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Kush: a Sasanian and Islamic-period archaeological tell in Ras al-Khaimah (U.A.E.)

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Introduction

In the report on her 1977 survey de Cardi described an 'extensive area of high mounding' covered with late Islamic pottery in the Shimal area of Ras al-Khaimah (1). Further investigation of this site, including surface pottery collection and a small test sounding, has shown it to be a large archaeological tell with an occupation sequence dating from the Sasanian period to the thirteenth century AD. A full excavation programme has been organised to investigate the cultural and economic development of the site and to provide a ceramic and environmental sequence for the area.

The Site

Kush (*Kūsh*) (25° 49' 22", 56° 00' 25.7") is situated just inside the Gulf, approximately seventy kilometres south of the Straits of Hormuz. To the east, west and south the site is surrounded by the fertile and relatively well-watered Shimal plain, an alluvial deposit densely planted with date-palm groves and covered with small rural settlements. Close by to the east rise the mountains of the Musandam Peninsula, the proximity of which give the plain a high water-table. The site now lies about two and a half kilometres southeast of the modern coast but was originally close to the edge of a lagoon which has now silted up to become a sebkha flat. The location once gave access to both agricultural and marine resources as well as trade routes, a combination which is unique on the western coast of the Oman Peninsula and which has made the Shimal area a focal point of settlement since at least the third millennium BC.

The site consists of a tell measuring 120 m north-south by 100 m east-west (Figs 1 & 3). This is small by comparison with other areas of the Near East such as Iraq, Iran and the Levant where mud-brick architecture is the norm but, in the Oman Peninsula where date-palm-frond building is the preferred type of architecture, tells do not form quickly and are quite rare. Therefore the very existence of Kush, which stands out as the largest archaeological tell in the U.A.E., presents something of an enigma. It is not a simple tell but appears to be an

Fig. 1.
Kush from the west.

irregularly-shaped conglomeration of three or four separate mounds, suggesting a complicated development. The central part of the site stands 6.5 m above the level of the surrounding plain and there appear to be at least a further 1.5 m of archaeological stratigraphy below ground level.

The site has been slightly damaged to the east and south where a cemetery wall has been constructed. Otherwise, apart from the effects of erosion, it is in good condition and does not seem to have been greatly disturbed.

The Excavations

Trench B

In the spring of 1994 a two-metre wide test-trench was dug into the side of the mound over a four-day period (Fig. 3). Although only a limited sounding, the excavation revealed a useful sequence. The phases uncovered are briefly described below in relation to the section drawing (Fig. 4).

A This phase consists of the top few centimetres of silt and sand; somewhat disturbed but nevertheless rich in pottery and flecks of charcoal. There is some evidence of palm-frond matting within the uppermost 5 cm. These layers are quite similar in origin to those of phase 'B' but are more disturbed.

B This phase is composed of a series of horizontally-bedded, thin, loose, silty and sandy layers, rich in pottery, bone and flecks of charcoal. The layers are very suggestive of occupation debris.

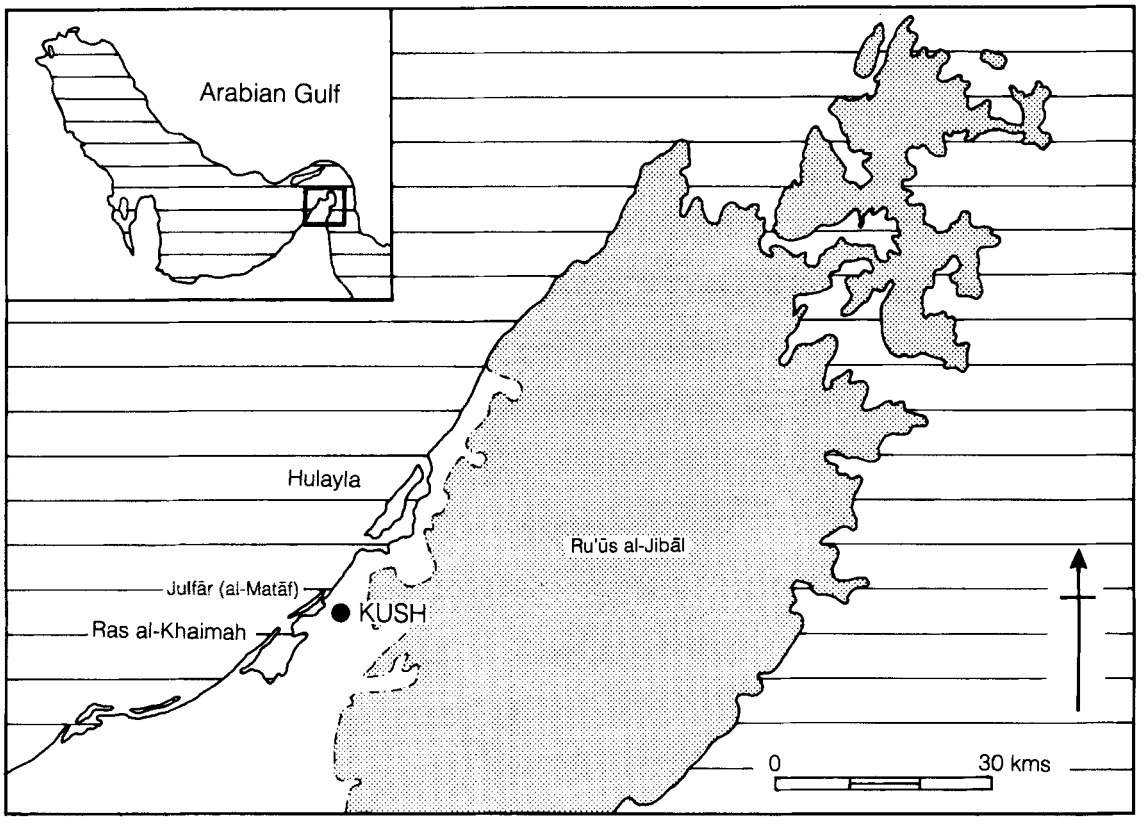

Fig. 2.
Location map.

Occasional postholes suggest that the occupation consisted of palm-frond huts (*'arīsh*).

C The layers which make up this phase are probably similar in origin to those of phases 'A' and 'B' but are thicker and more complicated. Together with the more or less horizontally-bedded layers of loose silt and sand, are fairly thick layers of charcoal and ash interrupted by shallow cuts and hearths all suggestive of occupation debris which accumulated around *'arīsh* structures. Although the top three phases appear to be quite similar in make-up and origin, they are separated one from the other by clear breaks in deposition.

D The layers of this phase are slightly more clayey and more compact than the layers of the overlying phases. This is probably due to the fact that they result, at least in part, from material eroded from mud-brick buildings. Towards the outer edge of the tell there are some lumps of mud brick suggesting the remains of walls. There is also evidence of some shallow pitting. The maximum thickness of the deposits of this phase is around 1 m, suggesting that it accumulated over a considerable period of time. Most of the phase is horizontally-bedded. Phase D probably represents the last phase of mud-brick architecture on the site.

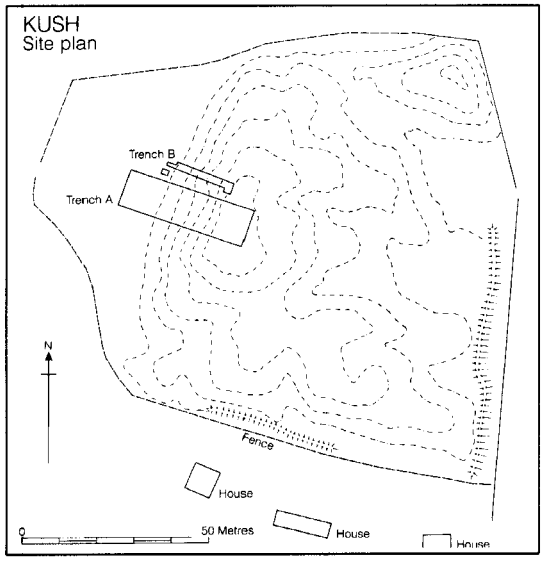

Fig. 3.
A contour plan of Kush showing the location of trenches A and B (contours at 1 m intervals).

E Phase 'E' is a vertically-sided pit which was cut into the layers of phase 'D'. The lowest levels encountered were charcoal-rich.

F Phase 'F' is made up of layers which are more gravelly than those of the overlying layers. The uppermost layers are horizontally-bedded whilst those lower down slope quite steeply and appear to bank up against the sides of the structure of phase 'G'.

G Phase 'G' consists of a small section of a much larger structure. The part which has been exposed consists of a length of irregular but substantial walling made of rounded limestone pebbles (up to 3 cm) held together by a very compact silt and fine sand matrix which is as hard as mortar. The two metres of wall which are exposed in the sounding appear to be curved and could be part of a round structure such as a tower. The exact composition of the matrix is still to be determined. The gravel which is such an abundant component in the lower levels of phase 'F' must result from the weathering of this structure.

H This phase consists of a circular feature constructed of dressed limestone with a small hole in the western side. It was cut during the construction of the phase 'G' structure.

I This phase is represented by a small section of gently-sloping layers consisting of compact silt and mud-brick tumble which are truncated to the west. Too little is exposed to allow an interpretation: the layers appear to run underneath phase 'G'.

J A series of steeply-sloping, silty deposits covering a thick deposit with a high humic content and green silty matrix which appears to have been a cesspit or rubbish deposit. From this layer came a large collection of Sasanian to early Islamic period pottery. Phase 'J' formed behind the mud-brick wall of phase 'K'.

K This phase consists of a mud-brick wall behind which Phase 'J' appears to have formed. It seems that 'K' represents a phase of mud-brick architecture which had gone out of use by the time that 'J' was deposited.

L Phase 'L' consists of a series of steeply-sloping, compact silty layers which formed up against the mud-brick wall of phase 'K'.

M This phase describes a small sounding below phase 'L' consisting of a fine silt deposit with very little pottery underlying the wall of phase 'K'.

N Phase 'N' is made up of a thick, loose, silt with gravel. Interpretation of this deposit causes some problems: it may have resulted from the erosion of mud-brick buildings close by.

O This phase consists of a section of mud-brick or pisé wall standing only two-course high buried in phase 'N'.

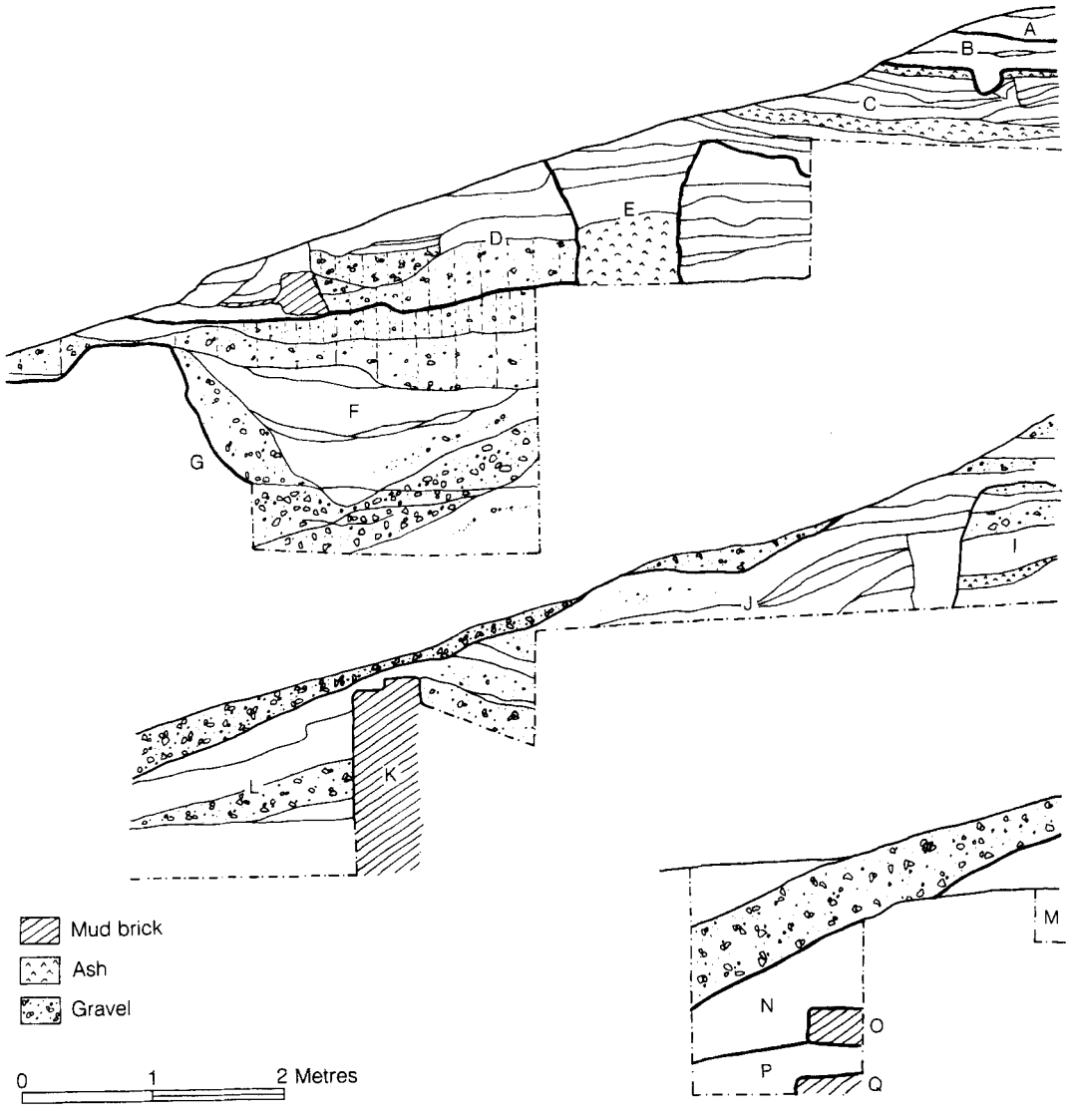

Fig. 4.
The northern section of trench B showing the various phases defined.

P Phase 'P' is a similar deposit to phase 'N' but below wall 'O'.

Q Phase 'Q' consists of a small stub of mud-brick or pisé wall below phase 'P'. This is the earliest evidence of architecture yet uncovered at the site but there is unfortunately no associated dating evidence.

The final phases ('A' to 'C') appear to lack any evidence of substantial architecture. These phases can be dated to the twelfth and thirteenth centuries and certainly appear to represent the final decline of the settlement before its complete abandonment by the fourteenth century. In phase 'D' there are strong indications that mud-

brick buildings were still in use on the site although they do not appear in the trench. In phase 'G' there is evidence of a large and substantial structure which might be military in function which would appear to date to around the ninth or tenth centuries. Below this phase 'J' dates to the sixth or seventh centuries and covers phases 'K' to 'Q' in which there is evidence for mud-brick architecture on the site. There is no reliable dating evidence for these phases but they date to the Sasanian period or earlier.

Trench A

In the first full season of excavation in 1995 trench A was opened (Fig. 3). The location is intended to cut into the highest part of the tell and the aim is to excavate a complete sequence through the mound. The trench measures 10 m wide and will extend in length from 10 m to about 25 m as excavation continues.

During the 1995 season the latest levels of occupation were excavated down to an average depth of about 1 m. The stratigraphy was complicated and consisted of thin occupation layers associated with numerous postholes, ovens, a few plaster or mud floors and one cobbled surface together with a mud-brick- and beachrock-lined well. The entire area was very heavily pitted during the latest stages of occupation: the pit fills consisting of silty deposits containing shell, bone and pottery. There was no evidence of mud-brick architecture during the latest phase of occupation although a number of mud-brick walls began

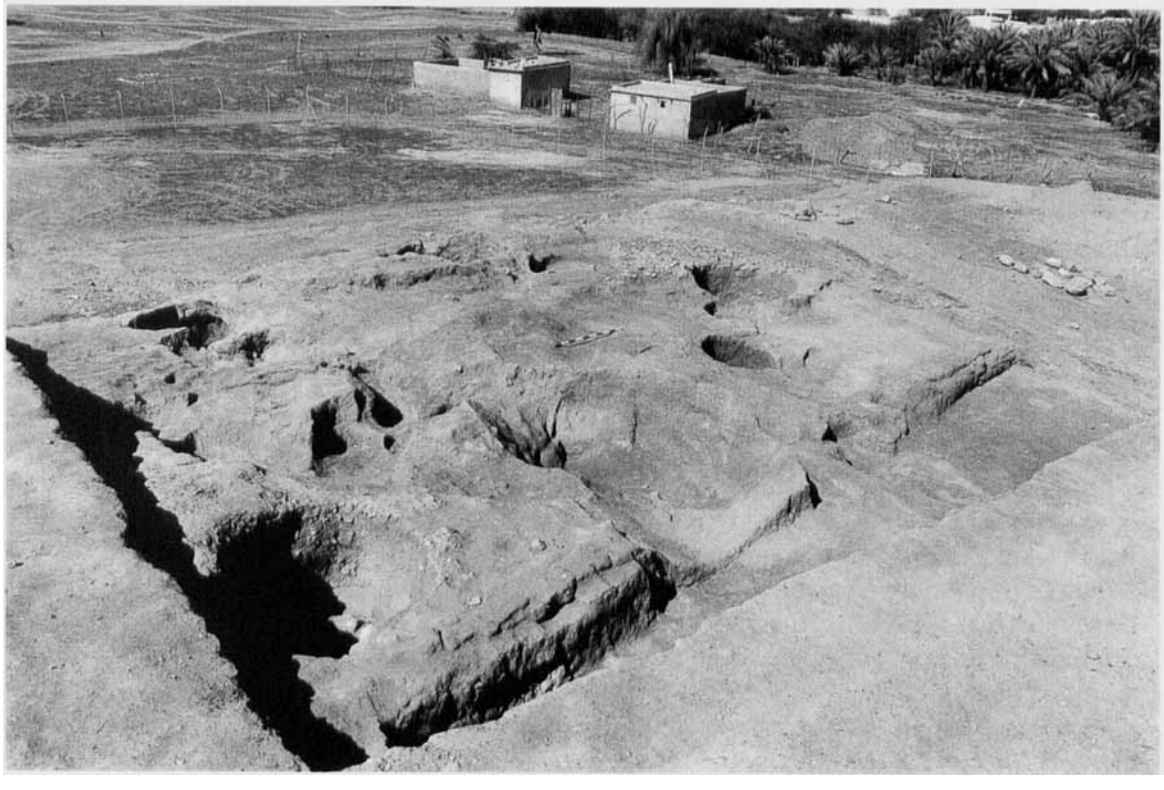

Fig. 5.
A general view of trench A from the southeast during the 1995 season.

to come to light across the trench from the preceding phase. The levels uncovered are very similar to phases 'A' to 'C' of trench B and provide an opportunity to understand the latest period in the site's life. They appear to represent sporadic occupation in *'arīsh* structures on a tell where the latest mud-brick structures had already gone out of use and collapsed. Interspersed with the *'arīsh* structures was the heavy pitting which suggests that occupation continued nearby on the tell even when there is no direct evidence for it within the area of the trench. Figure 5 illustrates the nature of the archaeology in these latest levels.

The Pottery

A selection of pottery from trenches A and B and the surface collection is presented here to give an impression of the types found on the site and to present the dating evidence for the occupation sequence. It is hoped that the Kush sequence will allow us to tie the Iraqi, Iranian and Chinese chronologies together and solve some of the dating problems which persist in Islamic pottery studies, as well as giving information about trading activities at Kush specifically and in the Indian Ocean more generally.

Pottery catalogue (Figs 6 & 7)

1 Trench A, 1076 (residual). Fig. 6. Rim of a fine-orange-painted-ware-jar; black painted decoration on a well-levigated, orange body. This ware has been found at various sites in the Gulf and also at Tepe Yahya in Iran where it can be dated to the third or early fourth centuries AD (2).

2 Trench B, Phase J. Fig. 6. Large incised storage jar. Well fired; grey body (Munsell N5); common lime inclusions; incised decoration.

3 Trench B, Phase J. Fig. 6. Large incised storage jar. Soft-fired; medium grey body (Munsell N5), light towards edges; dense, badly-sorted black opaque inclusions; incised decoration exterior.

4 Trench B, Phase J. Fig. 6. Large incised storage jar. Well fired; medium dark grey (Munsell N4) with lighter edges; vegetable temper and lime spalling.

Sherds 2, 3 and 4 belong to a tradition of large incised storage vessels which have been found in a number of contexts in the Gulf and Iran, all of which can be dated very broadly to the late Sasanian or early Islamic period (third to seventh centuries AD) (3).

5 Trench B, Phase J. Fig. 6. Large carinated bowl with a degraded turquoise, alkaline glaze. The body is soft-fired; greyish orange (Munsell 10 YR 7/4) with no evident inclusions and a slightly grainy structure. No exact parallels could be found for this type although it is certainly to be placed in the fourth to seventh century bracket, possibly towards the later end.

6 Trench B, Phase F. Fig. 6. Tin-glazed bowl. Well fired; greyish yellow body (Munsell 5 Y 8/4); air holes and occasional, sub-rounded, quartz grains (0.3 mm); the tint of the glaze is slightly different on the interior and exterior, the latter having a slightly bluer tint. The form and the tin glaze place this bowl amongst the so-called 'Samarra horizon' wares, datable to the first quarter of the ninth century or later (4). The sherd displays a low raised ridge on the exterior similar to a number of bowls of this period and suggestive of moulded manufacture (5).

7 Trench B, Phase D. Fig. 6. Tin-glazed bowl with lustre and cobalt decoration. The fabric is soft-fired and creamy white with common, sub-rounded opaque white inclusions; thick, opaque,

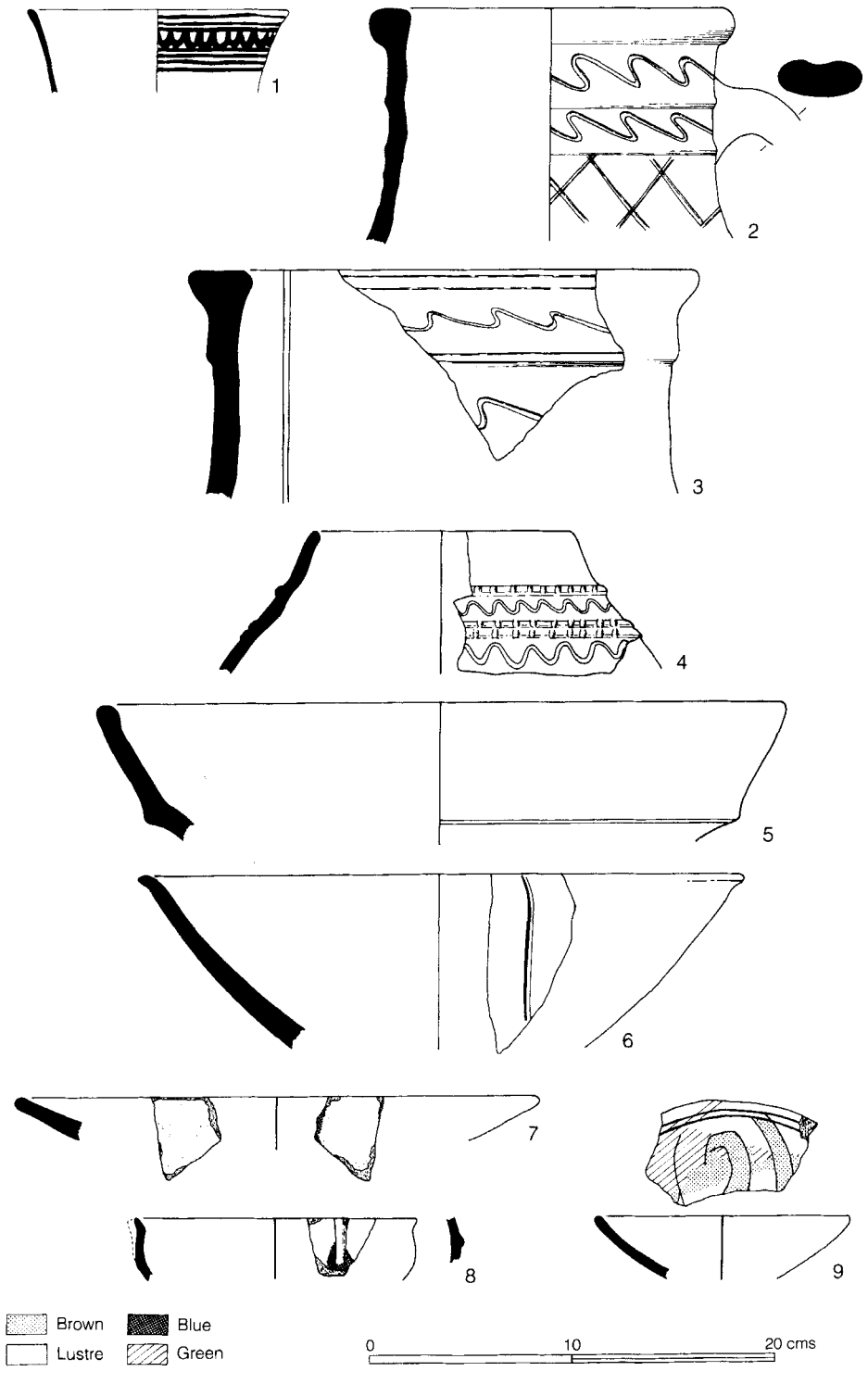

Fig. 6.
Pottery 1–9.

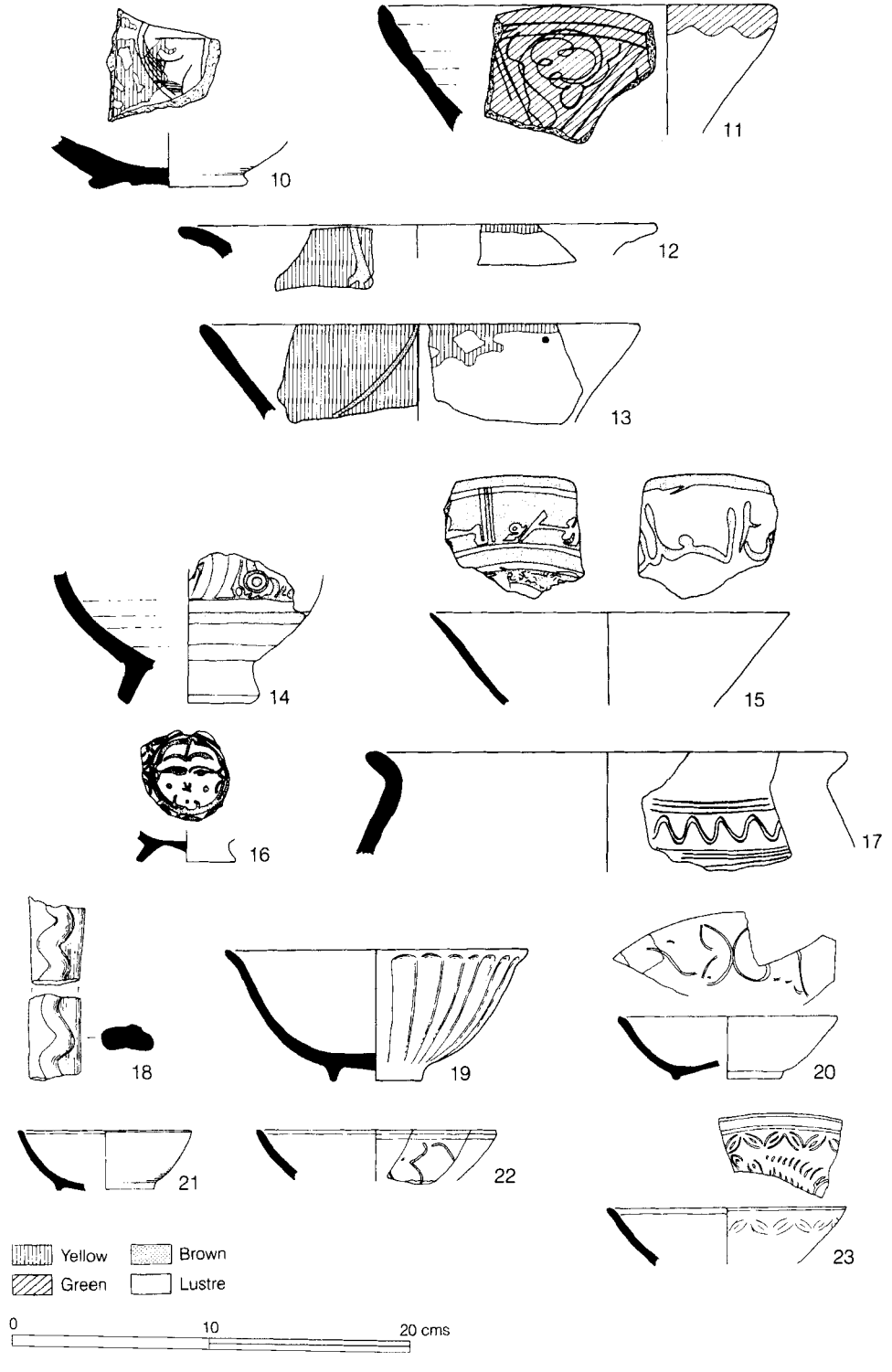

Fig. 7.
Pottery 10–23.

white glaze flecked with yellow lustre and cobalt splash. The lustre decoration gives the impression of having been applied by sponge. A narrow band of cobalt is visible on the edge of the sherd. This sherd belongs to the Samarra horizon wares and incorporates two techniques not often seen together, namely cobalt splash and monochrome lustre. It has been suggested that cobalt splash was one of the earliest of the Samarra horizon innovations and that it died out before the middle of the ninth century: it has also been suggested that monochrome lustre did not appear until the end of the ninth or the tenth century (6).

8 Trench B, Phase D. Fig. 6. Small carinated, tin-glazed bowl with cobalt splash decoration. Low-fired; soft chalky fabric; no inclusions. Small ridge handle. This is an unusual form but can certainly be placed amongst the Samarra horizon wares datable to the ninth century AD.

9 Trench A, 1148. Figs 6, 8. Hatched sgraffiato bowl with calligraphic decoration; the letter *wāw* is visible.

10 Trench B, phase D. Fig. 7. Hatched sgraffiato bowl. Hard-fired; light brown fabric (Munsell 5 YR 7/6); thin slip, no glaze exterior.

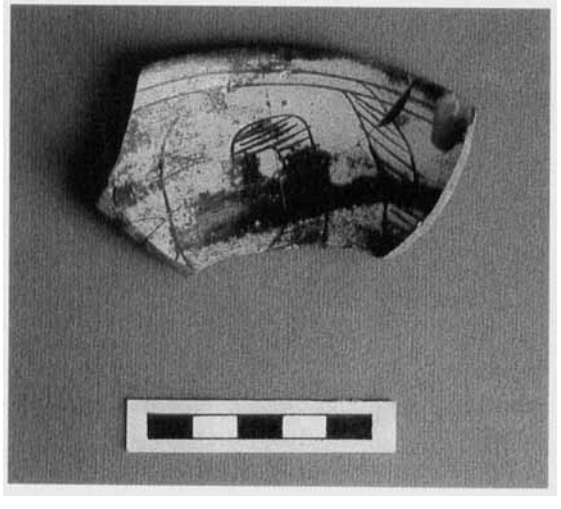

Fig. 8.
Sherd 9, hatched sgraffiato.

Sherds 9 and 10 are both hatched sgraffiato which is common in the Gulf and has also been found nearby at Hulayla. Its introduction can be dated to the early eleventh century (7).

11 Trench B, Phase C. Fig. 7. Monochrome sgraffiato bowl. Hard-fired; greyish orange body; no inclusions; white slip under a thick green glaze, incised decoration under glaze. Monochrome sgraffiato of this style is abundant in the later layers of trenches A and B at Kush (see Fig. 9). It is a late development: according to Gardin a similar style first appeared at Lashkari Bazar in the early twelfth century (8). In Iran sgraffiato appears to have died out after the Mongol invasions and at around the same time it appears to have been supplanted by Far Eastern imports in the Gulf area (9).

12 Trench B, Phase D. Fig. 7. Glazed bowl with a flaring rim. Well fired; light brown body (Munsell 5 YR 5/6) with occasional sub-rounded quartz grains, mica is visible on the exterior. The interior of the bowl is covered with a thin, powdery, yellow-green glaze (Munsell 7.5 Y 6/6) decorated with brown overglaze painted lines.

13 Trench B, Phase B. Fig. 7. Glazed bowl with a straight rim. Well fired; light brown body (Munsell 5 YR 5/6); well levigated, occasional small (0.2 mm) sub-angular opaque white inclusions, mica is visible on the exterior; no slip. The interior is glazed with a thin and opaque, powdered yellow glaze with brown overglaze painted decoration.

Sherds 12 and 13 belong to a class of pottery which is abundant on the southern

Fig. 9.
Examples of monochrome sgraffiato.

coast of Yemen from where it could have been imported (10).

14 Surface find. Fig. 7. Glazed vessel with a high ring base, lustre decoration and cream-coloured tin-slip on the exterior and a blue glaze on the interior. The style of decoration and the high ring base suggest a twelfth or thirteenth century date.

15 Trench A, 1107. Fig. 7. Tin-glazed bowl with stone-paste fabric and monochrome gold lustre decoration on both the interior and the exterior. The interior inscription is outlined in thin red lines. The decoration consists of two Arabic inscriptions, both unfortunately incomplete. The interior inscription is in *kufī* script and the exterior in *naskhī*. The style can be dated to the late twelfth or thirteenth century.

16 Trench A, 1213. Figs 7, 10. Tin-glaze bowl with monochrome lustre decoration. The fabric is stone paste or semi-stone paste. The decoration consists of a stylised face in the centre of the bowl. This sherd is paralleled by a late twelfth-century piece from Northern Iran or Kashan in the Ashmolean Museum (11).

17 Trench B, phase D. Fig. 7. Unglazed jar. Well fired; greyish orange fabric (Munsell 10 YR 7/4); dense black angular inclusions, vegetable temper; surface speckled and pitted, incised decoration. This type of coarse-ware jar is typical of the twelfth and thirteenth-century assemblages at Kush.

Fig. 10.
Sherd 16, lustre ware with a 'moon face' design.

18 Trench B, phase B. Fig. 7. Unglazed, coarse-ware handle with applied snake roll. Well fired; moderate reddish orange (Munsell 10 R 6/6); laminar air holes, lime inclusions and light red, opaque, angular inclusions; thick white slip all over. This type of handle decoration also appears to be quite common in the twelfth and thirteenth-century layers at Kush.

19 Trench A, 1222. Fig. 7. Longquan celadon lotus bowl. The fabric and glaze of this bowl are unmistakably Longquan celadon. This form is difficult to date precisely but can probably be placed in the late thirteenth or early fourteenth century AD (12).

20 Trench A, 1230 & 1222. Fig. 7. White porcelain *qingbai*-glaze bowl with moulded decoration.

21 Trench A, 1045. Fig. 7. Plain white porcelain *qingbai*-glaze bowl with an unglazed rim.

22 Trench A, 1230. Fig. 7. White porcelain *qingbai*-glaze bowl with moulded decoration.

23 Trench A, 1234. Fig. 7. White porcelain *qingbai*-glaze bowl with moulded decoration.

Sherds 20–23 are similar to examples found by Williamson at site K103 (Old Hormuz) in the Minab Delta (13). They do not occur at New Hormuz which was founded at the beginning of the fourteenth century, and they are different to the vessels found on the Sinan shipwreck, dated to AD 1323, which suggests that the Kush examples should be dated to the thirteenth century. Sherd 20 has a close parallel from Putian from the Yuan period (14).

Also found in the surface collection but not illustrated here were fragments of Dusun ware, probably datable to the seventh to ninth centuries (15); a sherd of Indian-red-polished-ware, which can be dated to the first five centuries AD (16) and several sherds of Honeycomb ware whose dating is still problematic but can probably be placed in the seventh to eighth centuries AD (17).

During the excavation of Trench A in 1995 numerous sherds of Wadi Suq pottery came to light. This material is abraded and quite obviously residual: this is to be expected on a site which consists predominantly of mud-brick architecture to which large quantities of mud would have been brought, some containing residual sherds from other sites. It might, however, also indicate that a second-millennium BC occupation exists beneath the mound. An Umm al-Nar 'sugar-lump' stone was found on top of the mound in 1994 but no other indication of occupation in this period has yet come to light.

The sherds illustrated here give an impression of the types of pottery that occur in the Kush sequence and present evidence

of a continual sequence of occupation beginning somewhere between the first century and the fifth centuries AD (the possibility of a second and third millennium BC occupation is not entirely excluded). The late Sasanian and pre-Samarran Islamic period is well represented at the site. The ceramic chronology of this period is still problematic and it is hoped that the Kush sequence will make a contribution towards resolving this. There are a number of Samarran Abbasid wares at the site dating to the early to mid-ninth century but, so far, the later ninth and tenth centuries do not appear to be well represented (e.g. early sgraffiatos and splash wares) although it is too early to be sure of this, given the small area excavated. Hatched sgraffiato indicates that the site was occupied in the eleventh century. However, unlike a number of sites in the Gulf, occupation continued at Kush after the eleventh century, as is demonstrated by the monochrome sgraffiatos, Chinese *qingbai* wares and various probable Iranian products (e.g. sherds 14, 15, 16). There is certainly no occupation on the site after the beginning of the fourteenth century. The nearby site of al-Mataf Julfar dates to the fourteenth to seventeenth centuries and has been extensively excavated. None of the most common wares found there are to be found at Kush (e.g. Persian blue speckled, Khunj ware, Chinese blue-and-white porcelain (18)). There is some evidence of very limited activity on the site in the post-Julfar period (eighteenth–nineteenth centuries AD) in the form of a few sherds of late Chinese blue-and-white porcelain and fragments of locally-produced wares.

Archaeobotany

Adrian Parker

To date very few systematic palaeobotanical investigations have been carried out in the Gulf. Apart from the sites at Saar on Bahrain and Failaka in Kuwait, little flotation work has been attempted (19). Dry sieving from a number of sites has yielded wood remains and date stones and at nearby Tell Abraq, mud-brick impressions have recorded some important palaeobotanical data (20).

At Kush a modified Siraf-type flotation machine was constructed (21). Water was recycled between two large settling tanks below the flotation tank in order to minimise consumption. The flow of water into the flotation machine was maintained by using a 1HP electric pump. Sludging out and topping up the system with fresh water on a regular basis and the fitting of a fine filter on the intake pipe minimised the risk of contamination. Floating material was collected in 1 mm and 0.3 mm sieves. The heavy residues were collected in a 1 mm mesh and were picked and sorted for pottery, beads, coins, glass, heavy carbonised remains, bone and shell.

During the 1995 season a total of 4,114 litres of soil were floated from Trench A. This yielded 4.08kg of charred material. A maximum of 60 litres of sediment per context or 100% of the context (if less than 60 litres) was floated. An initial assessment of the flotation material suggests that Kush is relatively rich in fruits and seeds when compared with other sites in the Gulf. In addition, large quantities of charcoal, numerous shells, fish bones, and smaller quantities of bone, insects and non-marine mollusca were recovered.

The material recovered from the flotation was sieved into 4 mm, 2 mm, 1 mm and 0.5 mm fractions and weighed. The material was then picked under the microscope for plant remains.

During the first field season modern reference plant material including wood samples was collected from different environments within the U.A.E.

Preliminary results of botanical analyses

The results presented here represent around half of the material recovered during the 1995 field season. The remainder is in the process of being studied. A more informed report of the complete flotation results and their significance will follow at a later date. This report highlights the work under way and outlines some initial findings.

The results so far are presented in Table 1. The material identified falls into two broad categories: crop plants and non-crop plants.

Crop plants

This category includes wheat, barley, lentils, dates and olives. The wheat remains were of *Triticum cf. aestivum/durum* type and a number of grains were found. A rachis of *Triticum aestivum* was also found. The material varied considerably in size and may also include ssp. *compactum* and *spaerococcum*. A number of two-rowed barley (*Hordeum vulgare* ssp. *distichum*) and six-rowed barley (*Hordeum vulgare* ssp. *hexastichum*) grains were recovered. Also found was a relatively large number of indeterminate cereal remains. Apart from these a single lentil (*Lens culinaris*) (of the small-seeded variety), two olive stones (*Olea* sp.) and six *sidr* (*Zizyphus* sp.) stones and charred fruits were also recovered. A large number of date stones (*Pheonix dactyliferae*) were encountered, most of which were fragmentary; however, some were whole and measurements will be taken of these once all the material has been sorted.

Non-crop plants

Within this category the following species are most likely to represent fodder crops: grass, canary grass and small-seeded legumes. A small number of grass seeds have been recovered but not as yet identified to species level. Two grains of canary grass (*Phalaris* sp.) have been identified. The possibility of forage plants was suggested by the presence of a number of small-seeded legumes which include *Trifolium*. Many of these have not as yet been identified to species level as most do not have their seed coats intact. A single seed of *Ranunculus* type and three seeds of *salam* (*Acacia tortilis*) were also noted.

Other seed types were found including four *Euphorbia* sp. seeds, a large quantity of cf. *Malva*-type(?) seeds and a number of as yet unidentified seeds and nut fragments.

A quantity of wood charcoal was recovered during the flotation. Preliminary identifications include wood remains of *Pheonix* and *Zizyphus spina-christi*. Taxonomic and quantitative analyses of the carbonised wood remains will be undertaken and the results addressed at a later date.

The initial findings would suggest that, when compared with other sites in the Gulf, Kush preserves an important archaeobotanical record for the Sasanian and early Islamic period. On the whole the preservation of the material is good and the variety of seed remains found highlights the potential and importance of the sequence.

The Animal Bones

Mark Beech and Alan Pipe

This preliminary catalogue of material was made on the basis of a rapid scan through the animal bones collected during the 1995 season of excavation from contexts dating to the twelfth and thirteenth centuries AD and the seventeenth/eighteenth centuries AD (excluding bones present within the flots and heavy residues, which still remain to be sorted). All bones on the excavation were retrieved using 3 mm mesh dry sieving.

The following mammals, birds, fishes and crustacea have been identified: *Ovis/Capra* (sheep/goat, probably more goats than sheep), *Bos* sp. (cattle), *Camelus* sp. (camel), *Canis/Vulpes* sp. (dog/fox), Galliformes (chicken?), *Chelonidae* (marine turtle), *Cetacea: Odontoceti* (dolphin/porpoise?), *Elasmobranchii* (shark/ray/skate), *Sparidae* (sea bream), *Haemulidae: Pomadasys sp.* (grunt), *Scaridae* (parrotfish) and *Crustacea* (crab).

The most common terrestrial mammals to be exploited were sheep and goat. The majority of those bones which could be assigned to either sheep or goat belonged to the latter. Some of the ovicaprid bones came from juvenile/immature individuals. Cattle bones were only present in small numbers. They appeared to be quite small in size and build. Four bones could be identified to camel. Two bones belonged to either dog or fox. A possible dog coprolite was discovered in context 1100 which included tiny fragments of crushed bone within its matrix. Several bird bones of galliform type (chicken?) were identified. A number of carapace fragments of marine turtle and a single fragment of dolphin/porpoise(?) vertebra were recorded. Out of the fishes, a preliminary examination suggested that one of the most important families was the sea breams, followed by grunts, elasmobranchs and parrotfish. Many of the fish bones showed signs of burning and several had traces of butchery marks (chop and cut marks to their surfaces). A number of crab *chelae* (pincer) fragments were also recovered. Some of these were burnt indicating perhaps that they had been cooked on a fire.

Bone preservation appears generally to be quite good. A brief examination of the heavy residues and flots from the flotation programme revealed that there are considerable quantities of small fish, reptile and small mammal bones.

Conclusion

The 1994 test-trench and surface collection and the 1995 season have amply demonstrated that Kush has the potential to provide a good environmental (archaeobotanical and faunal) and ceramic sequence through the late pre-Islamic and Islamic periods. The work so far has also thrown some light on the development of the site.

The evidence for Sasanian and early Islamic occupation is interesting. Not long ago evidence of Sasanian occupation was very scarce in the Oman Peninsula. There now appear to be a number of sites such as Khatt, Hulayla and Kush which provide archaeological evidence for the Sasanian occupation which has been surmised from historical sources (22). Indeed, it seems quite possible that Kush, being apparently a Sasanian foundation, was originally one of the colonies that Wilkinson has described, and later grew into a substantial Islamic-period settlement.

The pottery chronology of the late Sasanian and early Islamic periods is still problematic. Some of the material excavated from trench B seems likely to be datable to the seventh century. The chance to excavate a stratified sequence through this period may help to resolve some of the difficulties relating to the ceramic chronology.

The evidence for occupation of the ninth, tenth and eleventh centuries is so far limited to sherds and a few fragmentary indications from trench B. Notable is the large structure of phase 'G' which appears to be part of a substantial, possibly defensive, structure.

More information is available for the twelfth and thirteenth centuries – the final phase of occupation – as the excavation of trench A has already cut into layers dating to this period. It has been argued elsewhere that this period was one of economic decline in the Gulf (23). According to the results from trenches A and B, Kush, al-

Table 1 (Section 1).

Context	1001	1009	1010	1013	1011	1007	1018	1023	1021	1017	1039	1043	1056	1068
Sample	2	3	4	5	6	8	9	10	11	12	18	20	22	29
Provisional dating	17th	17th	17th	17th	17th	17th	17th	17th	17th	17th	17th	17th	17th	17th
Gramineae type		1								1				
Phalaris sp.										2				
Triticum aestivum/durum t.		1								1				
Hordeum vulgare ssp. distichium										1				
Hordeum vulgare ssp. hexastichium														
Hordeum vulgare										1				
Cereal indet.	2	1		3		1		1		1	1	2	1	3
Leguminosae type		2			1					1				
Acacia sp.					2									
Trifolium sp.		2												
Lens culinaris														
Boragonaceae														
Lithospermum sp.														
Ranunculaceae type														
Euphorbiaceae														
Euphorbia sp.									1					3
Polygonaceae type														
Rumex sp.														
cf. Malvaceae?		18												10
Rhamnaceae														
Zizyphus sp.														
Oleaceae														
Olea sp.										1				
Palmaceae														
Pheonix		1		1									1	
Unknown	3	3	10	7			8			1		2		1

Table 1 (Section 2).

Context	1054	1076	1100	1059	1089	1120	1166	1045	1048	1095	1156	1187	1208	1228	1236
Sample	32	42	50	53	46	65	87	21	28	49	83	104	113	126	141
Provisional dating	17th	17th	17th	17th	?	?	?	12/13th	12/13th	12/13th	12/13th	12/13th	12/13th	12/13th	12/13th
Gramineae type		1					2			1					
Phalaris sp.															
Triticum aestivum/durum t.		2	8			2	1			9		1	2		
Hordeum vulgare ssp. distichium			2											14	
Hordeum vulgare ssp. hexastichium		6	3											6	
Hordeum vulgare			1					1		5					2
Cereal indet.		9	4		3	2		1	1	7				13	6
Leguminosae type		4	4	4	4	2									
Acacia sp.				1			1								
Trifolium sp.		8	1			2			1	1					
Lens culinaris		1													
Boragonaceae															
Lithospermum sp.		24	1												
Ranunculaceae type		1													
Euphorbiaceae															
Euphorbia sp.															
Polygonaceae type															
Rumex sp.			1												
cf. Malvaceae?		63		1	4					4	1				3
Rhamnaceae								1							
Zizyphus sp.		2											2	2	
Oleaceae															
Olea sp.				1											
Palmaceae															
Pheonix		1	1		2		1				2		5	15	4
Unknown	1	5	1	3		3		36		3			2	4	1

though still inhabited, appears to a have gone through a period of relative poverty which consisted of *'arīsh* structures and 'squatter' occupation. There is no evidence of mud-brick construction in the latest phase, although it was clearly the norm in earlier phases. Further evidence of economic decline comes from the complete lack of coins from this period, despite the fact that most of the excavated spoil from trench A was sieved through a 3 mm mesh. This would appear to confirm Lowick's observation of a lack of coins in the Gulf during twelfth and thirteenth centuries (24). However, fine ceramics from Iran, China and possibly Yemen were imported, and these enable us to date the occupation. The most common glaze wares of this period were sgraffiatos which is interesting because, from more than 40,000 sherds studied from the British excavations at the nearby al-Mataf Julfar dating to the fourteenth to seventeenth centuries, not a single sherd of sgraffiato has come to light (25). The evidence from Kush would suggest that sgraffiatos went out of circulation at the end of the thirteenth century, confirming what Morgan has recently pointed out in relation to the site of Old Hormuz on the other side of the Gulf (26). It will be interesting to compare the archaeobotanical and faunal evidence from this period with that from earlier phases once the excavation has progressed.

The indications are that towards the end of the thirteenth century Kush was completely abandoned, probably only shortly before the site of al-Mataf Julfar was founded, and this must bring into question the present author's conclusion that the site of early Julfar is to be located at Jazirat al-Hulayla (27). No evidence of twelfth- or thirteenth-century occupation was found at Hulayla and it could be argued that Kush, being closer to al-Mataf Julfar and a much more substantial settlement, is more likely to be the site of pre-fourteenth-century Julfar.

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Firdous Khan died in 1995 and will always be deeply missed by those who knew him.

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