. This report is only a preliminary synopsis of the fieldwork carried out in January and February this year. A more detailed archaeological report describing the results of the examination of the area showing evidence of water management will be compiled separately.

With the agreement of Sheikh Surour, a further short season of fieldwork will be undertaken on the habitation sites early in 1997, following which a detailed report on the two seasons of examination of this area will be compiled, this preliminary report being intended simply to give an introduction to the results.

The archaeological fieldwork was planned by Mr. Peter Hellyer, Co-ordinator of the Abu Dhabi Islands Archaeological Survey, and directed by Mr. Salvatore Garfi. Working with Mr. Garfi in the field were Messrs. Jakub Czastka and Alexander Wasse. Mr. Neil Ashcroft was loaned to the project by the Geodetic Engineering Department of the Abu Dhabi Company for Onshore Oil Operations (ADCO) to carry out a topographic survey of the eastern end of the island as part of the season's investigations. Labour for the excavations was provided by the workforce of the Abu Dhabi Municipality resident on Jazirat Balghelam.

Financial and logistic support was provided by a number of local companies and institutions, including ADCO, the Abu Dhabi National Oil Company for Distribution (ADNOC-FOD), British Petroleum, the Al Fahim Group, Dhahi Contracting, Ewbank Preece, the Abu Dhabi Hilton, Emirates Insurance Company, Al Wimpey laboratories and Emirates PhotoMarketing (Kodak).

Above all, the Abu Dhabi Islands Archaeological Survey wishes to thank Sheikh Surour, owner of Jazirat Balghelam, for his kindness in supporting and facilitating this fieldwork, and for his keen interest in the archaeology of the United Arab Emirates. Thanks are also due to his Private Office and to Mr. Martin Corrado, with whom we liaised throughout the duration of our stay on the island.

The Fieldwork Aims

The aims of this year's fieldwork, in accordance with the

— تقرير موجز عن أعمال التنقيب التي تمت في بداية ١٩٩٥ بواسطة بعثة مسح الآثار بجزر أبوظبي، والتي تمت على مواقع الآثار الإسلامية بجزيرة بلغليم في شمال شرق أبوظبي.

objectives of the project proposal submitted to Sheikh Surour in October 1995 [3], were: 1) to continue the archaeological survey of Jazirat Balghelam, carried out in 1994, by identifying sites in those areas of the island not previously assessed; 2) to undertake archaeological excavations in at least two areas earmarked as a result of the fieldwork in 1994 as being worthy of further, detailed investigation, [4]; and 3) to prepare a topographic map of the archaeological features visible on the eastern end of the island, wherein the areas selected for excavation are located.

The Survey

In the 1994 survey 11 'sites' or archaeological features or groups of features were noted and described. They were given sequential numbers with the prefix 'BG,' designating the island of Balghelam, and they were listed and described in the report submitted to Sheikh Surour in January 1995 by Peter Hellyer *et al.* In this year's fieldwork, a further 10 sites were located, all of which were occupation areas or oyster shell middens, primarily along the northern and southern coasts of the island, and to the east of the headland of Ras Yah. From pottery identified on the new sites, which included imported Persian glazed wares dated to the Seventeenth or Eighteenth Centuries AD, all were comparable in date with the Late Islamic occupation previously identified. The newly identified sites will be described in detail in the fuller reports to be compiled upon completion of the short second field season, while details of Sites BG-1 to BG-11, summarised from the 1994 survey report, are attached to this Report as an *Appendix*.

The Excavations

The 1994 preliminary survey had brought to light three particular areas or features worthy of archaeological excavation. They were a presumed settlement or 'village' at site BG-6, made up of substantial sub-circular sand and stone mounds outlining depressions, with a visible well and probable water catchment system at their northern limit. To the immediate south and east of these features, and still recorded as part of BG-6, there was an area of hearths and low mounds.

After excavations were undertaken in these areas, a further area was selected for excavation at Site BG-5, more than 75 metres to the north east. Site BG-5 consisted of hearths and low mounds positioned above a relict shoreline. [5].

One of the surprises of this year's fieldwork was the realisation that the presumed settlement site made up of sand and stone mounds was not a small 'village' or cluster of simple stone structures, as was postulated during the 1994 survey, but was, instead, a well field of probably more than 11 wells. In fact the well still visible at the northern limit of the sand and stone mounds adjacent to the track, which had initially drawn attention to the site, was probably the very last well in use on Balghelam prior to the immediate past.

Site BG-6: The Well Field

The well field covers an area of circa 30 m. E-W by 40 m. N-S, and lies immediately south of the track running from East to West along the southern limit of the island. The irregular mounds of sand and sandstone which make up the site can reach a height of approximately 1 metre above the present ground surface, and appear to outline shallow depressions. At the northwestern limit of these mounds, there is a slightly curved drystone alignment of stones which strikes out in an approximately north west direction for 70 m.

After the heavy rains of January 1996, it was confirmed that this stone delineation was a very effective water retaining wall, as was presumed to be the case during the 1994 survey. Water collected in a pool on the slightly sloping ground to the north of the well site, where it soaked into the ground or partially drained into the one clearly visible, though filled in, well on the site.

The well field was explored through the excavation of three trenches, or excavation areas, referred to as Areas (or trenches) I, II and III.

Area (or trench) I was excavated in two stages. First, a north to south 2 x 20 m. trench was laid out along the eastern limit of the sand and sandstone rubble mounds. It was difficult to make out features in this initial limited excavation area, so the trench was widened to the west by 3 m. to a width of 5 m. By widening the trench, it became evident by the end of the excavation that the mounds of sand and rubble which made up the surface remains on the site were, in fact, spoil heaps from the repeated clearing out and re-digging of the wells. Five wells were excavated in the trench, but none of them were cleared to their full depth, since most of them were heavily undercut, making them unsafe. The diameter of the tops of the wells varied from 0.8 m. to more than 4 m. in diameter.

The largest well was located at the southern end of the trench, where water was reached at a depth of 3 m. from the present ground surface. Repeated clearing and re-digging of the wells was probably responsible for the various well diameters recorded. The local sandstone bedrock is very soft, but its top 10 to 30 cms. is quite hard and crystalline. It is quite likely that whenever wells needed to be cleaned out, to remove drift sand, for example, it would have been very easy to dig into the soft mass of sandstone making up the wells' sides, thus leaving an overhanging ledge of hard crystalline sandstone which would subsequently collapse either from its own weight or from the activities of people lifting water from the wells. The collapsed crystalline sandstone would then break into pieces into the wells, which in turn had to be cleared out, thus adding sandstone rubble to the accumulating sand mounds making up the surface features of the site. In fact, the excavating of

Area (trench) III exposed a collapsed well which illustrated this phenomenon clearly.

Area (trench) II was laid out to 2.5 x 3.0 m. so as to excavate the one well visible on the site at the start of the fieldwork in January. The diameter of the well at its top is less than 1m and it was excavated only to a depth of roughly 3 m. its sides were irregular, showing signs of being re-cut and cleaned out.

Area (trench) III was laid out to the west of both Areas I and II. This was an exploratory trench, only 1.2 m. wide and 4.7 m. long, positioned approximately east to west across a ring of sand and sandstone rubble, and through the depression in the middle. The sole aim of this trench was to acquire an illustrative section through a relatively large well, which it successfully did. The well exposed had a diameter of 3.25 m. and had obviously collapsed. It was afterwards filled by drift sand, but was subsequently re-excavated with a diameter of 1.7 m.

Between Areas I, II and III, a total of seven wells were excavated. When added to the additional four depressions visible amongst the sand and rubble mounds on the site, this puts the number of wells on the site as at least eleven. Very little dating evidence came to light during the excavations of these wells, but two potsherds, both from deposits sealing wells in Areas I & III are datable to the 18th or 19th Centuries AD. This means that substantial well digging and maintenance is likely to have taken place on the island of Balghelam prior to this period, as well as during it, and, to some extent, into this century.

Site BG-6, The Hearths and Low Mounds:

There is a swathe of hearths and low mounds which begins directly to the east of Area (trench) I, extending more than 30 m. to the south, and spreading to the west for over 250 m. This swathe of features is positioned over what appears to be a relict shoreline and consists of small stone-lined rectangular hearths, simple circular hearths, pottery and shell scatters in the far west of the swathe and low mounds [6]. Similar spreads of features have been observed on almost all of the Abu Dhabi islands surveyed by ADIAS over the last few years. Their ubiquitousness was the reason for their inclusion in the season of fieldwork, while they will also be the focus of fieldwork during the short season in early 1997.

An area directly south of Area I was initially selected, consisting of three hearths and a relative concentration of sandstone fragments. A second area under 25 m. to the east was also selected which included a low stony mound. These areas were numbered Area IV and Area V respectively.

Area (trench) IV was laid out on an east-west axis, perpendicular to, and 30 m. south of, Area 1. Its overall dimensions were 9 m. E-W with a maximum of 7m N-S. On the compacted desert surface in this area, three hearths were visible as well as a spread of sandstone fragments. The surface of the ground around these features was trowelled to see if there were any remains of past 'occupation' surfaces, but none were visible. The only remnants of occupation were the hearths and stone fragments themselves.

Two of the hearths were rectangular. The northernmost of the three was 0.9 x 0.5 m., stone lined with vertical slabs 5 to 8 cms. thick and cut into the surrounding nat-

ural deposits by 0.37 m.. Approximately 5 m. south-southeast from this hearth was another rectangular hearth, 0.7 x 0.6 m., again lined with vertical stone slabs, but only cut into the earth to a depth of 0.2 m., and lined at the bottom by stones which were blackened by fire. Less than 2 m. to the northeast of this second rectangular hearth was a small circular hearth with no stone lining. It was 0.8 m. in diameter and approximately 0.1 m. deep. It seems that this last hearth was literally scooped out of the compacted desert surface, as opposed to being squarely cut out and lined, as had been the other two hearths. Such a hearth was described as 'ephemeral' by the 1994 survey [7].

Approximately 4 m. to the east of these hearths was a tumble of sandstone rubble, measuring 2.0 m. N-S and 1.5 m. E-W, and appearing vaguely semi-circular with an opening to the east. Upon excavating a windblown deposit from around the rubble, it seems that the stones could have been part of a crude stone barrier around a slight depression, probably caused by people occupying the feature and using it as a windbreak.

Area V was a 5 x 5 m. square laid out 23 m. due east of Area I. It was positioned so as to surround a low stone mound 3.5 to 5 m. in diameter, which was one of three mounds east and southeast of Area I. The top of the mound, only 18 cms. above the surrounding ground, was covered by an insubstantial concentration of sandstone fragments. Upon removing these, however, and trowelling away the desert surface, it became clearly evident that there was a stone-lined pit in the centre of the mound.

The pit was sub-rectangular in shape, 1.1 m. E-W by 1.4 m. N-S, 0.60 m. deep, and lined with sandstone slabs of various sizes, 8 to 15 cms. thick. The bottom of the pit had a stony, sandy fill which was mixed with much carbon, and the slabs making up the side of the pit had experienced extensive burning.

Around the feature was an accumulation of sand mixed with carbon. One of the strata making up this accumulation of material was a deposit of small gastropods. This feature has been interpreted as a large hearth, but its precise nature and use cannot be determined at present.

Site BG-5, Further Hearths and Low Mounds

Site BG-5 has been summarily described by the 1994 survey, (see *infra*, p. 9). It consists of a further swathe of hearths and low-lying mounds extending northwards, for all intents and purposes, from Area V in site BG-6 to an area cleared for falcon trapping which is approximately 200 m. north-northeast of site BG-6.

Two areas were investigated in site BG-5, Area VI, more than 10 x 15 m. in area, and Area VII, approximately 5 x 5 m. square, around 30 m. north of Area VI. These two areas were opened up during the last week of the first field season on Balghelam, when it was considered prudent that more of the hearths and mounds present in this general, southeast part of the island be investigated.

Area VI was only partially excavated. The rest of the area, however, was trowelled and clearly revealed a total of eight hearths or fireplaces. Seven of the eight seem to be stone-lined, with three of these appearing to be rectangular or sub-rectangular in plan. It is also quite

likely that one of these could be similar to the deep hearth excavated in Area V.

Spreads of sand mixed with burnt material (carbon) are associated with some of the hearths, one of which had eggshell fragments in its fill. A striking feature of the hearths is that they seem to be grouped in pairs, except for one at the northern extent of the area, and one of the hearths of one pair which is juxtaposed with a third, smaller hearth. The smallest of the hearths is 0.4 m. in diameter, while the largest could have a maximum width of 1 m.

A small excavation was carried out along the eastern limit of Area VI where two probable wall alignments, under 1 m. apart, were visible on the ground surface. Upon excavation, a third wall fragment was revealed, equidistant between the two. The lengths of these three wall fragments are no longer than 2.6 m., and are in a roughly north-south alignment.

They overlie a 'soil-like' deposit which was filled with many deteriorating potsherds (probably due to a high salt content in the ground) with no diagnostic features, although one with finger-impressed decoration can probably be dated to within the Late Islamic Period (i.e. the 15th to 19th Centuries). About 2 m. north of these wall alignments there is what seems to be a dump of small gastropods over a sandy deposit mixed with ash.

Around 30 m. to the north of Area VI is the last area which was investigated during this season of fieldwork, Area VII. This area was laid out so that a mound very similar to that in Area V could be investigated.

Upon trowelling clean the desert surface of the area, the outline of a large, roughly circular stone-lined pit was visible. Upon excavation, its diameter was 1.3 m. and depth 0.5 m.

Its fill was made up of sand overlying a highly burnt deposit, while the sides of the hearth also showed extensive signs of burning, as was the case with the hearth in Area V.

The size of these hearths complicates their interpretation, and at present, it is possible only to make guesses as to their purpose [8].

Conclusion

As stated at the beginning of this preliminary report, the foregoing is only a summary or synopsis of the January and February 1996 fieldwork undertaken on Jazirat Balghelam by the Abu Dhabi Islands Archaeological Survey. A further season of work will take place early in 1997. In all probability, none of the recorded and excavated features pre-date the Late Islamic Period, but the ubiquitousness of the hearths, including the mounds, and the shell middens noted in the survey of 1994 and in this year, as well as the well field of at least eleven wells, with the associated water catchment feature, indicate that Balghelam was by no means a barren island from around the Sixteenth Century onwards. The features excavated and recorded suggest, indeed, a continual presence of people on the island. This is in keeping with other findings by ADIAS on other islands off the coast of Abu Dhabi, both close inshore, like Balghelam, and further out, where similar remains of human occupation have been observed that are believed provisionally believed to date from prehistoric times until the Late Islamic period.

The absence of finds on Balghelam which clearly pre-date this Late Islamic period has yet to be explained by archaeological investigation, although, in view of the extent of earlier occupation on a number of other islands, particularly to the west of Abu Dhabi island, as well as evidence of occupation during the early centuries of the First Millennium AD at Ras Bilyaryar in the Sheleala area, not far from Balghelam, it is likely that Balghelam was also used during this period.

The findings of the season on Balghelam add to a picture that is slowly emerging which suggests that the islands of Abu Dhabi make up a land-and-sea-scape wherein people in the pre-modern period exploited and managed the available marine and terrestrial resources in either fixed settlements or seasonal campsites. These were probably centred on water procurement sites like the well field on Balghelam, which could have served not only Balghelam itself but other nearby islands. Such well fields would have been as important to island communities as oases and well sites would have been to desert pastoralists, and it is worth noting that evidence of other water procurement sites has been identified on a number of other islands relatively nearby, such as Futaisi and Bu Khushaishah.

The excavations on Balghelam have been of considerable importance in the overall scheme of the fieldwork carried out by ADIAS since 1992. They have allowed us to examine in more detail certain types of features which are visible on most of the Abu Dhabi islands visited by the survey, and have helped in their interpretation. The short further season of fieldwork on Balghelam in early 1997 should permit ADIAS to make further sense of the features so far recorded, and to see whether their spatial and temporal distribution can shed light on the way of life of the past inhabitants of Abu Dhabi's coast and islands.

As stated earlier, more detailed excavation and survey reports will be submitted subsequently after completion of the second short excavation season. These will be in two parts, the first covering the well field site, and the second the results of the excavations of the hearths and low mounds on Sites BG-5 and BG-6, together with the results of the further survey, both being illustrated.

APPENDIX

Preliminary Gazetteer of Sites

Summary of sites identified during initial survey visits to Balghelam in 1994, and initially described in Hellyer, P., Czastka, J. & Aspinall, S. (January 1995) *An Introduction to the Archaeology and Natural History of Jazirat Balghelam*.

BG-1 : Site 1: Open Mosque

GPS Co-ordinate: 40R 02 - 53 - 666 E
27 - 19 - 141N

Immediately to the west of the causeway linking Jazirat Balghelam with Jazirat Umm Al Barak, a sandy track turns south along the eastern edge of Balghelam. Approximately 75 metres along the track, at the apex of a point where it divides into two, are three vertically inserted slabs of beach rock, abutting each other, and aligned with a slight curve. They stand to a maximum height of 0.7 metres. These possibly represent the remains of a *qibla* wall or roofless mosque.

BG-2 : Site Two : Raised Circular Mound and Stone Wall

GPS Co-ordinate as above.

Lying 31 metres west of the ?mosque is a cluster of several features in an area of low sandy terrain, with bedrock outcropping in places. First is a raised circular mound, 4.0 metres in diameter, consisting of shelly sand and sandstone rubble. Adjoining the mound on its north side is a single course drystone wall, running approximately 11 metres on a north-south alignment.

BG-3 : Site 3: Rectangular Hearths

GPS Co-ordinate as above.

Approximately 70 - 75 metres south west of the ?mosque, are a cluster of four rectangular hearths and several possible raised mounds. A small amount of Late Islamic pottery, mainly of a red coarse ware and a dark brown coarse ware, was found on the surface nearby, although it was not necessarily associated with the features. Prior to commencement of the January/February 1996 excavations, at least three further rectangular hearths were located in this area, two of which lay below the raised shoreline, suggesting that they were perhaps of later date than those on higher ground.

BG-4: Site 4: Raised Circular Mound and Pottery Scatter

GPS Co-ordinate: 40 R 02 - 53 - 767E
27 - 18 - 372N

Situated in a sandy area on the south west of the island, overlooking a very shallow inlet, is a raised circular mound, approximately 7.0 metres in diameter, composed of shelly sand, and standing between 0.4 to 0.5 metres above the surrounding surface. The top of the mound has a (falcon?) perch, consisting of 10-12 sandstone fragments, standing to a maximum height of 0.35 metres. On the west side are several areas of dark grey discolouration of the natural shelly sand, representing ash residues. At the northwestern edge of the mound is a roughly rectangular feature.

Approximately ten metres south of the mound is a localised pottery scatter. The pottery consists of 10 sherds of dark reddish brown Late Islamic ware, probably the remains of a single pot.

BG-5 : Site 5: Raised Shoreline with Associated Archaeology

GPS Co-ordinate: 40 R 02 - 53 - 655E
27 - 18 - 571N

(Partially excavated: January/February 1996)

Taking the route along the coastal track from the Open Mosque, (Site BG-1, above), and approximately 75 metres north east of the Well and Settlement Area, (Site BG-6, below), near the southern coastline of Balghelam is an area of raised bedrock approximately 2.0 to 3.0 metres above sea level, the edge of which is orientated along a rough north-south line, taking a sharp right at its southern extremity, about 30 metres inland from the coastline, to run east-west (see Site BG-6).

Taking the north-south line, the outcrop runs for some 240 metres, and is visible as a discontinuous line of sandstone rubble. At its northern end, the area has been cleared, for the placing of a spring trap to catch falcons. This area contains several dark grey patches and scatters of disturbed stones, the remains of former hearth structures. The features located on the ridge in-

cluded 26 rectangular hearth features, 5 ephemeral hearth features, seven raised circular mounds and four pottery scatters.

The rectangular features range in size from about 0.7 metres by 0.5 metres to 1.5 by 1.0 metres and are comprised of vertically inserted slabs of sandstone. The 'ephemeral' hearth features consist of localised concentrations of sandstone fragments, averaging 0.7 metres in diameter. Superficial surface scrape of these features reveals grey ashy deposits. The raised circular mounds are composed of sandstone rubble mixed with wind-blown sand. They average 2 to 3 metres in diameter and are 0.3 to 0.4 metres above the surrounding ground level. The pottery scatters are primarily localised concentrations of coarse red ware or buff olive-green ware, of presumed Late Islamic date.

As well as the features mentioned above, an isolated example of what could possibly be a water catchment system was located, composed of two drystone rubble walls inclined at angles into a series of gullies, with a third wall found some 15 metres 'downstream' of the other two.

BG-6: Site 6: Well field and settlement

GPS Co-ordinates: 40 R 02 - 53 - 432E (Well Site)
27 - 18 - 476N
40 R 02 - 53 - 425E (SE Point of Settlement)
27 - 18 - 476N

(Partially excavated: January/February 1996)

The main settlement area on Balghelam identified during survey lies close to the southern coast of the island, stretching from the beginning of the mangrove-fringed low tidal lagoon at the eastern end to a point where the coastline turns roughly south-westwards. Inland of, but parallel to, the present-day coastline is a slightly higher ridge, an extension of that mentioned above, (Site BG-5).

Approximately 400 metres west of the settlement site, the low line of coastal dunes is interrupted, and there is evidence of a former inlet, now largely *sabkha*, the entrance of which, judging by the presence of flotsam, is occasionally flooded at extreme high tides. A small portion of the site lies beyond the inlet.

As well as the archaeology described below, there are some half-dozen raised circular mounds immediately to the east of the *sabkha*-filled inlet mentioned above and to the south of the track. These features are mentioned here for the sake of completeness, but have not been recorded precisely.

The archaeology present on the Settlement Site can be divided into three categories.

A: Well field

B: Pottery, Hearths and Shell Scatters

C: Raised Circular Mounds, Rectangular Hearths and 'Ephemeral Hearths.'

Each category is discussed separately below.

A: Well Field (GPS 1 & 2)

Initially identified (Hellyer *et al.*, [1995]), as a possible settlement with a well, this area has been identified as a well field, following the early 1996 excavations. (See excavation report, above).

B: Pottery, Hearths and Shell Scatters (GPS as above)

Although the area of the 'Well Field' is largely devoid of artefact scatters, the area running 250 metres to the west and south-west has an abundance of pottery, and also hearths and shell scatters, many in association with each other, the main concentrations of which are found on the edge of the outcrop of bedrock where it abuts the present-day coastline.

The hearths differ in form from the rectangular ones found in association with the raised shoreline, (Site BG-5), or in the immediate locality surrounding the well field. They are more 'evanescent' in nature, consisting of roughly circular alignments of rocks, on average 0.7 to 1.0 metres in diameter. Some four such hearths were found, all in association with pottery and shell scatters.

The pottery is characteristic of the Late Islamic period, consisting principally of unglazed wares, and is of four main types: a coarse red ware, a coarse red ware with black body fabric, (including the 'Julfar-type'); buff olive-green ware, and lightly-glazed green-brown ware. Fourteen localised scatters of pottery were found, many of them alongside both hearths and shells, the latter dominated by one species, Oyster, *Pinctada radiata*, although *Terebralia sp.* and gastropods were also noted.

C: Raised Circular Mounds, Rectangular Hearths and 'Ephemeral' hearths, (GPS as above).

Adjacent to the Well Field two, possibly three, raised circular mounds were located, 12 rectangular hearths and six 'ephemeral' hearths.

BG-7: Site 7: Shell and Pottery Scatter

GPS Co-ordinate : none available

Along the beach running immediately west from the Ras Yah headland, two small scatters of shell, mainly Oyster, *Pinctada radiata*, were noted. Several further small scatters were noted up to thirty metres inland. In association with the shell scatters inland were numerous sherds of Late Islamic pottery, including a red-brown coarse ware and a finer buff ware.

BG-8: Site 8: Graveyard

GPS Co-ordinate: 40 R 02 - 53 - 099E
27 - 19 - 284N

Immediately inland of the track running along the north side of Jazirat Balghelam, and approximately half way between the Ras Yah guesthouse and the causeway to Umm Al Barak, is an Islamic cemetery containing six graves. The two to the west were better preserved, showing headstones and footstones, and an outline around the edge. The other four graves, although no longer so well preserved, were also clearly distinguishable.

BG-9: Site 9: Shell, Pottery and 'Ephemeral' Hearths

GPS Co-ordinate as above

Immediately inland from the cemetery, and also stretching along the edge of the track towards Umm Al Barak for a distance of approximately 200 metres was a scatter of coarse red ware and coarse brown ware sherds. Dark grey discolourations of the sand - the location of simple ephemeral fireplaces - were visible close by.

Adjacent to the track, between the cemetery and the causeway, are at least three separate small scatters of pearl oyster *Pinctada radiata*, shells, as well as clams and other shells, including gastropods.

BG-10 : Site 10: Raised Circular Mounds and Rectangular Hearths

GPS Co-ordinate: as above

Approximately forty metres south west of the western end of the Cemetery is a scattered group of at least four features , including a collapsed circular mound and three disturbed rectangular features, possibly hearths. All are located close to an outcrop of sandstone that may represent a relict shoreline, (as is the case with Site BG-5, for example).

BG-11: Site 11: Rectangular Hearth

GPS Co-ordinate: not available

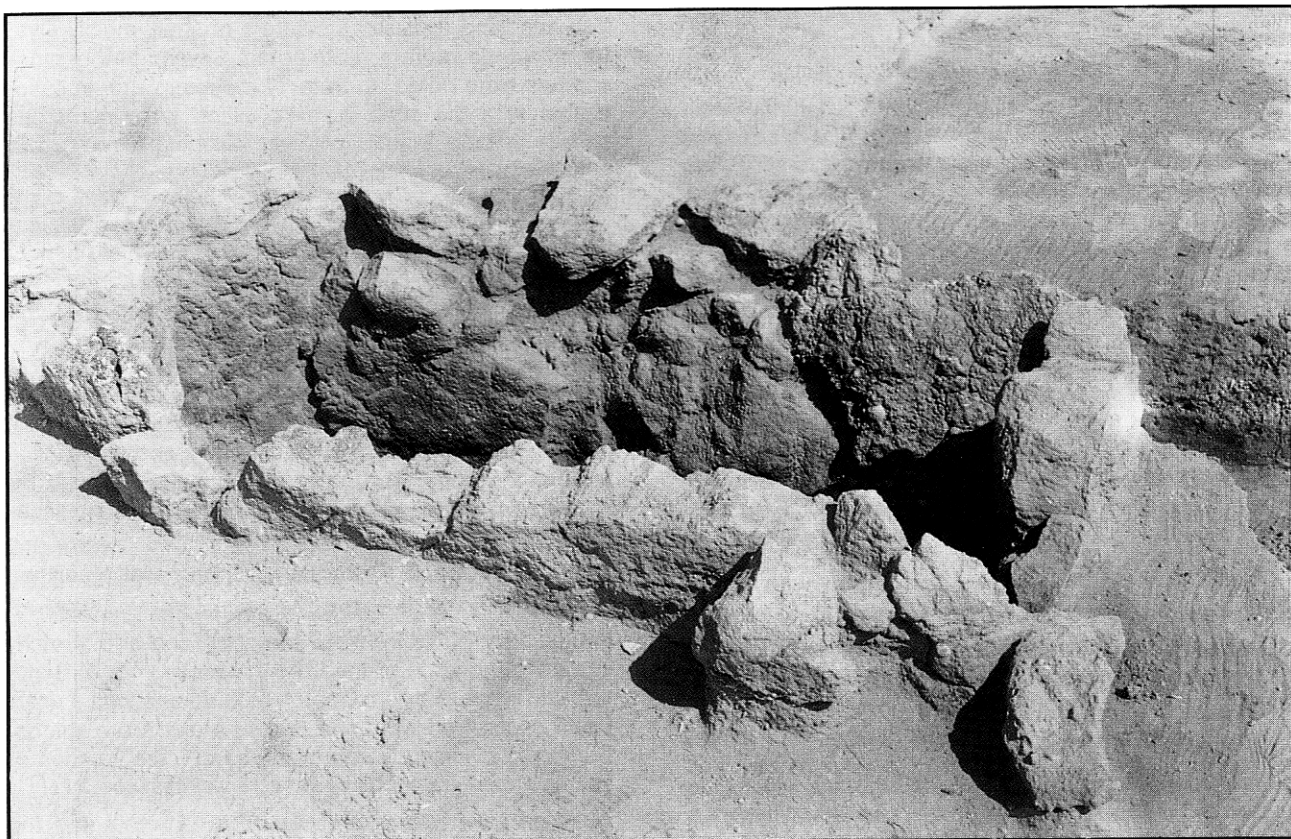
On the central part of the higher ridge running to the western tip of the island at Ras Balghelam, roughly opposite the Ladies' Resthouse, a rectangular hearth, of single slabs of beach-rock was noted and photographed in 1993, but has not subsequently been re-examined.

1. The Abu Dhabi Islands Archaeological Survey was established on the instructions of President His Highness Sheikh Zayed bin Sultan al Nahyan in 1992, and operates under the patronage of His Highness Sheikh Mohammed bin Zayed al Nahyan. It is directed by Dr. G.R.D. King of the Department of Art and Archaeology of the School of Oriental and African Studies, University of London; its Co-ordinator is Mr. Peter Hellyer.
2. Hellyer, P., Czastka, J. and Aspinall, S. (January 1995), *An Introduction to the Archaeology and Natural History of Jazi-*

rat Balghelam, Abu Dhabi, UAE. A report to HH Sheikh Surour bin Mohammed al Nahyan. The Abu Dhabi Islands Archaeological Survey Project and the National Avian Research Centre.

3. Hellyer, P. (October 1995), A proposal for detailed survey and excavation of archaeological sites on the island of Balghelam, Abu Dhabi. Presented to HH Sheikh Surour bin Mohammed al Nahyan. Abu Dhabi Islands Archaeological Survey Project.
4. *ibid.* p. 1
5. Geographical Positioning System (GPS) co-ordinates for these sites are: Site BG-5: (40R) 02 53 665 E, 27 18 571N; and for Site BG-6: (40 R) 02 53 432E, 27 18 476 N, taken at the site of the visible well to the north of the presumed settlement or 'village,' and (40 R) 02 53 425 E, 27 18 476 N, taken at the apparent South East limit of the 'village.' These GPS readings were taken in 1994 with a hand-held Magellan 1000 Global Positioning System, which has an accuracy of only 70 - 80 metres. These readings are therefore only rough indications of location. An initial description of these sites can be found in Hellyer, P. *et al.*, (January 1995), *Op. cit.* pp.6-9., while a summary is included as an Appendix to this report.
6. *ibid.*, pp. 7-9
7. Hellyer, P. (October 1995), *Op.cit.* p.1

Salvatore Garfi, BA MAAIS MIFA
Abu Dhabi Islands Archaeological Survey,
P.O.Box 45553, Abu Dhabi, U.A.E.



An excavated hearth on Balghelam. — Picture ADIAS