

A REPORT ON THE ABU DHABI ISLANDS ARCHAEOLOGICAL SURVEY (1993-4)

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ADIAS

The survey of the Abu Dhabi off-shore islands grew out of a recognition that little was known of the western area of Abu Dhabi Amirate and nothing had been published about its off-shore islands.¹ By contrast, a growing amount of information has emerged elsewhere along the Arabian side of the Gulf in recent years. During the first season of fieldwork by the Abu Dhabi Islands Archaeological Survey (ADIAS)² in 1992, the islands of *Şir Banī Yās*, *Dalmā* and *Marawaḥ* were surveyed and 74 sites were identified.³ After this encouraging start, fieldwork continued in 1993 and 1994 with excavations on *Şir Banī Yās* and *Dalmā*, as well as further survey on *Marawaḥ* and on the western islands of *Ghāghā*, the *Yasāt* group and their neighbours.

The present report summarizes the results of survey carried out in 1993-4 on the *Yasāt* islands (*Yasāt al-‘Ulyā’* and *Yasāt al-Şuflā’*), *Ghāghā* and *Marawaḥ* and excavations on *Şir Banī Yās*.

Islands survey

In 1993 we surveyed *Yasāt al-‘Ulyā’* and *Yasāt al-Şuflā’*, to the east of *Ra’s Mushayrib*, *Ghāghā*, to the north-west of *Ra’s Ghumays*, the smaller island of *Kafay*, to the north-east of *Ghāghā*, and *al-Faza‘iya*, to the east of *Ra’s Ghumays*. *Ra’s Mushayrib* and *Ra’s Ghumays* belong to the group of peninsulae north and north-west of *al-Sila’* (Fig. 1).

The islands of *Yasāt al-‘Ulyā’*, *Yasāt al-Şuflā’* and *Ghāghā* were particularly rich in archaeological remains. Two sample areas were recorded graphically and in detail using total station hardware and software and computer-aided design equipment. By contrast, *Kafay* was apparently less heavily settled in the past, although this impression may be partly due to damage caused by military earth-moving. Very limited work was done on *al-Faza‘iya*: further fieldwork is to be done on this island in future seasons. Settlement on the mainland peninsulae north and north-west of *al-Sila’* appeared to be less concentrated than that on the islands, although the mainland was less comprehensively investigated because of the distances involved.

Yasāt al-‘Ulyā’ and *Yasāt al-Şuflā’* are now deserted but were once relatively heavily settled, as shown by the pottery scatters and shell middens found over extensive parts of the islands. In total, 40 sites were identified in 1993. Settlements were mainly located around the coast of *Yasāt al-‘Ulyā’*, especially on the eastern side.

Widespread evidence of settlement was also found on the southern and eastern coasts of Yasāt al-Şuflā².

Evidence of sustained activity over time was noted in the detailed survey area, located on the southern coast of Yasāt al-‘Ulyā². Two wide sandy bays offered good shelter and formed natural harbours for small craft. Water was always a problem, but pits were used for storing rainwater. The only trees on the island at present are located near these pits.

There were numerous examples of temporary mosque/prayer areas of various sizes. All these consisted of a qibla wall and a central mihrāb, outlined by simple lines of stones. These numerous mosques suggest a large population at some point in what in the Gulf is generally termed the later Islamic period: that is, approximately the sixteenth to the nineteenth century. The same type of mosque is found on Ghāghā². A relatively numerous population over time is also indicated by the presence of many shell middens.

Ceramics recovered from Yasāt al-‘Ulyā² included third- to fourth-century Partho-Sasanian and Sasanian wares and a small Early Islamic element.⁴ Late Islamic pottery was ubiquitous and is related to the general Julfār horizon. Ceramics from Yasāt al-Şuflā² included Sasanian (al-Dūr D), Sasanian–Early Islamic and a very small percentage of Late Islamic ceramics.

KAFAY (QAFFAY?, KAFFAY?)

Kafay lies due north of Ra’s Mushayrib, near the western limits of United Arab Emirates territorial waters. Although the archaeological remains on Kafay may once have been of an order similar to those on the Yasāt islands, large areas have been heavily disturbed and less evidence of settlement was found. However, shell middens, Islamic graveyards, water tanks and a rectangular dry-stone building standing over 1 m high were identified. Only Late Islamic ceramics were recovered.

JAZA’IR GHĀGHĀ²

Jaza’ir Ghāghā² consist of a group of four islands, of which we surveyed the largest, usually termed Ghāghā². Only a preliminary examination was made in 1993, with more extensive work undertaken in 1994. The group is deserted except for a coastguard station with seven coastguards. The last residents left Ghāghā² within the past 50 years. Over 40 sites were identified, with evidence of large settlements on the south coast; there were also others inland and along the northern coast. A large strip running from the south coast through the centre of the island was surveyed in detail; the topographic features, buildings, find spots and other man-made features were plotted.

Like Yasāt al-‘Ulyā² and Yasāt al-Şuflā², Ghāghā² has remains of settlement dating from the pre-Islamic period through to later Islamic times. Two major sites of approximately third- to fourth-century AD date were identified, one in the centre of the island, the second on the southern shore. The first of these sites consisted of an extensive pottery scatter with the deflated remains of structures. The second site had been built over with later Islamic houses but the ceramics and fine glass on the surface again suggested a third- to fourth-century AD date for the underlying site. This is an especially interesting discovery given the fact that similar pre-Islamic sites were noted on Yasāt al-‘Ulyā².

A large number of rectilinear stone tanks had been built upon the northern ridge overlooking the central basin of Ghāghā². They were strung out along the length of the ridge, and a number of channels had been dug. It was concluded that the stone tanks

had been built to catch and store rainfall, which was then used to irrigate a plantation below. The channels did not appear to be directly connected to the tanks; it seemed that the tanks were emptied manually into the channels and water was led thence to the plantation. The plantation enclosure in the centre of the island was associated with later Islamic settlement; a few wild palms survived from the original gardens. The plantation was enclosed by a stone wall which was extended at some stage to encompass a larger area of land.

The effort put into the construction of this irrigation system makes it almost certain that the settlement on Ghāghā² was of a permanent nature. The upkeep of such a system would have required steady maintenance in order to retain its effectiveness.

Late Islamic period settlements were found on Ghāghā² with single-storey courtyard houses, a house type commonly encountered around the Arabian coast. There were also at least 30 simple mosques, outlined by rows of stones marking the qibla. They varied between the diminutive, with space for only two or three worshippers, and much larger mosques, one of which appears to have been intended as an ʿīd mosque. The number of these mosques may reflect the size of the past population of Ghāghā². Another indicator of past population size is provided by the existence of seven graveyards, the biggest of which has more than 65 burials.

AL-FAZAʿIYA

Al-Fazaʿīya (variously al-Ubsayyah, al-Ufzayyah) lies immediately east of the Raʿs Ghumays peninsula. An important site located near a protected anchorage may prove to be of approximately the same third- to fourth-century AD period, or possibly later, that we have noted on the Yasāts and Ghāghā². Further fieldwork will be pursued here in 1995.

Ceramics from the survey

The ceramics found on the islands surveyed reflect occupation in the late Parthian, Sasanian and Late Islamic periods.

The concentration of sites of third- to fourth-century AD date in western Abu Dhabi waters was entirely unexpected and opens up a major new pattern of settlement in the post-Hellenistic period in this region of the Gulf. Comparison with sites at al-Dūr in Umm al-Quwain, Mleiha (al-Malayha) in Sharjah, and al-Ḥulayla (Raʿs al-Khaimah) springs to mind in the light of these discoveries.

The absence of highly diagnostic Early and Middle Islamic wares should be cautiously interpreted as a chronological indicator. Our knowledge of Early and Middle Islamic periods is based on material from large settlements in Iraq and Iran, whereas very little is known of the contemporary Gulf region and especially of the islands. So far, there is no evidence against the possibility that the islands may have had their own distinct local pottery. On the other hand, classical Early and Middle Islamic wares have been found elsewhere in the Gulf area in Bahrain, Murwab (Qaṭar), at al-Jumayra (Dubai), al-Ḥulayla (Raʿs al-Khayma) and in Oman.

Marawah

Marawah lies north-west of Mirfā, to the west of Abu Dhabi city and the much larger island Abūʿl-Abyad. Marawah was first visited by the Survey in 1992. In 1994, the team returned to map MR 11, a major lithics site on the western end of the island, and to analyse surface finds. Nearly 100 lithics were recovered; preliminary study

suggests a provisional date of 7000 years BP. This makes MR 11 approximately contemporary with the 'Ubaid-related site DA 11 at Dalmā,⁵ although there is no evidence that MR 11 is 'Ubaid or 'Ubaid-related.

Excavations at al-Khawr, Şir Banī Yās (1993–4)

Şir Banī Yās lies west of Abu Dhabi, just off Jabal Dhanna (Zanna). The landscape of the island in many places has been transformed by landfill operations and tree planting during the last two decades, but areas still exist where the pre-modern terrain survives intact. Fencing encloses the plantations to protect the trees from the gazelle herds that roam the island. Natural water supplies on Şir Banī Yās are very meagre and the new plantations rely on desalinated water.

Our fieldwork in 1992 revealed 36 sites on the island (Fig. 2); six more were identified in 1993. There is an important concentration of sites just north of Jabal Buwaytir in the area of al-Khawr, on the east side of Şir Banī Yās; it was on these sites that we concentrated in 1993 and 1994. They all appear to be dated to approximately the fifth to eighth century AD.

The main al-Khawr group of sites (Sites 3–9) are scattered over the coastal plain, in a llama pen and in plantation enclosures. Site 2 was on the final ridge descending eastwards to the coastal plain from the central mountain ridge.

SITE 2

One of the principal discoveries here was a stone-lined water channel faced with white plaster and running for over 5.5 m. It was fed from an apparently rectangular structure, probably a well on the higher ground at the top of the channel.⁶ The sand below the surface was still wet; if it proves to be a well, as we suspect, it would be the first ancient water source that we have so far identified. The apparent paucity of natural sweet water has been one of the most problematic issues encountered so far regarding the Şir Banī Yās settlements.

In the north-west part of Site 2 several stretches of rendered wall were visible above ground, partly hidden by debris. These surface remains were cleared in 1994 to reveal a building similar in construction to those at Sites 3 and 9 on the coastal plain below. The Site 2 building was constructed of stone set in a green sand mortar. The external and internal walls were faced with a fine white gypsum plaster. The structure exposed probably consisted of three rooms, although only the central and western rooms were defined with certainty. Both these rooms were aligned north-south. The internal dimensions of the central room were c. 3.7 × 2.15 m and of the western room c. 2.7 × 2.2 m. The floor was covered with a very fine white plaster laid over a sand make-up. In the southern wall of the central room there was a distinctive entrance-way measuring 1.4 m, the widest so far noted anywhere among the entire group of structures in the al-Khawr area. The significance of this structure has yet to be established.

SITE 3

Site 3 was a low mound in llama pen 4. After excavation in 1993, it proved to be a courtyard house measuring 7.42 × 7.14 m, standing roughly in the centre of a 20 × 20 m walled courtyard, in which was a small water cistern. The courtyard walls, the house and the water cistern were all faced internally and externally with a fine white plaster. Walls had fallen in complete blocks in which their original structure remained clearly visible; door frames, steps, windows and niches either survived intact or could be reconstructed pictorially with accuracy.⁷



FIGURE 2. Şir Banî Yâs.

Glazed and unglazed pottery and glass were found in and around the house, with a concentration of pottery around the water cistern. Ceramics dated the building to the fifth to eighth century AD.

There are seven other sites nearby, of which at least one seems to have been a courtyard house. Courtyard houses are a commonly encountered building type in later times along the coast of the Gulf and the Red Sea although they remain undocumented for this period in Abu Dhabi.

SITE 9

Site 9 was a low flattened occupation mound south of Site 3 measuring approximately 220 × 160 m, and 1.5–2 m in height. When first identified in 1992, the surface had already been disturbed by machinery during the preparation for the plantations. In 1993, we opened two test trenches to establish whether any structural remains were extant below the surface. The test trenches revealed plastered floors and walls; we therefore embarked on large-scale excavation in 1994.

The 1994 excavations revealed a total of eight rooms and seven external yards around a courtyard, all generally in an excellent state of preservation, with well preserved doorways and walls. The walls and floors had the same fine plaster finish found during the excavation of the courtyard house at Site 3.

One of the larger yards appears to have been a functional area, with a trough for animals on the north side. The courtyard was littered with shells and fish-bones. Close by was a small room identified as a kitchen which was still richer in bones, shells and other environmental and dietary evidence. However, other rooms excavated were consistently clean. This cleanness was a major characteristic of the courtyard building at Site 3 and also of the building at Site 2 on the ridge.

There were two periods of occupation in the courtyard building. The first was associated with the initial building and the second with squatter reoccupation no great length of time after the damage to the original structures. Only a limited amount of pottery was found, but that which was discovered conformed to the same fifth- to eighth-century AD horizon to which the courtyard house has been assigned.

DECORATIVE PLASTER

When we first identified Site 9 in 1992, fragments of fine carved plaster were found on the surface, among them a piece with an elegant vine-scroll motif. Several more fragments were found during the 1993 excavations, including a grape cluster in raised relief. During the 1994 season a particularly important piece of decorated plaster was found among rubble on the east side of the larger courtyard, with a fine moulded plaster cross, once again in raised relief (Fig. 3); a second fragment was discovered nearby (Fig. 4). Yet a third plaster fragment had blind merlons in relief. It is possible that these decorative plaster motifs were associated with doorways, but insufficient fragments have so far been recovered to allow us to make a coherent reconstruction.

The discovery of crosses obviously has a major impact on our understanding of Site 9. It seems extremely unlikely that the crosses belong to an ordinary domestic structure. Rather, their presence suggests the presence of a Christian (presumably a Nestorian) building, of about fifth- to eighth-century date, but whether it was a chapel or a more extensive structure remains to be determined as work continues in this area in 1995.

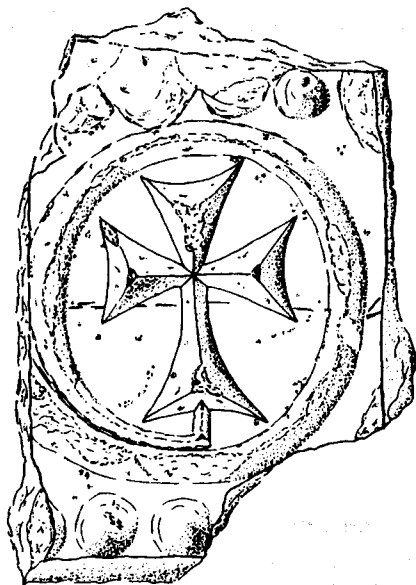


FIGURE 3. Cross on plaster from Site 9.

Our crosses seem to be comparable to those found elsewhere in the Gulf, including those from Kharg island and from a church at Faylakā' in Kuwait, excavated by V. Bernard and J. F. Salles in 1990,⁸ whose stucco cross is dated to the fifth to sixth century AD. Crosses from two churches from al-Jubayl and Thāj in Saudi Arabia have also recently been published.⁹ All of these churches seem to be rooted in the same Nestorian tradition. Nestorians have long been known to have been present on Bahraïn and on the east Arabian coast and mainland opposite; the Nestorian ecclesiastical provinces of Bēt Qaṭrayye and Bēt Mazūniyye encompassed eastern Arabia and Oman, respectively. However, to date, material remains of the Nestorian presence in the lower Gulf have been lacking. Our discovery of these crosses on Šir Banī Yās is the first evidence in the United Arab

Emirates of a Christian presence in the pre-Islamic period.

The pottery from al-Khawr, Šir Banī Yās

The pottery excavated at sites in the al-Khawr area of Šir Banī Yās is a very interesting corpus because it is mostly representative of a single-phase occupation in a region still very little investigated archaeologically.

It is not easy to define the Šir Banī Yās pottery assemblage, because of the lack of a reference collection of excavated and stratified ceramics for the appropriate period in the Gulf area. The less desirable process of referring to excavated collections from Iraq and Iran has therefore been adopted out of necessity. This is unsatisfactory for a small settlement like the al-Khawr site on Šir Banī Yās, as it is unlikely that similar types of pottery would have been in use both in densely populated town sites in Iraq and Iran and on a small island in the Gulf. Moreover, the pottery assemblage from the Šir Banī Yās excavation at the end of the 1993 season consisted of 537 sherds (approximately 120 minimum form number); only very general conclusions can be drawn from such a small assemblage.

From a preliminary analysis of the pottery, a Late Sasanian–Early Islamic date can be acknowledged. This vague label is due to the still-inadequate archaeological understanding of this transitional period, not only in the Gulf but also in much better

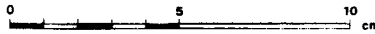
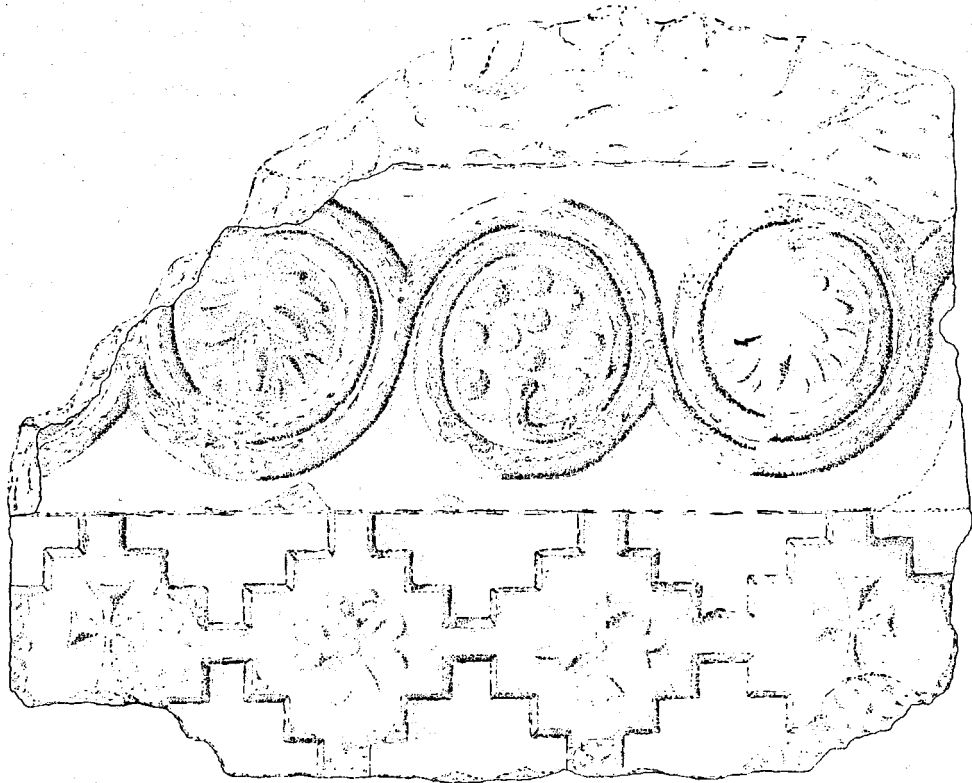


FIGURE 4. Crosses from Site 9.

known areas such as Iraq and Iran. Despite these cautions, enough evidence is available from comparative pottery to suggest that the *Şir Banī Yās* pottery indicates occupation extending into the Early Islamic period at sites 3 and 9.

Much of the pottery of this transitional Sasanian–Early Islamic period in Iraq and Iran seems to have retained certain characteristics of the late Parthian and Sasanian period; this also seems to be the case with the pottery from *Şir Banī Yās*. Parallels for the *Şir Banī Yās* corpus are found among the pottery of the late period from Mleiha in Sharjah and from al-Dūr in Umm al-Quwain. Of particular note in this respect is a dark grey–black–brown hard-fired ware which seems to have been in use in Mleiha and especially in al-Dūr during the first to fourth century AD, but it has not been found at Sasanian and Early Islamic sites in Iraq. This ware probably has a strong regional connotation, as it has been found at other islands in the area, and it cannot be exclusively interpreted as a chronological indicator. However, shapes associated with this ware have no close parallels at either Mleiha or al-Dūr: this absence is taken to indicate that the corpus from the al-Khawr sites at *Şir Banī Yās* is later than both the Mleiha and the al-Dūr assemblages.

Satisfactory Late Sasanian–Early Islamic parallels were found for most shapes associated with a light-buff ware, very rich in sand. This ware seems to be very well known in Iraq, and it appears in the Gulf from the Parthian period. Glazed wares seem to be less sensitive to the passage of time; Parthian as well as Early Islamic parallels were found for most of the glazed shapes.

It is the presence of a fine, light buff ware which most conclusively suggests an Early Islamic date. It is related to the very fine 'Abbāsid lightware found in Mesopotamia and Iran, where it does not seem to have been in use in the pre-Islamic period. The introduction of small jars with well levigated light buff fabric is normally attributed to the mid-eighth century at Sūsa. Unfortunately, no rims of this ware have survived and therefore any assumptions about it should be marked by caution.

The absence of a typical Sasanian ware, the so-called 'honey-comb' ware, might have implications in terms of chronology and also might support an Early Islamic date. However, this absence should be very cautiously interpreted, as 'honey-comb' does not appear in well dated Sasanian sites in Iraq.

An oval seal impression was found, but a chronological-stylistic sequence for such sealings has yet to be established, despite attempts in the past. In the light of seals found at Abū Sarīfa in Iraq, oval stamps can be attributed to the Sasanian period.

A *terminus ante quem* for the dating of the al-Khawr sites on Şir Banī Yās may be provided by the absence of classical 'Abbāsid fine and glazed wares found elsewhere in the Gulf area (at al-Jumayra in Dubal and at al-Hulayla in Ra's al-Khaimah). However, economic determinants should not be neglected: significant variations between the Şir Banī Yās and al-Jumayra assemblages may derive from the economic roles of the two very different sites, rather than from chronological factors.

Conclusion

The mainland opposite the western Abu Dhabi islands is generally inhospitable to settlement on much of the coast, and the hinterland of the western part of the Amirate consists of salt-flats and desert. The picture emerging from the present survey is that, in all periods, the off-shore islands constituted a major area of settlement in the region. The sheer number and distribution of archaeological sites noted so far from the Stone Age and the 'Ubaid period through to the Late Islamic provides general justification for this view. However, the work of the survey team on the deserted and archaeologically undisturbed islands of Yasāt al-'Ulyā', Yasāt al-Şuflā' and Ghāghā' provides the most impressive evidence of the extent of human activity in the past off the Abu Dhabi coast. Within this broad span of time, perhaps the most unexpected sites were those dated to the early centuries of the first millennium AD. Furthermore, the level of archaeological survival on islands such as the Yasāts and Ghāghā' suggests the former extent of archaeological material on far more disturbed islands such as Dalmā and Şir Banī Yās and perhaps even Abu Dhabi island itself. One also is reminded of the fact that the maps of Ptolemy (second century AD) and of al-Idrisī (twelfth century AD) both recognize the existence of a number of Gulf islands, which may reflect some appreciation of their importance during the first millennium AD.

As for the group of structures in the al-Khawr area of Şir Banī Yās, their Nestorian associations open up the possibility of an entirely unexpected series of relationships with other Nestorian sites in the region and with the organization of the Nestorian ecclesiastical provinces on the Arabian coast of the Gulf. This is a complex issue, but it suffices at this stage to underline that the Christian crosses at al-Khawr mark the most easterly Nestorian site so far recorded on the Arabian shore of the Gulf.

Sponsorship

Sponsorship has been vital to the success of the project. The team was sponsored in 1993 by ADNOC and Emirates Airlines, with further support provided by ADCO and ICL. In 1994, the team was supported by ADNOC, ADPOC, BP, ICL and by Emirates Airlines. Without the combined efforts of these organizations the Abu Dhabi Islands Archaeological Survey could not have undertaken this project. Mr M. Bowardi (Manager, Office of HH Shaykh Muhammad b. Zayed Al Nahyan) has been especially supportive, and we are deeply in his debt. We also thank Mr Ahmad Al-Sayegh (Director, Administration Directorate, ADNOC) for all of his interest and support. We also thank Mr David Woodward (ADCO) for the company's support. Mr Nabil Zukhour (ADCO) has extended every facility to the team and deserves especial thanks.

Notes

1 The only survey that had taken place along the coast before the project started had been carried out by Burkhard Vogt and his colleagues. It dealt with mainland sites west of Jabal Dhanna (Vogt *et al.*, 1983). For the offshore islands, only unpublished reports had emerged. S. Cleuziou provided archaeological notes in a report on Dalmā (in Harter, G., Cleuziou, S., Laffont, J. P., Nockin, J. and Toussaint, R., *Emirat d'Abu Dhabi. Propositions pour Dalma (Sept.-Oct., 1979)*), based on fieldwork carried out in 1979. [I am indebted to Dr C. Hardy-Guilbert for providing me with a copy of this report.] The Emirates Natural History Group produced a useful report on research carried out on Marawah in 1990 (Hellyer, P. (ed.), 1990, *The Natural History of Marawah Island, Abu Dhabi, United Arab Emirates. An Interim Report Prepared for H. E. Major General Sheik Mohammed Bin Zayed Al Nahyan*, Emirates Natural History Group, Abu Dhabi, June 1990).

2 The Abu Dhabi Islands Archaeological Survey is directed by G. R. D. King, FSA, and based at the Department of Art and Archaeology, School of Oriental and African Studies, University of London, and in Abu Dhabi, United Arab Emirates, where it is coordinated by Peter Hellyer.

The 1993 team consisted of G. R. D. King (director); D. A. Dunlop, formerly of The Conservation Practice, London (field director, survey and mapping); A. Stephenson (Department of Urban Archaeology, London; survey and mapping); C. Tonghini (SOAS; ceramicist); J. A. Elders (LDA Baden-Wurtemberg; field director, Şir Banī Yās); B. de Cardi, OBE, FSA (draughtsman, Şir Banī Yās, and survey); Ms K. Norman (conservator); K. Gundel (draughtsman, Şir Banī Yās); K. Flavin (joint field director, Dalmā); E. L. Shepherd (Norfolk Archaeological Unit; joint field director, Dalmā); D. Connally (Backtrack Design; site supervisor and draughtsman, Dalmā).

In 1994, the team consisted of G. R. D. King (director); D. A. Dunlop (field director, survey and mapping); A. Stephenson (survey and mapping); C. Tonghini (ceramics and survey); J. A. Elders (field director, Şir Banī Yās); B. de Cardi, OBE, FSA (draughtsman, Şir Banī Yās); M. Beech (Environmental Department, Archeoloický ústav AVCR, Prague; site supervisor and environment, Şir Banī Yās); K. Norman (conservator, Şir Banī Yās and Dalmā); S. Garfi (Department of Archaeology, University of Wales, Lampeter; site supervisor, Şir Banī Yās); K. Gundel (draughtsman, Şir Banī Yās); H. Maren (SOAS; registrar, Şir Banī Yās); J. Martin (registrar and site supervisor, Şir Banī Yās); K. Flavin (joint field director, Dalmā); E. L. Shepherd (joint field director, Dalmā); E. Glover (Institute of Archaeology, University of London; marine molluscs, Dalmā); J. Czaska (lithics, Dalmā); N. Dodwell (Norfolk Archaeological Unit; site supervisor, Dalmā); P. Trevell (Department of Urban Archaeology, London; ceramics, Dalmā); D. Lees (Department of Urban Archaeology, London; draughtsman, Dalmā).

3 The first season of fieldwork in 1992 took place with the permission of HH President Shaykh Zayed b. Sultan Al Nahyan and at the invitation of HE Shaykh Nahyan b. Mubarak Al Nahyan, Minister

- of Higher Education. Subsequently, the President requested that we should continue the survey under the patronage of HH Lieutenant-General Shaykh Muḥammad b. Zayed Al Nahyan, Chief of Staff of the UAE Armed Forces. The first season lasted from 21 March to 21 April 1992; the second season from 22 until 19 April 1993; and the third season from 25 February until 30 April 1994.
- 4 See pottery from al-Dūr and Mleiha studied by Mouton (1992). Parallels with Mouton's Period C and Period D have been noted among the pottery recovered by the present survey. A similarity has been especially noted with the al-Dūr pottery published by Mouton. It is on the basis of these parallels and the current Mleiha and al-Dūr dating that a date of about the third to fourth century AD (or even earlier) is proposed for our sites.
 - 5 Flavin and Shepherd (1994).
 - 6 A number of maps mark a spring in this location; see, for example, Series 1501, Sheet NG 39-15, Edition 7-GSGS, 1 : 250 000 Umm Sa'īd (Musay'īd), Qatar; United Arab Emirates, Saudi Arabia (1992).
 - 7 We were honoured to be visited by HRH The Prince of Wales on 10 December 1993 when His Royal Highness was on an official visit to the United Arab Emirates. His Royal Highness inspected the remains at Site 3 which had been cleared during the previous season.
 - 8 Bernard and Salles (1991).
 - 9 Langfeldt (1994).

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