

Abu Dhabi Islands Archaeological Survey Project

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Winter season commences with further study of Jebel Dhanna sulphur mines

A combination of organisational re-structuring and unexpected short bouts of fieldwork have both contributed to the lengthy delay in the issuing of this first *Occasional Newsletter* for the 2000-2001 Season. For that, apologies to our readers! As the following pages will show, however, quite a lot of useful fieldwork has already been completed since the end of the summer break, while work on our first major fieldwork exercise of the season began at Jebel Dhanna a few days ago.

Regular readers will recall that in late 1998, an ADIAS team identified a large sulphur mining complex on the slopes of Jebel Dhanna, within the enclosure surrounding the oil export terminal of the Abu Dhabi Company for Onshore Oil Operations, ADCO. This complex, including well over fifty mine shafts and several long trenches, is the only sulphur mine site yet identified in the Emirates.

In line with its Health, Safety and Environment, HSE, policy of protecting sites of importance for the national heritage, ADCO Management has now made it possible for ADIAS to carry out a second phase of study at the site.

Fieldwork is being undertaken by Daniel Hull and Stephen Rowland, both graduates of the Department of Archaeology of Britain's University of York, and is being supervised by Simon Aspinall, a member of the original three-man team that first discovered the sites.

The programme of work involves mapping of the known sites, drawing of selected sites and a survey for further mine shafts and trenches inside the ADCO terminal area. A number of previously unrecorded mine shafts have already been

identified, with more of the terminal area yet to be examined.

As part of the mapping programme, the shafts and trenches are being plotted in collaboration with ADCO's Geodetics Department, which has assigned a member of its staff to work with the ADIAS team.

The fieldwork is due to continue until mid-December, and plans are being drawn up with ADCO for the excavation of some parts of the mining complex next year.

Pottery found along the beach at Jebel Dhanna indicates usage of the area during the 16th-18th Century AD, and, on the basis of current knowledge, the sulphur mines are believed to belong to the same period. Sulphur was certainly an export commodity from the Arabian Gulf at this time, and is mentioned in the archives of the Dutch East India Company from the mid-18th Century. There is, however, no mention of the mines in a British description of Jebel Dhanna dating to around 1820, and it is assumed that the mines had been abandoned by that time, apart from some minor extraction by local inhabitants, who used the sulphur until the mid-20th Century to produce ointment for treating sores on camels.

The presence of sulphur at Jebel Dhanna is due to the geology of the *jebel* itself, a salt-dome with associated deposits both of sulphur and salt. Although salt-domes also exist on Sir Bani Yas, Dalma, Arzanah, Qarnein, Zirku, Das and Sir Abu Nuair, no sulphur mines are known from these islands.

The Jebel Dhanna mines, therefore, represent a unique part of the early industrial history of Abu Dhabi.

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New fossil and Late Stone Age sites found in Rumaitha

An archaeological screening study carried out by an ADIAS team in the Rumaitha oilfield during September and early October produced useful new information about the distribution of Late Stone Age sites near the old (pre-*sabkha*) coastline and also about the extent of exposures of Miocene rocks with vertebrate fossils.

The work was undertaken in association with ADCO, as part of its programme of collecting baseline archaeological and ecological data for its concession area.

During the survey, a number of areas with natural flint deposits were identified, as well as several fragments of stone tools. Of particular interest was a broken, but fine, bifacially worked flint knife. This piece, along with other Late Stone Age material from the onshore areas, is to be studied over the course of the winter by Dr. Heiko Kallweit, of Germany's University of Freiburg, who is also studying sites and artefacts from the Late Stone Age in Ra's al-Khaimah.

The key finds from the Rumaitha area, however, are palaeontological rather than archaeological, with the discovery of a number of new sites with material from the Late Miocene period, around 5 to 6 million years ago. These sites included the most easterly evidence of the presence of fossil eggshell from an ancestor of the Ostrich, as well as a site with vertebrate fossils.

In the south of the field, a large exposure of Miocene sediments was identified, with what appeared to be a large river-bed, over 2 metres thick. Further study of this site is planned.

The sites appear to be of the same period as the major sites in the Baynunah region in western Abu Dhabi, but are over 100 km. further east, representing a major extension of the geographical distribution of Late Miocene fossil sites in the Emirate. Further study of the key sites is being planned in association with ADCO.

Survey programme continues

Over the course of the last few months, ADIAS teams have continued a programme of preliminary surveys both on islands and onshore, with a number of previously unrecorded sites being added to our ever-growing database.

During a visit to the island of Abu al-Abyadh in August, several new sites from the Late Islamic period were identified in the south-west of the island, complementing those already found on the

north-west coastline in earlier work. Over 20 sites, all Late Islamic in date, have now been identified during preliminary work on Abu al-Abyadh, the largest of Abu Dhabi's islands.

Also in August, two Late Islamic sites were identified on the small island of Halat Hail during an environmental impact assessment undertaken for ADCO, while further evidence of occupation during the Late Islamic period was found in September on an offshore islet on the south side of the Khor al-Bazm, where ADCO is to drill a development well for its Dabb'iya field. In both cases the sites were interpreted as being temporary fishing camps, since no evidence of structures or of water collection features was identified. Pottery from both of the islets has been collected for subsequent analysis and study.

Both of the two islands are small and low-lying, without any of the rock exposures that characterise many of the larger islands. This may mean that they have developed from sandbanks only in the last few hundred years or so, which would explain why only Late Islamic material has been identified on them. This hypothesis, however, needs further study.

Finally, it should not be thought that there are archaeological sites everywhere, just waiting to be found. In some places, there is nothing at all!

The proof of this was a short survey carried out by a three-man team on the north-eastern tip of Sadiyat island in mid-November. Although the sheltered eastern coastline facing into the lagoon seemed to be an ideal place for fishermen to stop and camp (and to leave behind shell middens, fireplaces and other traces of their passing), several hours of detailed searching failed to find a single site. There was, however, plenty of rubbish left over from recent weekend picnics.

The reasons for the absence of sites is not yet clear. It could simply be that mobile sand dunes have covered the evidence, or that sites on Sadiyat are to be found elsewhere. Further work on the island is planned for the New Year with the collaboration of ERWDA.

Further preliminary survey work will take place on islands and along the coastline during the rest of the winter whenever the opportunity arises.

As always, ADIAS is happy to receive reports from anyone about the casual discovery in the desert, on the coast or on islands, of pottery or other archaeological artefacts in the desert, on the coast or on islands.

Some important discoveries have already been made as a result of such reports and we assume that many more discoveries are just waiting to be made!

Dalma sites examined

At the request of Minister of Information and Culture HH Sheikh Abdullah bin Zayed Al Nahyan, a two-man ADIAS team made a flying visit to the western island of Dalma at the beginning of November to examine several sites on the island that were reported to be endangered by development.

One of the sites was first identified during the first ADIAS survey in 1992, an Islamic graveyard and adjacent mound where pottery from the late pre-Islamic/early Islamic period had also been recognised. The mound, where evidence of walls can be detected on the surface, is close to an area of tree-planting, and ADIAS has recommended to the Minister that no further planting work in the area be permitted.

A second site was reported by the curator of the small museum of Dalma. Photographs of the site, on an elevated plain in the north of the island, showed a number of stone circles of a type not previously recorded on Dalma. When visited, however, this area was found to have been bulldozed during land preparation for the construction of housing. A recommendation has been submitted that survey work be conducted in any areas on the island where construction is planned before any construction work commences.

A third potential site, also reported by the museum curator, was a small hill, again in the north of the island, where several roughly circular deep holes and tunnels were visible. Upon investigation, these were found to be natural, caused by the erosion by water of a soft rock strata.

On the slopes and surface of the hill, however, four flattened and cleared areas were identified. The purpose of these areas was not determined, and no archaeological artefacts, such as pottery, were present, but they were clearly man-made. A recommendation has been submitted that these areas should be fenced off, pending further investigation.

A fourth site is in the centre of Dalma town, immediately opposite the post office. Here, some recent concrete buildings have been removed, prior to planned new development.

The buildings were situated on a low mound, on which Late Islamic pottery and a few sherds of earlier material were visible.

The mound itself may represent the collapsed remains of earlier houses.

Much of the centre of the old village of Dalma has now been built upon, covering the evidence

of earlier occupation. In consequence, a recommendation was made to the Minister that a close watch be kept on building operations in the area and that consideration should be given to driving a trench through the mound to see if there are any remains of earlier buildings.

Archaeology and Coastal Sensitivity

As part of the implementation of its mandate to record and conserve the environment of the Emirate of Abu Dhabi, the Environmental Research and Wildlife Development Agency, ERWDA, has recently completed preparation of a series of Coastal Sensitivity maps. These show areas of environmental importance, including seagrass beds, mangrove forests and coral reefs.

Thanks to the developing collaboration between ADIAS and ERWDA, the maps also identify areas of archaeological significance, with most of the sites discovered by ADIAS being marked, and ranked in order of perceived importance.

ERWDA is also working with ADIAS on the inclusion of basic archaeological and palaeontological site data into its Abu Dhabi Environmental Database.

This will facilitate the protection of such sites in the future, as well as providing a visual impression of the distribution of known archaeological sites throughout the Emirate.

Archaeology Conference for Al Ain

The First Conference on Emirates Archaeology is to be held in Al Ain in April next year, and, appropriately, a number of papers related to work by ADIAS have been submitted.

The conference is being organised by the Zayed Centre for Heritage and History, part of the Emirates Heritage Club, and is being held under the patronage of EHC Patron and Deputy Prime Minister HH Sheikh Sultan bin Zayed Al Nahyan.

Co-organisers for the conference are the Department of Antiquities and Tourism in Abu Dhabi's Eastern Region and the Ministry of Information and Culture.

Work carried out by ADIAS teams on the islands of Sir Bani Yas, Dalma and Marawah as well as analysis of pottery from the islands of Balghelam, Rufayq and Ghagha' will be discussed during the conference.

Further information on the conference can be obtained from ADIAS.

New evidence on the distribution of ancient hearths

As regular readers of the *Newsletter* will know, ADIAS has discovered several hundred small hearths or fireplaces, both rectangular and circular, on the islands and mainland coastline of Abu Dhabi. Carbon 14 dating of ash from some of these hearths, on the islands of Marawah and Balghelam, has produced dates from the late Third Millennium BC, around 2100 BC, through to the late pre-Islamic period, around 200 AD.

Such hearths have not thus far been reported from the coastline of the northern emirates.

It is now clear, however, that these structures can be found outside Abu Dhabi.

In November last year, the ADIAS Executive Director identified several rectangular hearths on the island of Al Khor, in eastern Qatar, on a site dated to the local Iron Age. Now, thanks to a swift visit paid to the Hawar archipelago, south west of Bahrain, in late October, evidence of the extension of the distribution of such sites further north has been identified, with both rectangular and circular hearths being identified on one of the islands in the Hawar group.

The apparent absence of such sites from the coastline of the northern emirates, however, is puzzling. It is possible, of course, that they exist, but have not been recognised, although a number of ADIAS personnel have also worked in the northern emirates. Another possibility is that they have been recorded, but not published.

One objective of this winter's ADIAS season is to increase the interchange of information and visits with archaeological departments in the rest of the country, which may help to resolve the puzzle of the missing hearths.

ADIAS Season One book in Arabic

A book by ADIAS Academic Director Dr. Geoffrey King on the preliminary results of the first season of work by ADIAS was published in English several years ago by British publisher Trident Press, in association with the Ministry of Information and Culture.

Simply entitled: *The Abu Dhabi Islands Archaeological Survey: Season One*, the book provides a useful Gazetteer of sites as well as an introduction to the history of each island.

Thanks to the support of Information and Culture Minister HH Sheikh Abdullah bin Zayed Al Nahyan, the book has recently been published in Arabic, again by Trident Press.

One of the objectives of ADIAS is to help to create a greater awareness among the public at large of the archaeological heritage of Abu Dhabi, and this new initiative by the Ministry will help significantly in spreading knowledge about some of the key sites on Abu Dhabi's islands.

Copies can be obtained from the External Information Department, Ministry of Information and Culture, PO Box 17, Abu Dhabi.

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ADIAS in the academic world

Charlotte Stokes, an undergraduate student at Britain's University of York, was awarded a special prize recently for the best 3rd year dissertation in the University's Department of Archaeology.

The honour, the Charles Wellbeloved Prize, comes with a cash prize, and is awarded by the Yorkshire Philosophical Society.

Charlotte's dissertation was entitled "*The Neolithic Shell Eaters of Dalma: an analysis of the shell material from Dalma Island, Abu Dhabi.*"

In preparing the dissertation, Charlotte worked under the supervision of Mark Beech, the ADIAS fish expert, who is a Research Fellow at York University. During her research, she investigated the 7000 year old assemblage of shells from the ADIAS site on Dalma, and was able to identify a change in the selection of shell species consumed through time, as well as an apparent size decrease in two species. These changes may be linked to over exploitation of the neighbouring coastal environment.

A previous winner of the Charles Wellbeloved Prize is Daniel Hull, currently carrying out fieldwork on the sulphur mines at Jebel Dhanna.

Studying under ADIAS Academic Director Dr. Geoffrey King at London University's School of Oriental and African Studies, Dan has just completed an MA degree in History of Art and Archaeology, with a dissertation on "*Perceptions of the Past: The Role of Archaeology in the United Arab Emirates,*" which drew heavily on his fieldwork experience earlier this year on Marawah, as well as an ADIAS-supported study tour of UAE museums.

ADIAS looks forward to being able to help UAE national students wishing to study archaeology. As always, if any readers of this *Newsletter* know of any nationals keen to study archaeology, we would be delighted to hear of them.