Proceedings of the Seminar for Arabian Studies 32 (2002): 151–164

The development of northern Ra's al-Khaimah and the 14th-century Hormuzi economic boom in the lower Gulf

DEREK KENNET

Introduction

The aim of this paper is to examine the archaeological evidence for the development of human occupation and exploitation of the Ṣīr and Jiri plains which are the agricultural core of northern Ra's al-Khaimah in the United Arab Emirates (Fig. 1). The paper is principally concerned with the last two millennia, although some information relates to earlier periods.[1]

According to Lorimer, at the beginning of the 20th century, settlement on the Ṣīr and Jiri plains consisted of eleven small villages with a total of about 600 houses and an estimated sedentary population of about 3,100 people (Lorimer 1908: articles 'Sir', 'Jiri'). The principal villages were Shimāl and Khatt. On the coast, Lorimer lists the towns of Ra's al-Khaimah, Jazīrat al-Ḥamrā' and Rams with a combined population of about 9,500 people, 5,000 of whom were in Ra's al-Khaimah and the rest divided between Rams and Jazīrat al-Ḥamrā'.[2] The urban population therefore considerably outnumbered the rural population, but some seasonal movement took place between the two. For example large sections of the Za'āb tribe moved from Jazīrat al-Ḥamrā' to their date palms at Khatt each year (Lorimer 1908: article 'Jazīrat al-Ḥamrā'').

The rural economy at that time seems to have been based principally on date cultivation, supplemented by a mixture of wheat, barley, sorghum, and vegetables irrigated from wells. In addition, livestock, principally goats, sheep, poultry, cattle, and camels were kept. Fishing and pearl diving were important — pearls provided the only notable export from the region (Lorimer 1908: 1439). Rice, pulses, cloth, coffee, and sugar were imported, mainly from Iran and India (Lorimer 1908: 1440).

Seasonal movement was an important factor for some groups such as the Siḥūḥ and Ḥabūs whose traditional pattern was to move up to mountain villages during the winter, residing in stone-built villages clustered around terraced fields created to catch run-off water and silt (Dostal 1972). In these fields, crops were cultivated whilst goats were grazed in the surrounding mountains. Most of the villages were unable to support year-round occupation due principally to a lack of water. Large sections of the population therefore moved down to the coast during the summer and worked on the date harvest and at fishing (Dostal 1972: 3–4; Lorimer 1908: 1439).

Once the recent anthropological fieldwork in northern Ra's al-Khaimah by W. and F. Lancaster is published, it is to be hoped that the basic information provided by Lorimer and Dostal will be supplemented by a more detailed understanding of the complex pre-oil economy of the area (Lancaster & Lancaster 1999).[3]

In considering Lorimer's description, a question that presents itself is the antiquity of the situation he describes. In the absence of evidence to the contrary, we are tempted to imagine that this was the way things had always been. The historical evidence related to this question is very limited; what evidence is available has been studied by J.C. Wilkinson (1977) who concluded that Oman's agricultural potential reached its fullest development during the Sasanian period, and that little has changed since that time:

> 'The mise en valeur of the natural resources...was in large measure completed in pre-Islamic times; since then, it is only in the context of maritime trade and overseas expansion that important shifts in the economic structure have tended to occur (before the advent of the oil era). The general pattern of human occupancy in Oman has, then, been fixed since a remote period...' (Wilkinson JC 1977: 239)

This seems to be a very bold assumption, and it is not certain that the evidence that Wilkinson used can really support it. A re-evaluation of his conclusion in the light of archaeological evidence is therefore one of the central questions that this paper will try to address.

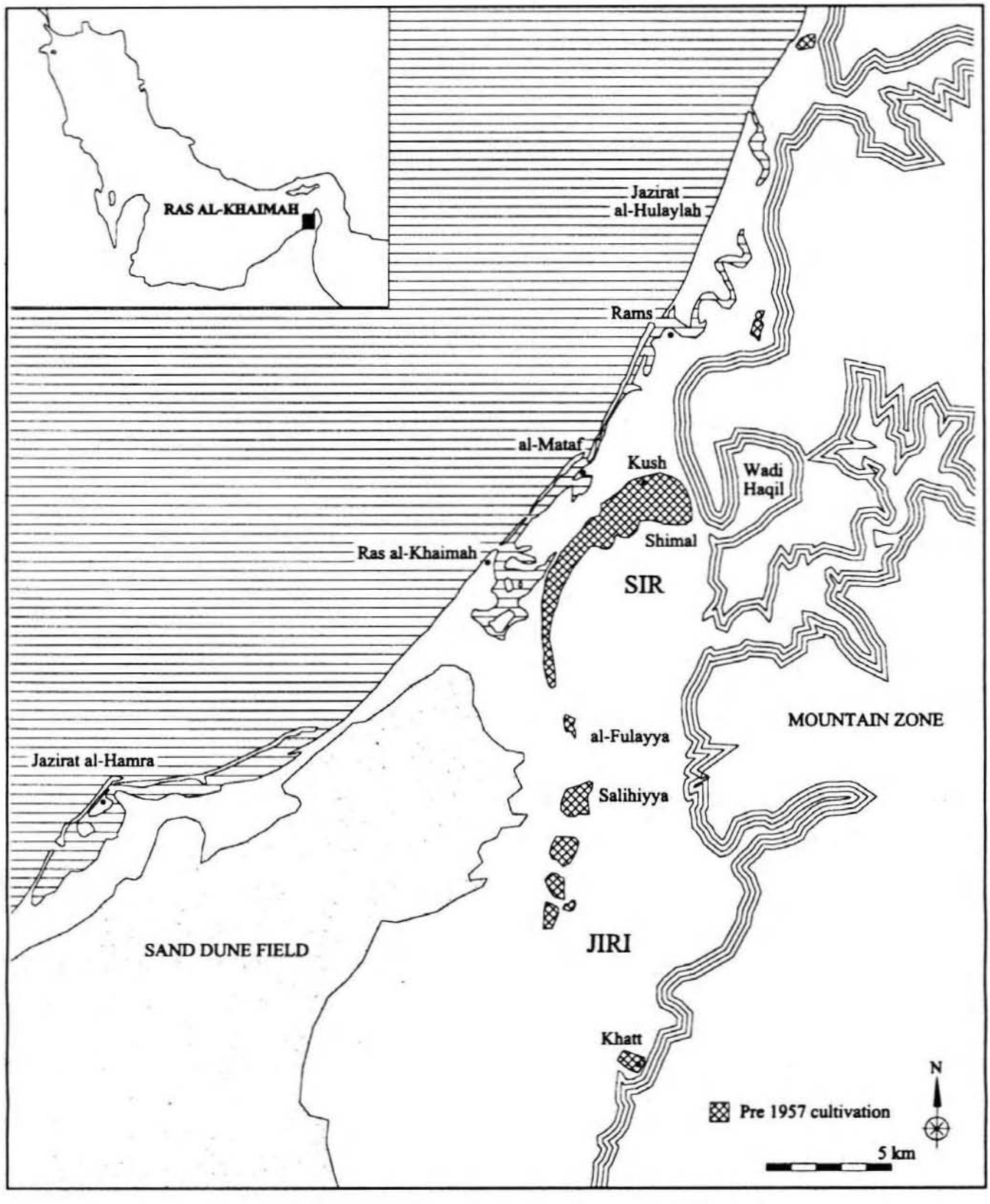

FIGURE 1. *The Ṣīr and Jiri plains of northern Ras al-Khaimah.*

Archaeological Evidence

Archaeological evidence, specifically evidence from archaeological survey, is well suited to the investigation of patterns of rural occupation and exploitation. However, in order to make valid comparisons between different periods, the survey needs to be conducted according to a methodology that is not statistically biased (Cherry & Shennan 1978).

The first archaeological surveys of Ra's al-Khaimah were carried out in 1968 and 1977 by de Cardi (de Cardi & Doe 1971; de Cardi 1975; de Cardi 1985). They were conducted with the specific aim of locating and protecting sites of archaeological importance, an aim which they achieved with notable success. However, the methodology employed makes quantification of the results problematic. Bearing this in mind, the crude tabulation of de Cardi's results in Fig. 2 suggests a dramatic increase in the number of sites between the Early and the Late Islamic periods.[4]

In 1987 and 1988 Vogt carried out an archaeological survey of the Ra's al-Khaimah coastline, concentrating on two areas: the area around the town of Ra's al-Khaimah and the area to the south of Jazīrat al-Ḥamrā' (Vogt 1988; 1994). The sites he located all consist of deflated shell middens on sand dunes. Although he does not deal with the later material in detail, the results indicate a limited occupation of this part of the coast during the Abbasid period, and much wider occupation in the more recent past, possibly between the 17th and 20th centuries.

Period	Date (AD)	Number of sites
Sasanian/Early Islamic	400 - 800	?
Samarran Abbasid	800 - 1000	2 - 5?
11th-13th century	1000 - 1300	2
Al-Maṭāf	1300 - 1600	9
Post al-Maṭāf	1600 - 1900	11

FIGURE 2. *A reassessment of de Cardi's sites (from de Cardi & Doe 1971 and de Cardi 1985).*

Period	Date (AD)	Number of sites
Sasanian/Early Islamic	400 - 800	9
Samarran Abbasid	800 - 1000	15
11th-13th century	1000 - 1300	4
Al-Maṭāf	1300 - 1600	18
Post al-Maṭāf	1600 - 1900	16

FIGURE 3. *A reassessment of the Jazīrat al-Ḥulaylah survey (from Kennet 1994).*

Further north along the coastline, Jazīrat al-Ḥulaylah was surveyed by the present author in 1991 (Kennet 1994). The survey revealed evidence of settlement dating to between the fifth century and the early 20th century, although there is very little indication of occupation during the 11th, 12th, or 13th centuries. At the time of the survey it was not possible to make a reliable distinction between the al-Maṭāf and post-al-Maṭāf assemblages, but it is now clear that material from both periods was found. The survey demonstrated that the occupied area of the island increased considerably from 42.9 ha in the Sasanian/Early Islamic period to 78.7 ha during the Abbasid period, and 218.2 ha in the 14th to 19th century (Kennet 1994: 171–175). These figures suggest a very large settlement, but this is probably deceptive because repeated seasonal settlement in temporary huts can give the impression of larger occupation than actually existed in any one year. A tabulation of the results of this survey is given in Fig. 3.

Twenty-five kilometres to the south, the inland oasis of Khatt was first explored by de Cardi during her 1968 and 1977 surveys (de Cardi & Doe 1971: 252–254; de Cardi 1985: 182–185). In 1992 a more detailed survey of the oasis was conducted, which revealed evidence of continued occupation from the late pre-Islamic period to the present day, with the exception of the 11th to 14th centuries, which are hardly represented (de Cardi, Kennet & Stocks 1994: 53–63).

Of particular interest were two mounds, initially thought to be clearance mounds but later shown to be small archaeological tells (de Cardi, Kennet & Stocks 1994: areas 3 and 4; Kennet 1998). These mounds have yielded evidence of occupation from the late Iron Age through to the fourth or fifth centuries AD (Kennet 1998). Another mound (85) and a flat area to the south-east of the oasis yielded evidence of Abbasid pottery in an area where Early Islamic pottery had also been noted by de Cardi in 1977 (de Cardi 1985: sites 45a and b).

Fig. 4 summarizes the results of the 1992 survey. There is almost no evidence of occupation in the 11th–13th centuries, but there appears to have been a significant increase in the post-al-Maṭāf period.

At the back of the alluvial plain behind Kūsh and al-Maṭāf lies the Wādī Ḥaqīl where Stocks conducted a survey in 1992 (Stocks 1996). Only the edges of the broad wadi were surveyed but 169 sites were found and listed, together with their periods of occupation (Stocks 1996: fig. 2). The site count per period from the survey is summarized in Fig. 5.

Despite inconsistencies in survey methodology and pottery classification, the published archaeological surveys of northern Ra's al-Khaimah all point towards a broadly similar pattern of development which can be summarized thus:

1. There is little reliable evidence for occupation in the Sasanian and Early Islamic period, possibly because the pottery of this period was not recognized.
2. Most of the surveys located more evidence for occupation in the Abbasid period than in the Sasanian and Early Islamic period.
3. There is very little evidence for occupation or activity between the 11th and 13th centuries from any of the surveys.
4. Some of the surveys suggest an increase in the number of sites in the al-Maṭāf period (although the Wādī Ḥaqīl and the Khatt surveys do not show this, possibly because of imprecise dating of the pottery in the case of the Wādī Ḥaqīl survey).
5. Some of the surveys indicate an increase in sites in the post-al-Maṭāf period.

The consistency of the general picture presented by these surveys is compelling, but caution is necessary because the data are not entirely reliable. Some of the surveys listed above dealt with specifically selected areas that may be atypical of the general picture in northern Ra's al-Khaimah. Some of the surveys concentrated on particular types of sites, ignoring or failing to locate others such as small, isolated, rural settlements. The results cannot therefore be taken as being fully representative. In order to address this problem a survey was undertaken in 1994 with the specific aim of gathering data that were properly representative of rural occupation and activity on the Ṣīr and Jiri plains.

Period	Date (AD)	Number of sites
Sasanian/Early Islamic	400 - 800	12
Samarran Abbasid	800 - 1000	15
11th-13th century	1000 - 1300	1
Al-Maṭāf	1300 - 1600	12
Post al-Maṭāf	1600 - 1900	23

FIGURE 4. *A reassessment of the Khatt survey (de Cardi, Kennet & Stocks 1994: fig. 9).*

Period	Date (AD)	Number of sites
Sasanian/Early Islamic	400 - 800	?
Samarran Abbasid	800 - 1000	26
11th-13th century	1000 - 1300	0
Al-Maṭāf	1300 - 1600	17
Post al-Maṭāf	1600 - 1800	31
Post al-Maṭāf	1800 - 1900	109

FIGURE 5. *Site count from the Wādī Ḥaqīl survey (from Stocks 1996: fig. 2).*

The 1994 Survey[5]

The established techniques of 'field walking' that were developed in the ploughed fields of temperate Europe and the Mediterranean do not work in the cultivated areas of the Gulf. This is because of the ground disturbance caused by date-palm agriculture. Construction of irrigated date-palm groves necessitates the ground surface being scraped up into bunds that have eroded and been re-built many times. The archaeological material in the soil has been constantly moved and has lost any connection with its original location. Discreet scatters of pottery that once represented human occupation have been turned into a continuous background noise of low-density pottery scatter. The same problem was encountered by the al-Ḥasā, Sīrāf and the Ṣuḥār surveys (Adams *et al.* 1977; Costa & Wilkinson TJ 1987: 79–86; Whitcomb 1978: 96; Wilkinson TJ 1974: 129).

In order to overcome this problem an adaption of the methodology established by the Sīrāf and the Ṣuḥār surveys was employed (Costa & Wilkinson TJ 1987: 79–86; Wilkinson TJ 1974: 129). The 1994 survey methodology involved the definition of surface pottery-collection 'Areas'. For convenience, these were based on the existing or fossil field system where such existed, or, where it did not, arbitrary areas were defined. A large selection of pottery was collected from each of the Areas and ubiquity analysis was then used to compare the relative occurrence of pottery from different periods. To give an hypothetical example of the results, it might be possible to say that Sasanian pottery was present in 10 out of 100 Areas, whilst Late Islamic pottery was present in 40 out of 100 Areas. This would be taken as an indication that rural activity was more intense in the Late Islamic period than it was in the Sasanian period. Although crude and imperfect, this method gives a basis for comparing the density of rural activity where it would otherwise be impossible.

The pottery collection Areas were organized into three transects spaced at roughly equal distances across northern Ra's al-Khaimah between Shimāl and Khatt (Fig. 6). Each transect was positioned so that it crosses the plain from the coast or sand dunes in the west, to the foot of the mountains in the east. The Areas were then

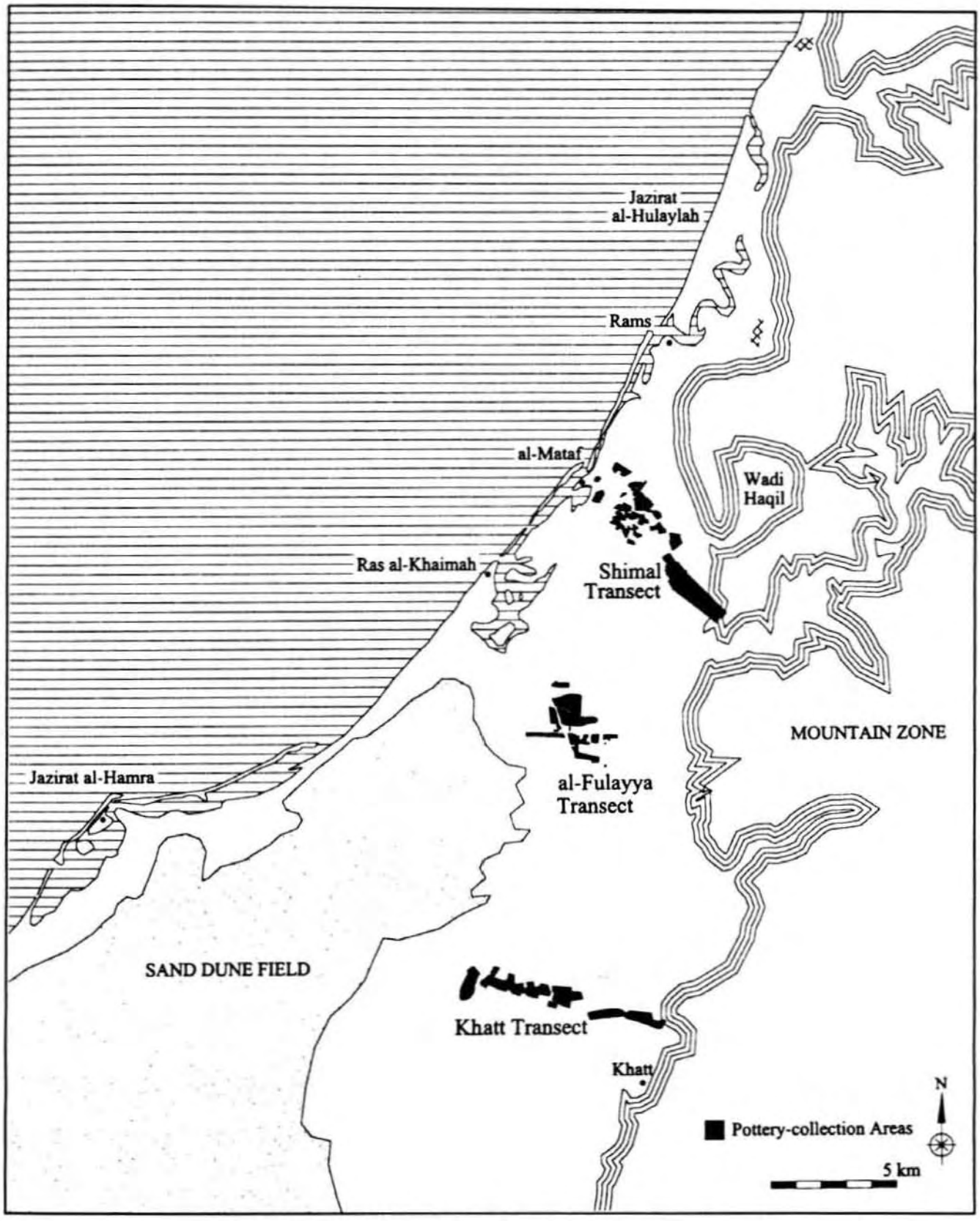

FIGURE 6. *Location of the 1994 survey transects.*

defined and located using aerial photographs. The transects were located at Shimāl in the north; at Khatt in the south, 22 km. from al-Maṭāf; and at al-Fulayyah, roughly midway between Shimāl and Khatt, 11 km. from al-Maṭāf. Of the 88 Areas that were defined, 30 are in the Shimāl transect, 41 at al-Fulayyah, and 17 at Khatt.

Pottery and Dating

The chronology of the survey is based entirely on the pottery (Fig. 7). For the period between 2000 BC and 400 AD the pottery sequence from this part of Arabia is well established.[6] For the period after 400 AD, recent excavations at Kūsh and al-Maṭāf have clarified the sequence up to the time of the abandonment of al-Maṭāf in about 1575 AD.[7] The period after 1575 AD until recent times (the post-al-Maṭāf period) is more difficult to define as no sequence has yet been excavated through this period. For the purposes of this survey, any type or class of pottery which was found frequently on the survey and which did not occur in the Kūsh or al-Maṭāf sequences was assigned to the post-al-Maṭāf period. The Kūsh and al-Maṭāf assemblages are large (32,006 and 46,377 sherds respectively) and the absence from them of a commonly-occurring type or class of pottery is conclusive evidence that the type or class was not in circulation during the life-span of the two sites. There is no space for a more detailed description of this assemblage here but the most common forms of 'Julfar ware' are shown in Fig. 8.[8]

Analysis

Figs 9 and 10 show the number of Areas containing pottery from the ten chronological periods.[9] The long-term trends are immediately clear. Between the Wadi Suq period and the 13th century there is evidence for a low, fluctuating level of activity on the plains. During some periods, notably the Late Bronze Age, the Sasanian/Early Islamic period, and the 11th–13th centuries, almost a quarter of Areas have yielded some evidence of activity. During other periods, notably the Umm an-Nar and the Préislamique Récent [PIR], there is almost no evidence of activity. However, the most obvious and dramatic development is the explosion of activity that began in the al-Maṭāf period and continued into the post-al-Maṭāf period. More than 75% of Areas have yielded evidence of activity during these periods.

In considering these data, account needs to be taken of burial by alluviation and rates of survival, both of which can be expected to have biased the counts towards the later periods. The statistical reliability of the data from this survey is not good enough to allow us to draw major conclusions about activity in the pre-al-Maṭāf periods where numbers are quite small and are therefore more likely to be influenced by chance and error. There can be no doubt, however, about the increase in activity in the al-Maṭāf period, a development which was also hinted at by some of the earlier surveys discussed above.

In addition to a simple tabulation, comparison of the Area counts between the three transects can give further insights into the development of the Ṣīr and Jiri plains. As the transects each contain a different number of Areas it is necessary to use percentages in order to compare them. The comparison is shown in Figs 11 and 12.

Although the general pattern of growth and decline observed above in Fig. 10 is still evident, the comparative analysis indicates local differences on the Ṣīr and Jiri

Period	Pottery
Sasanian/Early Islamic	Classes which predominate in the early phases at Kūsh, e.g. incised storage vessels, Honeycomb, Clinky (Kennet 1994: ware 17, 36).
Samarran Abbasid	Classes of the so-called 'Samarra horizon': tin glazed wares, splash wares, early sgraffiatos (Kennet 1994: ware 18, 23, 24).
11th-13th century	Hatched sgaffiatos (Kennet 1994: ware 18g), monochrome sgraffiatos, and coarse wares associated at Kūsh.
Al-Maṭāf	Pottery common at Al-Maṭāf such as Longquan celadon, Persian blue-speckled ware, 'Julfar ware' types (Kennet 1994: ware 2, 7).
Post al-Maṭāf	Classes which do not occur at Al-Maṭāf or Kūsh or in the published pre-Sasanian assemblages from the area, mostly coarse ware types (Fig. 8), Willow-Pattern, enamelled porcelains.

FIGURE 7. *Pottery classes and types used to define the chronological periods.*

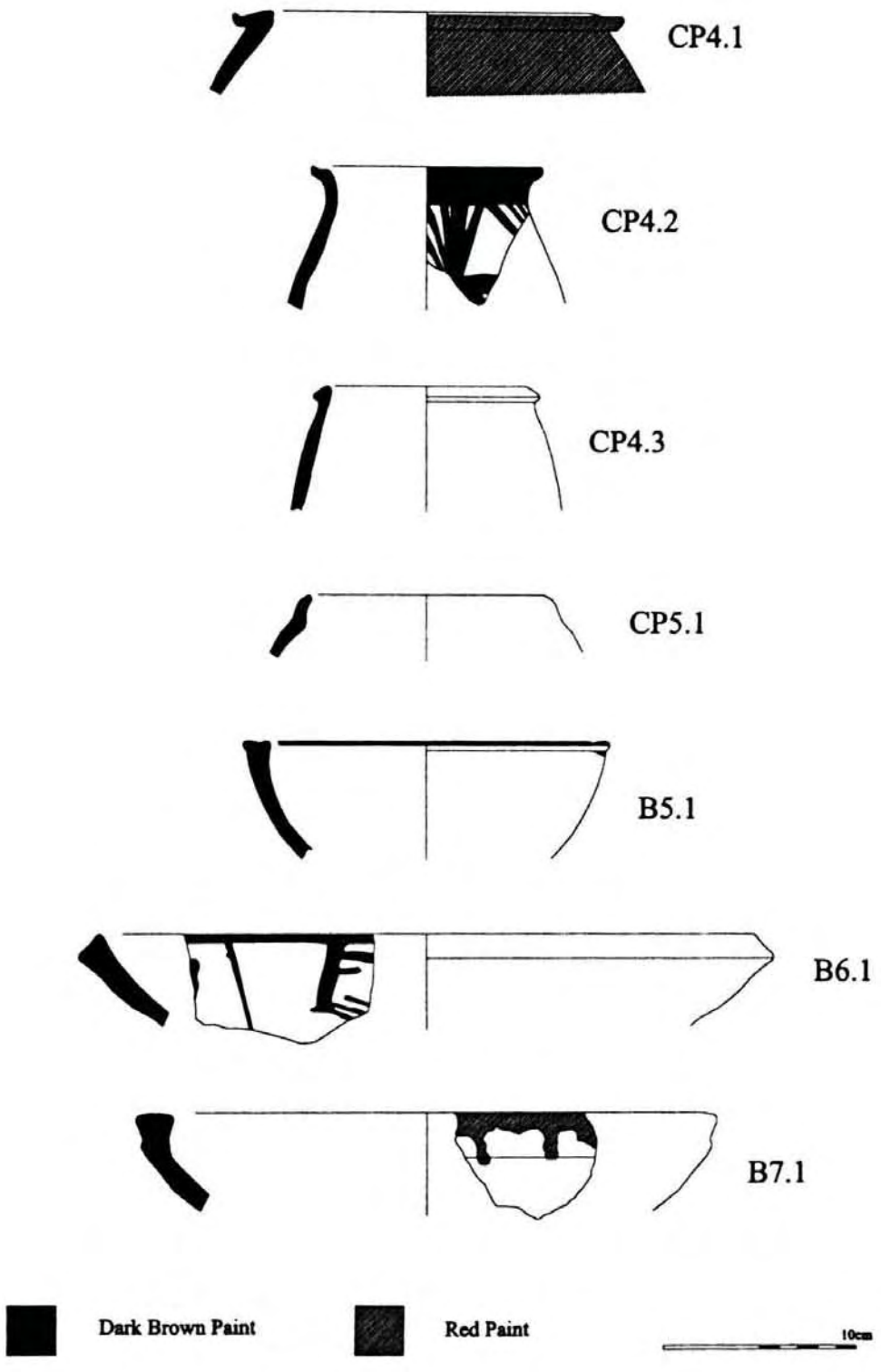

FIGURE 8. *'Julfar ware' types used to define the post-al-Maṭāf period.*

plains, even over the relatively short distance between Shimāl and Khatt. These trends will be further discussed below.

Discussion

As stated earlier, this paper has as its main aim an analysis of the development of the Ṣīr and Jiri plains over the past two millennia. Nonetheless, information relating to more ancient periods was retrieved and will therefore briefly be discussed here.[10]

The pre-Sasanian period

The survey evidence suggests a limited amount of rural activity across the plains in the Wadi Suq period and Late Bronze Age. Although there are very few known settlements of this period in the area, a considerable number of monumental collective tombs are known.[11] It is therefore possible that the tombs were constructed and used by a population living in dispersed rural settlements across the plains. More research needs to be done to investigate this rather tentative hypothesis.

	Umm an-Nar	Wadi Suq	Late Bronze	Iron Age	Préislamique Récent	Sasanian /Early Islamic	Samarran Abbasid	11th-13th century	Al-Maṭaf	Post al-Maṭaf
Total	0	5	19	8	1	18	6	17	66	71

FIGURE 9. *Tabulation by period of the Area counts from the 1994 survey.*

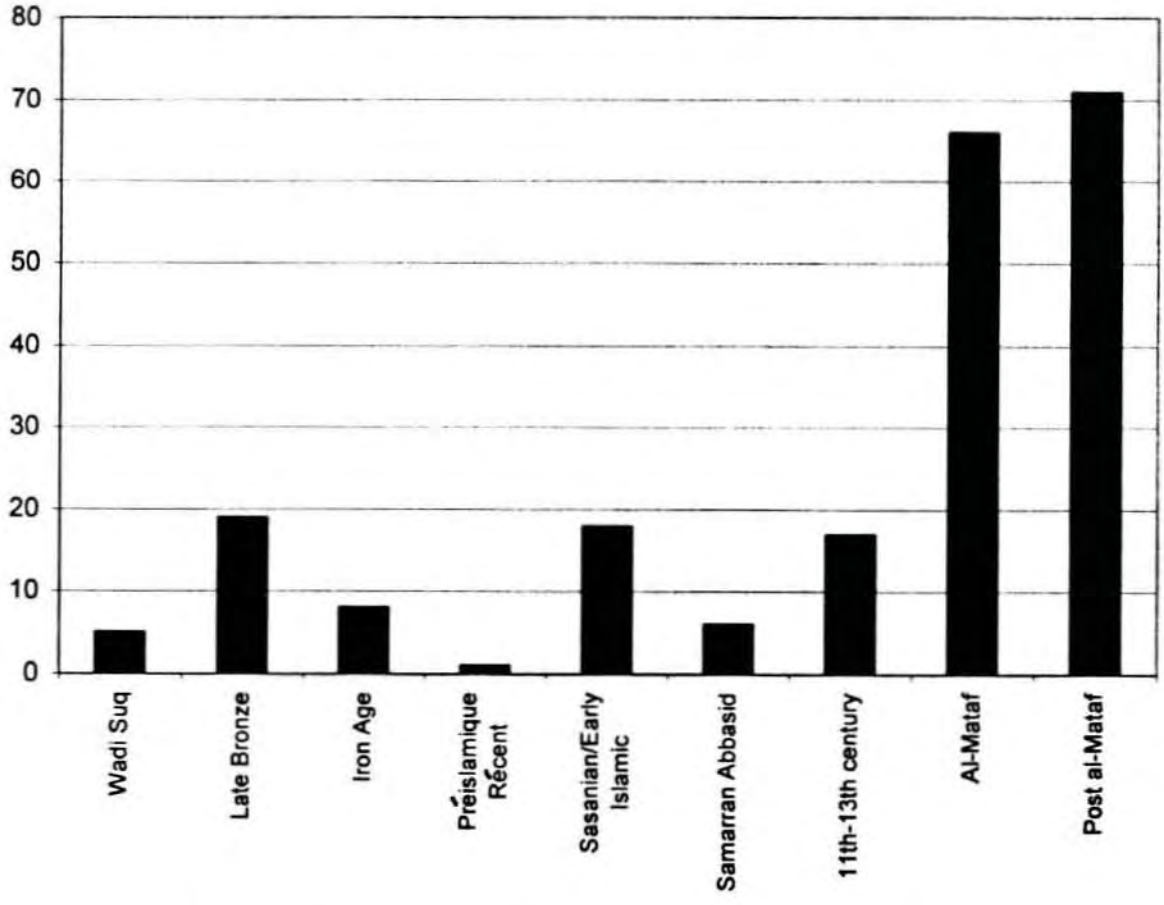

FIGURE 10. *Graph by period of the Area counts from the 1994 survey.*

	Wadi Suq	Late Bronze	Iron Age	Préislamique Récent	Sasanian /Early Islamic	Samarran Abbasid	11th-13th century	Al-Mataf	Post al-Mataf
Total transect Areas									
Shimāl	2	2	5	1	10	4	7	24	24
Fulayya	3	11	0	0	5	2	8	34	32
Khatt	0	6	3	0	3	0	2	8	15
% of transect Areas									
Shimāl (30)	6.67	6.67	16.67	3.33	33.33	13.33	23.33	80.00	80.00
Fulayya (41)	7.32	26.83	0.00	0.00	12.20	4.88	19.51	82.93	78.05
Khatt (17)	0.00	35.29	17.65	0.00	17.65	0.00	11.76	47.06	88.24

FIGURE 11. *Comparison of Area counts by period between the three transects (by Area count and percentage of transect Areas).*

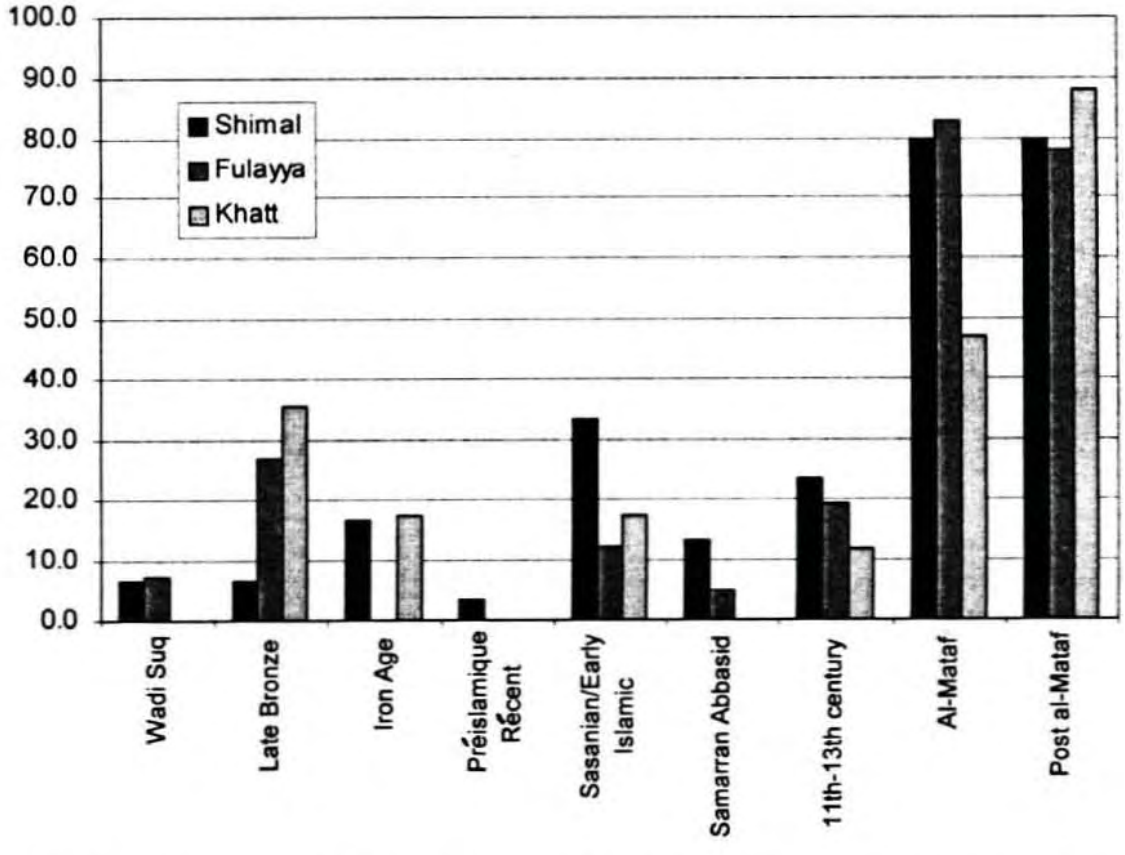

FIGURE 12. *Graph of the comparison of Area counts by period between the three transects (by percentage of transect Areas).*

There is considerably more evidence for activity during the Late Bronze Age than in the Wadi Suq period. Given the small number of Areas involved, it is possible that this is simply an accident of the data, but it might also be an indication of important changes in the pattern of rural occupation between these two periods, and requires further investigation. The comparison presented in Fig. 12 suggests that the relatively high level of activity in the Late Bronze Age appears to have been predominantly in the Khatt and al-Fulayyah transects, with Shimāl being hardly affected.

In contrast to other parts of the Oman Peninsula, there is a notable lack of evidence for settlement in northern Ra's al-Khaimah in the Iron Age and PIR periods. The 1994 survey has done little to increase our knowledge of these periods, but it does demonstrate that there was some rural activity in the area during the Iron Age.

The Sasanian/Early Islamic period

The survey has revealed only limited evidence for rural activity during this period. There appears to have been more activity in the Shimāl transect close to the coast than in the inland transects (Fig. 12).

Three sites are known from which there is evidence of more substantial occupation: Ḥulaylah (Sasaki 1995; 1996; 1998), Kūsh (Kennet 1997) and areas 3 and 4 at Khatt (de Cardi, Kennet & Stocks 1994: areas 3 & 5; Kennet 1998). It is quite likely that there was at least one more such site at a place called Salihiya (Ṣāliḥiyah) where de Cardi recorded a tell in 1968 that has since been destroyed (de Cardi & Doe 1971: 251).

It is possible that these three or four sites were small villages. However unimpressive they may be, they represent the top of the local settlement hierarchy and may have been the only permanent settlements that existed during this period.

Occupation at this time seems, therefore, to have consisted of a few relatively small sites, perhaps small villages, which were widely spaced across the plain. In between these sites the survey has shown that there is evidence of limited activity, perhaps resulting from cultivation or smaller temporary settlement.

The Samarran-Abbasid period

The early ninth century appears to have witnessed some important developments. Occupation at the sites of Ḥulaylah, Kūsh, and Khatt seems to have ended or altered significantly and evidence for activity on the plains in the al-Fulayyah and Shimāl transects is less frequent than in the previous period.

The rarity of tenth-century pottery at Kūsh suggests a decline or abandonment of the site at that time.[12] Pottery of this period is found at Ḥulaylah but its distribution across the island suggests that the settlement had moved north, away from the earlier Sasanian/Early Islamic site. Occupation seems to have consisted of palm-frond huts, shell middens and hearths, with associated fish bones and a high percentage of imported Mesopotamian glazed pottery (Sasaki 1995: 8–14; Kennet 1994: fig. 6). At Khatt, the Sasanian/Early Islamic mounds have yielded no evidence of occupation in the ninth century, but high-quality Mesopotamian pottery has been found in the flat area to the southwest (de Cardi, Kennet & Stocks 1994: 59–61). Evidence of settlement similar to that at Ḥulaylah has also come to light along the coast at Jazīrat al-Ḥamrā' and in a transect Area behind al-Maṭāf where scatters of high-quality pottery have been found on the coastal sand dunes.

There is no evidence for the existence of a settlement hierarchy in this period: no sites stand out as being larger or more visible than others as they had in the Sasanian/ Early Islamic period. Instead occupation seems to have been dispersed in small, possibly seasonal encampments. Many of these were located along the coast which seems to have become an important focus for settlement.

It is possible that settled communities declined whilst nomadic, or semi-nomadic groups began to predominate during this period. Nonetheless, the high proportion of glazed Iraqi ceramics in coastal assemblages demonstrates that trade with Mesopotamia continued, whatever the nature of the local economy.

The 11th–13th centuries

This period has normally been regarded as an economic 'dark age' in the Gulf, and almost no occupation is known from the Arabian littoral.

In this respect Ra's al-Khaimah is unusual in having two sites where evidence for such occupation has been found. The sites are Kūsh (Kennet 1997) and 'Sheba's palace', a defended hilltop site overlooking the Shimāl plain three kilometres north of Kūsh (Franke-Vogt 1996). It is also possible that Salihiya, the site mentioned above, was occupied at this time.

Evidence for activity on the plain is slightly more common than it was in the Samarran-Abbasid period, but there is no evidence for the Samarran-Abbasid coastal sand-dune sites that were noted above.

The al-Maṭāf period

This period might be described as something of an economic boom. We have already noted the very

substantial increase of evidence for activity on the plains. The stimulus for this increase in activity may have come from the coast, as it initially affected the Shimāl and al-Fulayyah transects much more than it did the inland Khatt transect — a conclusion that was also suggested by the 1992 Khatt survey (Fig. 4).

It was at the beginning of this period that Kūsh was finally abandoned and the site of al-Maṭāf was founded three kilometres away on the coast. Excavations by Professor Sasaki have charted the very rapid development of al-Maṭāf from a small fisherman's camp to a large, wealthy town in the space of less than a century (Sasaki & Sasaki 1992). It seems unlikely to have been a coincidence that the development of this large urban centre occurred at the same time as unprecedented levels of rural activity: the two phenomena must be related.

It seems possible that the high levels of rural activity were stimulated by the development of the coastal town, whose urban population would have provided a large market for the agricultural produce of the plain.

The post-al-Maṭāf period

By this time al-Maṭāf had declined and been abandoned whilst other coastal towns, such as Ra's al-Khaimah, had developed into leading centres. The level of rural activity remained very high throughout this period. The level of activity within the Khatt transect appears to have caught up with, or perhaps even overtaken, that within the transects closer to the coast suggesting, perhaps, some changes in the orientation of the economy.

Conclusion: the Hormuzi economic boom

The most important point to emerge from this analysis is without doubt the dramatic increase in the level of rural activity in the al-Maṭāf period.

It has been suggested above that the boom in rural activity was stimulated by the close proximity of al-Maṭāf, which was rapidly developing into a wealthy trading emporium on the coast. But what stimulated the sudden development of al-Maṭāf? During the 13th century the two cities of Kūsh and Old Hormuz rivalled each other for control of the Gulf trade, a contest that was eventually won by Hormuz under the rulership of Maḥmūd Qalhātī at the beginning of the 14th century (Aubin 1953: 102; Piacentini 1992: 171–173). It was around the same time that Hormuz moved from the site of Old Hormuz in the Mīnāb delta to the island of Jarūn, and thus established a degree of autonomy from the politics of the Iranian mainland (Morgan 1991: 71–78; Piacentini 1975: chapter 12; Piacentini 1992: 172–173).

The history of the Gulf during the 14th and 15th centuries is very much the history of Hormuz (Williamson 1973: 57; Aubin 1953; Piacentini 1975). Hormuz was the link between India and the markets of Central Asia (Bouchan & Lombard 1987: 57). Trade routes ran from Hormuz through cities such as Kirmān, Yazd, Sulṭāniyah, Shīrāz, Kāshān, and Tabrīz; cities that easily surpassed the biggest cities in contemporary Europe in size and wealth (Ashtor 1976: 264–267; Petrushevsky 1968: 506–508). Trade along these routes reached a peak in the late 15th century, both in variety and volume (Ferrier 1986: 423). The renewed trade and economic prosperity of the Gulf that was funnelled through Hormuz was therefore a direct result of the development of inter-regional trade through the enormously wealthy cities of central Iran (Williamson 1973: 54).

At the peak of its power Hormuzi influence extended from Bahrain to Qalhāt, and al-Maṭāf was amongst Hormuzi possessions on the Arabian side of the Gulf (Piacentini 1992: 175. Wilkinson JC 1973: map 2). Al-Maṭāf was known for its pearls, but it probably also provided horses, food, and water to Hormuz which entirely lacks natural resources and has only brackish water (Bakhtiari 1979; Duarte Barbosa 1918–1921: 73–74; Ibn Baṭṭūṭa 1958–1971, ii: 400; Piacentini 1992: 174; Stein 1937: 192). Williamson has discussed the archaeological evidence for a resumption of trade and prosperity in the Gulf during the Hormuzi period between the 14th and 15th centuries (Williamson 1973). His archaeological survey of the Iranian littoral suggests an increase in occupied sites and he writes of 'a time of dense settlement around the Gulf' (Williamson 1973: 57, map 3).

The whole picture therefore fits together fairly well. Gulf trade boomed in the 14th century in response to the economic 'pull' of the great cities of Īl-Khānid and Timurid Iran, and the trade between Europe, the Far East and Central Asia. Hormuz was the centre of this trade in the Gulf and became extremely wealthy, as did its possessions on the Arabian side of the Gulf which provided it with food and water, as well as pearls, and possibly horses. One of those possessions was al-Maṭāf, which rapidly grew into a wealthy town. The growth of al-Maṭāf stimulated the development of a flourishing agricultural economy in its own hinterland, and activity increased dramatically on the Ṣīr and Jiri plains, where it seems likely that food was grown to feed the populations both of al-Maṭāf and of Hormuz.

Notes

[1] This paper is an adaption of sections of the author's PhD dissertation (Kennet 2000).

[2] This is based on an estimate of five people to one house.

[3] For an analysis of the agricultural economy of the plains in 1966 see Bowen-Jones *et al.* 1967: 73–133.

[4] The periodization used in this paper is based on the ceramic sequence from the excavations of Kūsh and al-Maṭāf, both of which are currently in the process of publication.

[5] The survey was kindly funded by the Gerald Averay Wainwright Fund for Near Eastern Archaeology and the Department of Antiquites and Museums of Ra's al-Khaimah, whose Director, HH Shaykh Sulṭān bin Ṣaqr al-Qāsimī, is owed special thanks. The survey team were Kate Bonner, David Connolly, and Katelyn Flavin.

[6] For the Wadi Suq period and Late Bronze Age see Velde 1992; for the Iron Age see Magee 1995; for the Préislamique Récent (PIR) see Mouton 1992.

[7] See Kennet 2000 chapters 3, 4 and Appendix.

[8] See Kennet 2000: 92–98 for a full discussion of the dating of the survey pottery.

[9] A full tabulation of the pottery can be found in Kennet 2000: table 27.

[10] The author is grateful to Christian Velde who identified the Wadi Suq, Late Bronze Age, and Iron Age pottery from the survey.

[11] e.g. de Cardi & Doe 1971: 242–258; de Cardi, Kennet & Stocks 1994: 66–70. More Wadi Suq tombs have recently come to light on the plains: these will be the subject of a forthcoming paper by Christian Velde and the present author.

[12] Personal observation based on study of the Kūsh assemblage.

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Author's address

Dr Derek Kennet, Department of Archaeology, University of Durham, Durham DH1 3LE, UK.

e-mail derek.kennet@durham.ac.uk