

Abu Dhabi Islands Archaeological Survey Project

PATRON : H. H. SHEIKH MOHAMMED BIN ZAYED AL NAHYAN

1998-1999 Season

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The end of another productive season: more sites, more finds, more dates

The latest ADIAS field season drew to a close earlier this month, with the departure of our last team member. Fieldwork commenced in early November, with surveys in the Jebel Dhanna and Dabb'iya areas for our sponsor, the Abu Dhabi Company for Onshore Oil Operations, ADCO, and ADIAS has had people out in the field for virtually the whole of the last seven months, making it one of the most active and diversified seasons to date since we began in 1992.

Work has taken place on Balghelam and Merawah islands, and in extensive areas on the coast and inland, while inspection visits have also been paid to previously identified sites on Sir Bani Yas. and Dalma, the latter producing an interesting new find.

Some of the work earlier in the winter has been briefly reported upon in the two previous issues of this season's *Occasional Newsletter*, and summaries of some of the more recent fieldwork follow.

Also worthy of note has been the results now being obtained from Carbon 14 dating of material collected in previous seasons and from the examination of some of our other finds, while the programme of publications and lectures by ADIAS team members has helped to bring the results of our work to the attention of the academic community as well as to the wider public, both here and overseas.

As usual, we would not have been able to carry out our work without the support of our sponsors. In particular, it is appropriate that we should extend an end-of-season thanks to our Patron, His Highness Sheikh Mohammed bin

Zayed Al Nahyan, for permitting us to continue work on Merawah, (which is producing an increasingly interesting and varied group of sites), and to His Excellency Sheikh Surour bin Mohammed Al Nahyan, for allowing us to collect further material from the island of Balghelam for C14 dating.

Among our commercial sponsors, we also wish to express particular thanks to ADCO, which not only facilitated survey work throughout its major field areas, but also provided a variety of logistics and other support that was of substantial benefit to much of our other work over the last few months. It is pleasing that, in return, we were able to identify within ADCO's operational areas the UAE's first known sulphur mine, at Jebel Dhanna, a previously unrecorded island settlement site on Rufayq and two major desert campsites near the Sahil oilfield, as well as other new sites.

We were particularly pleased to be asked by ADCO to offer assistance in the implementation of its environmental protection policy (which includes archaeological sites), and look forward to being able to do the same for other companies and institutions.

Finally, the season has also seen a further development of our relationship with the Environmental Research and Wildlife Development Agency, ERWDA, with whom we are now collaborating on the building up of a computer database.

Studies on our finds, in particular the Late Islamic pottery, will be continuing over the summer as we prepare for the next winter season to take us into the new millennium.

Issued by the Abu Dhabi Islands Archaeological Survey Project, P.O Box 45553, Abu Dhabi, UAE.

Tel: (9712)-346501 & 480840. Telefax: (9712)-393143. E-mail: phellyer@emirates.net.ae

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Dalma yields oldest date stones ever found in Arabia

The results of radiocarbon dating of two date stones found by ADIAS on Dalma has shown that they are the oldest ever found in Arabia, we were delighted to announce recently. The results suggested that one date stone can be dated to 4670 (+/-130) BC, and the other to 5110 (+/-160) BC, that is about 6,500 - 7,000 years ago.

The dating was carried out at the University of Arizona working in collaboration with the Scottish Universities Research and Reactor Centre radiocarbon laboratory at the University of Glasgow, in Scotland.

Both date stones, together with impressions of date stones on fragments of mudbrick, were recovered during excavations on a site in the compound of the Abu Dhabi Women's Association branch on Dalma, where ADIAS has been working for several years. They were identified during the course of work organised in early 1998 with the support of Minister of Information and Culture His Highness Sheikh Abdulla bin Zayed Al Nahyan.

The two Dalma date stones represent the oldest radiometrically dated evidence yet available for the consumption of dates within the Gulf region, as well as probably some of the earliest evidence of the date palm found anywhere in the whole of the Middle East.

Previously, the earliest evidence for date palm remains in the UAE was excavated from the Hili 8 site in Al Ain, dated to around 3,000 BC. The Dalma date stones are at least 1,500 years, and perhaps over 2,000 years older.

"The two Dalma date stones represent some of the earliest remains of date consumption found within the entire Middle East. Although it cannot be determined if they represent wild or cultivated dates, they certainly confirm that dates were being consumed at this early time," according to Mark Beech, the ADIAS environmental archaeologist.

Other finds from the Dalma site include at least two round house-like structures with surviving post-holes and floors, one of which is at least 7 metres in diameter. There are also small quantities of imported painted pottery from the 'Ubaid culture of southern Mesopotamia. Since Dalma was almost certainly an island at the time, the 'Ubaid pottery must have made at least part of its journey by sea, offering us the first confirmed evidence of the maritime

trading connections of the people of the Emirates.

Large quantities of what appear to be locally made gypsum plaster vessels have also found, of a type not known anywhere else in the Middle East. During an inspection visit to the Dalma site at the end of March, a large fragment of one of these vessels was found which is the most complete vessel of this period ever identified in the Emirates.

The Dalma site has also yielded thousands of flint flakes and a number of stone tools; other finds included ornamental beads, and huge quantities of food debris in the form of marine shells and animal and fish bones.

ADIAS Director Dr. Geoffrey King notes that "The archaeological evidence from Dalma shows that 7,000 years ago, the people of Dalma were already importing pottery by sea from Mesopotamia. They were making vessels of gypsum of a type not known anywhere else in the region, and were already keeping domestic animals. This latest discovery, the earliest evidence yet found for the eating of dates in the whole of Arabia, makes the site still more important than we had realised. In a very real sense, the Dalma site represents the dawn of the Emirates."

'Ubaid potsherds found on Merawah, Ghagha'

Studies of potsherds collected by ADIAS on the island of Ghagha', in the far west of Abu Dhabi, and on Merawah have provided important new evidence of the links between the UAE and the 'Ubaid civilisation in Mesopotamia, which flourished between 6,000 and 7,500 years ago.

A number of sherds found during survey work on the two islands were submitted recently to Professor Dan Potts, of Sydney University in Australia, for examination. He concluded that several sherds from each island were probably of 'Ubaid type. The sherds were then shown in March to Dr. Sophie Mery, of the French Centre Nationale pour les Recherches Scientifiques, CNRS, an expert on the early ceramics of the Gulf, who confirmed the identification.

ADIAS has previously found 'Ubaid sherds on the island of Dalma, (also examined by Dr. Mery), and the addition of two new sites where the pottery is present further expands our knowledge of the trading links of the people of the UAE's islands and coast during the Late Stone Age.

Of particular interest is the fact that the Merawah

sherds were found on the major MR-1 Late Stone Age site, which has produced one of the best assemblages of flint tools anywhere in south-eastern Arabia.

The Ghagha' and Merawah sherds have now been sent to the CNRS facility at Nanterre, Paris, where their chemical composition will be studied as part of a programme being run by Dr. Mery to determine the places of manufacture of the 'Ubaid sherds found on sites in the Gulf.

Also identified among sherds from Ghagha' was one from the early Second Millennium BC Barbar civilisation of Bahrain. Sherds from the same period have also been identified on the surface of an as-yet unexcavated mound on Sir Bani Yas. Thus far, no sites of this date have been excavated on the coast and islands of Abu Dhabi, and the potsherds are useful evidence that they were occupied during this little-known period.

UAE's first lime kilns

Under the direction of Nadia Iacono, a further season of excavation was undertaken in March on Merawah, to investigate the fourth and last of a group of cairns at Site MR-6, on the western coast of the island, southeast of the village of Liffah. The site is separated by a shallow inlet from the Late Stone Age site of MR-1.

Largest of the features at MR-6, the excavated cairn concealed two large and well-preserved circular lime kilns, with their walls still standing to around one metre in height, and with their westward-facing flues still in good condition.

Within the kilns, the presence of extensive quantities of carbon and charcoal permitted samples to be taken for Carbon 14 dating.

In one of the flues, some broken pottery was found which our ceramics expert, Dr. Robert Carter, has provisionally identified as being of probable mid to late First Millennium AD in date, the first evidence from this period yet to have been found on the island.

Lime used for plaster, is known to have been produced fairly widely in the Emirates in the past, but the two Merawah kilns are the first to have been identified anywhere in the country.

The size of the kilns suggests that they were probably used over a considerable period of time, rather than being built for short-term use. So far, no evidence of plastered buildings has been identified on Merawah, although since we find new sites of various dates on the island each season, this may simply be because the remains of such buildings have not yet been recognised. It

is possible, however, that the kilns were used to produce quantities of lime for export to other islands. The kilns may, therefore, offer evidence of another component of the economy of the people who lived on the coast and islands in the past. Fishing and the harvesting of pearl-oysters is well-recorded. ADIAS has also identified evidence of the export of guano from colonies of **Socotra Cormorants** *Phalacrocorax nigrogularis* to Basra in the 12th Century AD, and, this season, of the mining of sulphur at Jebel Dhanna, probably by the 15th or 16th Century AD. Was the manufacture of lime for plaster, perhaps, another component of the pre-industrial economy of the people of Abu Dhabi's islands?

Studies of water catchment system on Merawah

by Sal Garfi

Between March 29th and April 22nd Salvatore Garfi and Jakub Czastka carried out a detailed micro-topographic survey of an extensive water catchment system west of the village of Ghubba, on the southern coastline of Merawah. The system was first fully identified during fieldwork at the beginning of last year, although the lower part of the system was first recorded back in 1991.

The catchment system is situated on the top of a limestone mesa that forms part of the island's central core and is approximately 5 metres above present High Water Mark. It extends over an area of c. 300 metres by 150 metres, and consists of naturally occurring basins which have been dammed up by linear outcrops of limestone. There are three levels of basins, with only 10 cm. interval between them, which are linked by gullies and channels which display evidence of having been managed and adapted in the past.

Rainwater falling on the mesa and channelled through the system debouches onto the lower strand plain between the mesa and the south shore of the island in two places. In one of these areas, two channels clearly lead the water to a stone-lined channel which then leads to a now disused well-site, around 200 metres to the southeast. At some time in the recent past, an attempt to improve the lower channel has been made through the raising of earthen banks and through the building of a high earthen bank at the well site itself, although this may have been built not to direct water to the wells, but rather to permit the planting of a few palm trees. One tree

is currently present on the site, and two well-cut pits with the remains of palm tree roots have been visible since the first ADIAS survey of the island. It is at present not possible to assign a date to the water management system, since no pottery is present on the site. While it remained in use until relatively recently, it may originally have been constructed much earlier.

Another catchment system on the western edge of the mesa, close to the group of cairns that make up the site at MR-12, was first identified following the heavy rainfall of the winter of 1997-1998, and again appears to debouch onto adjacent low-lying land, in this case an infilled embayment.

The systems, like others, both large and small, identified on other islands, clearly show that in the past the inhabitants of Abu Dhabi's islands were extremely adept at managing the scant fresh water resources available.

Merawah's unique geology

As many of our sponsors will know, a geological and geomorphological survey of Merawah was carried out for ADIAS early last year by Professor Graham Evans, (who was the first person to undertake scientific studies of Abu Dhabi's *sabkhas* back in the early 1960s), and Dr. Anthony Kirkham, with help in the field from Dr. Robert Carter, our ceramics expert, and Philippa Loates, an archaeology student at the University of Manchester.

One of the key objectives of the study was to obtain information to help us understand the evolution of the island's geology, including current shorelines, to help in the dating of the archaeological sites.

A preliminary report has now been produced by Professor Evans and Dr. Kirkham, which is of considerable value. One discovery, for example, is the fact that the coastal plain on which the village of Ghubba and the well site (*see article by Sal Garfi, above*), now stand only began to be formed about 1600 years ago - giving us an explanation of why nothing from earlier periods has been found in this area.

The geological study has produced other valuable results, in a geological sense. To quote from the report, Merawah "has the most complete Quaternary sequence seen at outcrop anywhere in the whole region, and includes a basal coralline limestone which has never been recorded before." In association with scientists from other disciplines, such as botany and ornithology,

ADIAS is now working on the preparation of a collection of papers on Merawah, which, by now, has been more intensively studied than any other island in Abu Dhabi.

Protecting archaeological sites

As readers of the *Occasional Newsletter* may be aware, a draft federal law on archaeology is currently being prepared by the Ministry of Information and Culture which will, among other things, extend protection to archaeological sites throughout the country.

Fortunately, in recent years there has been a broad understanding from Government departments and other bodies, like the oil companies, of the need to protect sites. In the past, however, this was by no means the case.

During work in the west of Abu Dhabi over the winter, an ADIAS survey team inspected a group of sites at Qarn Mugharraq, just west of Jebel Dhanna, which had been first recorded in the early 1970s, and then published in the early 1980s. While some of the sites remained in good condition, others had completely disappeared as a result of subsequent development, including a possible Third Millennium BC settlement close to the shoreline. Presumably those responsible had no idea that the site existed.

The disappearance of the site underlines, however, the necessity both for as much survey work as possible to be undertaken before construction and other work takes place, and for information about sites to be drawn to the attention of the relevant authorities. Over the course of the next year, ADIAS will seek to develop further its links with all other Government bodies involved in development, so that sites can be identified, and then protected, before development takes place.

Finally ...

ADIAS has now completed eight years of activity, during which much new information has been discovered about the archaeology and heritage of the country. A multitude of sites have been recorded, many have received detailed study, and a publication and public awareness programme is now bringing the results of our work to the notice of the scientific community and the general public. We could not have operated without the support of our sponsors. We are grateful for their help and hope that they will continue to support our work in the years ahead.