

FISHING IN THE GULF: PRELIMINARY INVESTIGATIONS AT AN UBAID SITE, DALMA (UAE)

Katelin Flavin and Elizabeth Shepherd

Introduction

Background to the project

In the spring of 1992 the island of Dalmā was surveyed archaeologically by a British team as part of the Abu Dhabi Islands Survey. The island lies at UTM 6333000°E/2710000°N, 45 km from the coast of Abu Dhabi Emirate (Fig. 1). The objective of the survey was to make a preliminary assessment of archaeological survival, to report on findings and to recommend sites that merited further investigation. Any sites threatened by development or erosion were to be identified and steps outlined for their protection.

One such site (DA11) was discovered by Robyn Stocks, a member of the survey team, within the compound of the Women's Association (Fig. 2). The presence of flint scatters, pottery and beads indicated that it was of Ubaid date (c. fifth millennium BC). A cross-shaped area (30 × 5 m east-west and 30 × 5 m north-south) was gridded into 1 m squares and surface finds were plotted and collected. The plot showed an apparent concentration of flints to the east. A group of four flint cores, a possible shell midden and other surface finds to the south-west suggested that the site continued southwards for some distance. Similar finds were noted to the north of the compound wall on a traffic island (DA12). When combined, sites DA11 and DA12 cover an area of about 175 m east-west and 250 m north-south. The ancient shoreline ran just to the west of the compound.

The discovery of an Ubaid site on the island was quite unexpected. Only a few other sites of this date have so far been excavated within the UAE: at al-Zahra in Ajman (fifth millennium) (Haerinck, 1991), at Umm al-Qawain (fourth to fifth millennium) (Boucharlat *et al.*, 1991) and at Jazirat al-Hamra in Ras al-Khaimah (Potts, 1990, 54).

The compound area is used as a children's playground and superficial damage to the site has been caused by the scuffing of children's feet. More importantly, plans to develop the buildings belonging to the Women's Association meant that there was a direct threat to the site's survival.

This threat, together with the site's archaeological importance, meant that it was selected for further investigation when the survey team returned for a second season in 1993.

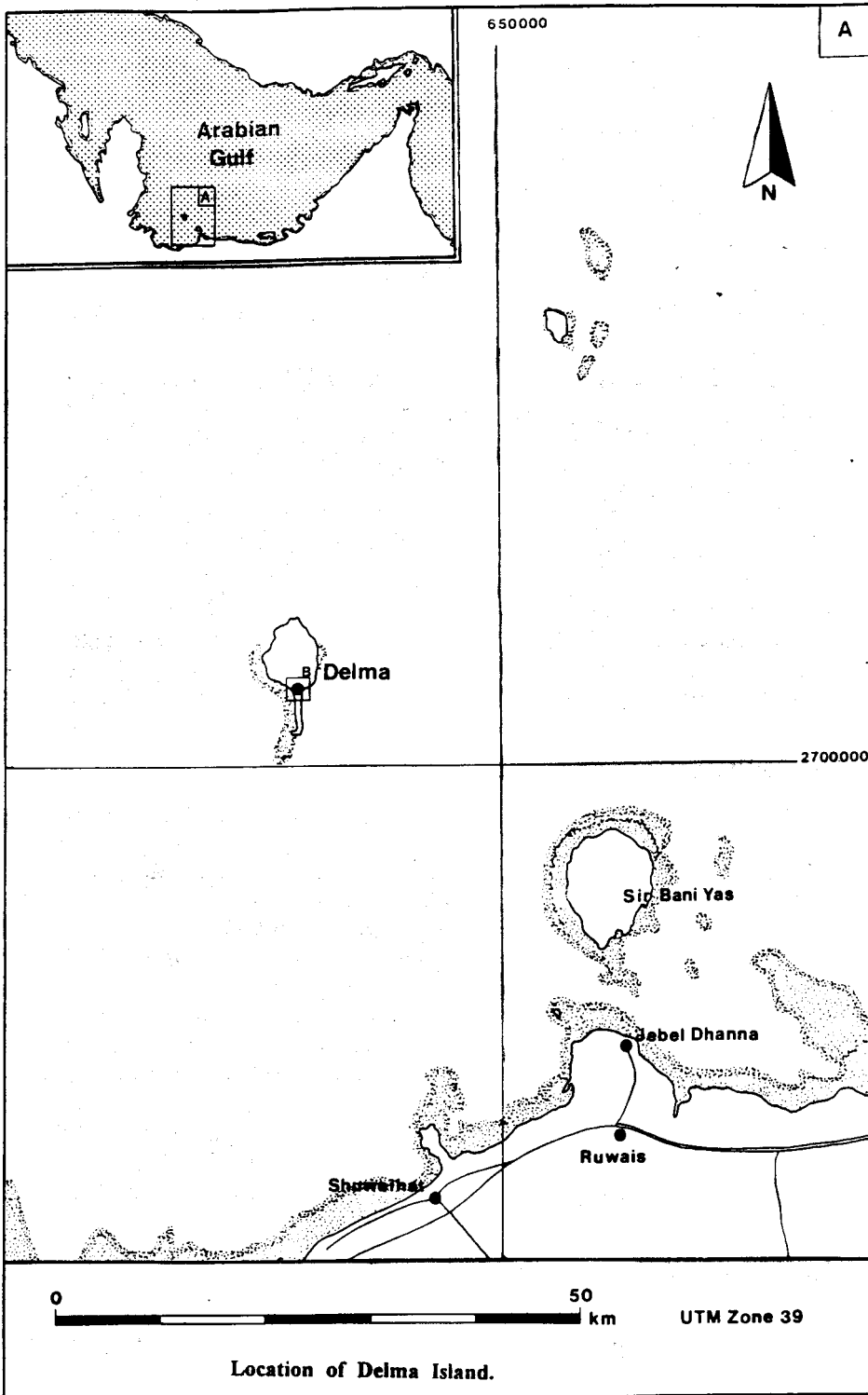


Fig. 1. Location of Delma Island.

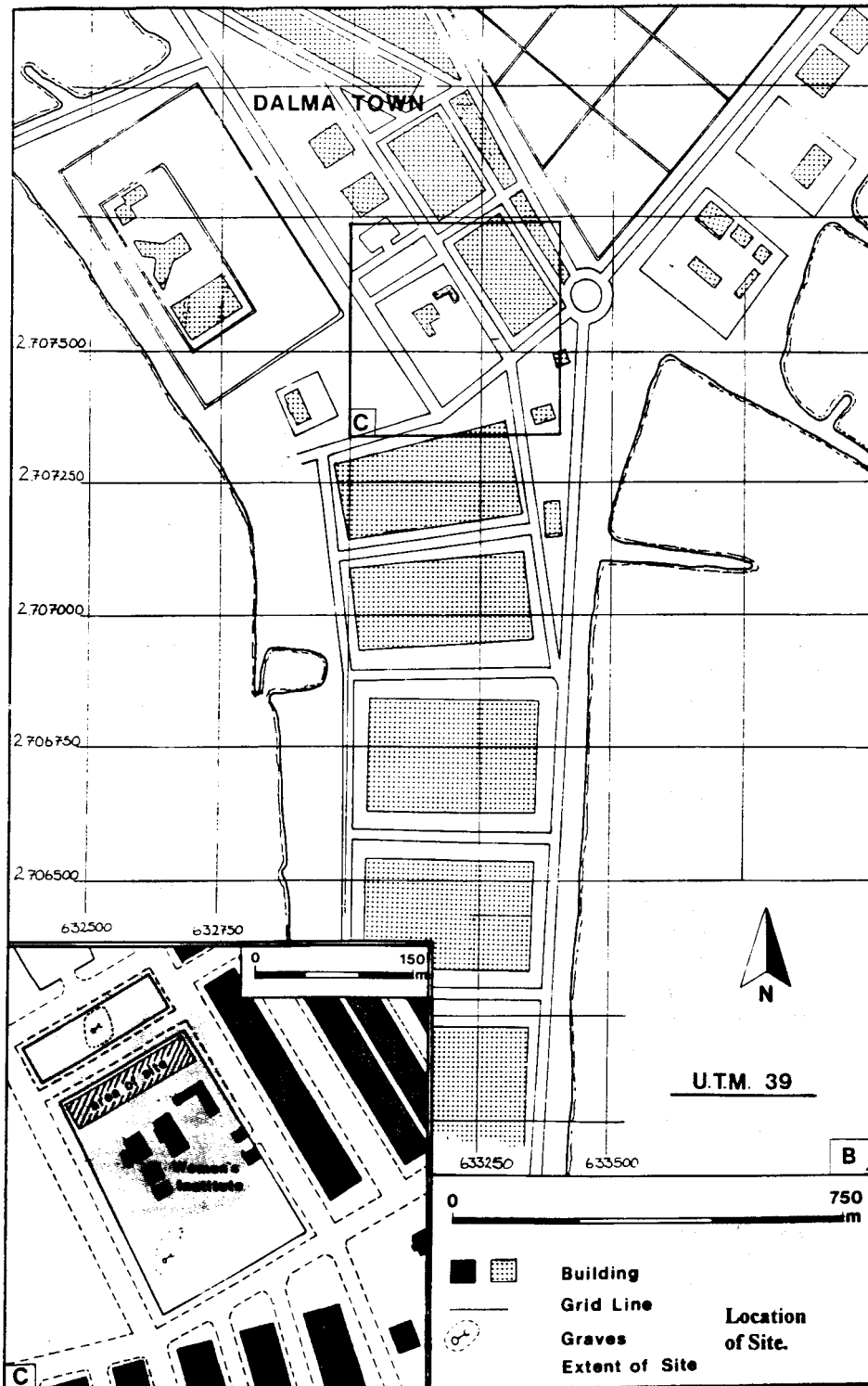


Fig. 2.

Acknowledgements

The Abu Dhabi Islands Survey was carried out in 1993 on the orders of President His Highness Sheikh Zayed b. Sultan Al Nahyan and its patron is His Highness Major General Sheikh Mohammed b. Zayed al Nahyan.

The team was led by Dr G.R.D. King of the Department of Art and Archaeology, SOAS, University of London. The 'Ubaid site was jointly supervised by Katelin Flavin and Elizabeth Shepherd, with the drawings produced by David 'Rat' Connolly (draughtsman). A team of ten Pathan workmen was provided by 'Id al-Mazru'i of the Dalmā Baladāya, whom we would particularly like to thank for his interest and help.

Summary

The second season of investigations within the compound of the Women's Association on Dalmā has confirmed the presence of a large 'Ubaid settlement with a high level of archaeological survival. Surface sieving produced a considerable quantity of 'Ubaid finds with unexpectedly low levels of later contamination. A trial trench revealed over 1 m of complex deposits and four 'phases' of activity were identified. Gypsum surfaces and related features indicate the presence of structures, perhaps 'arish'-like houses, with an economy based on fishing, mollusc gathering and hunting.

Site strategy

Objectives

The major objectives for the second season (in March–April 1993) were to delimit the site, to establish the depth of deposit and to clarify whether larger-scale excavation was merited. The planned development of the Women's Association buildings could then be carried out in areas which would not significantly damage archaeological deposits.

Methodology

On the basis of the results of the first season, it was decided to undertake intensive collection and plotting of finds from the topsoil. Additionally, a small trial trench (2 × 5 m) was excavated in order to establish the depth of stratification.

The northernmost part of the compound (Fig. 3) was selected for investigation as it was most directly threatened by development. A 5 m grid was established, subdivided into 1 m squares. About 5–10 cm of topsoil was excavated in each of the latter, which was then sieved and the finds bagged separately. The area totalled 122 m east–west and 10–15 m north–south (at the far eastern end this was reduced down to 3–4 m).

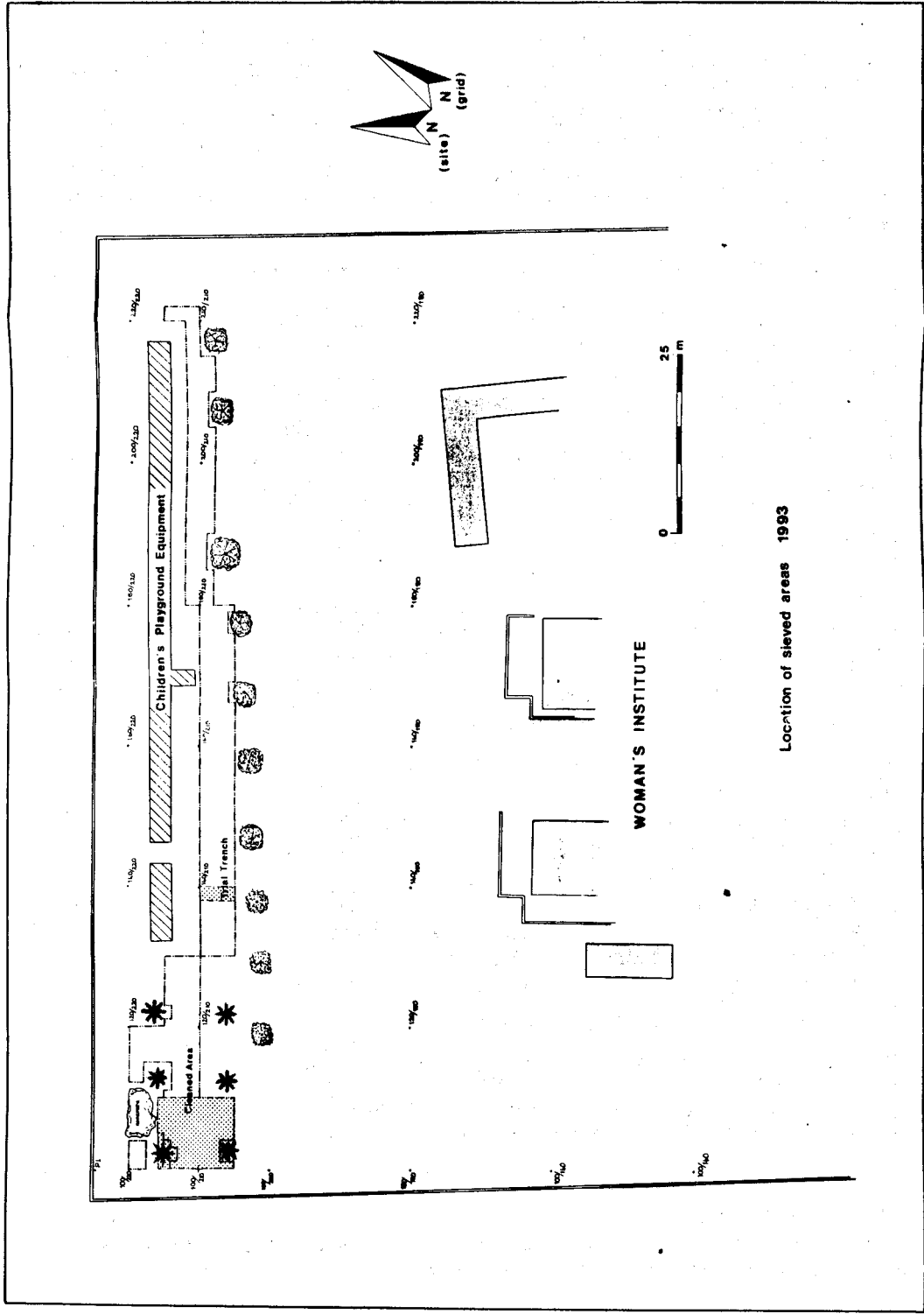
Results of sieving

The results of surface sieving are shown in Fig. 4, indicating the distribution of flint debitage across the site, while Fig. 5 gives the location of flint tools, beads and pottery to within the nearest metre.

Distribution of flint-working debris

Any study of Fig. 4 should be made on the understanding that the plot represents an intensive form of field-walking rather than excavation.

Large quantities of flint debitage were recovered during sieving, as well as worked flint objects and other finds. The figure clearly shows two marked concentrations of



Location of sieved areas 1993

Fig. 3.

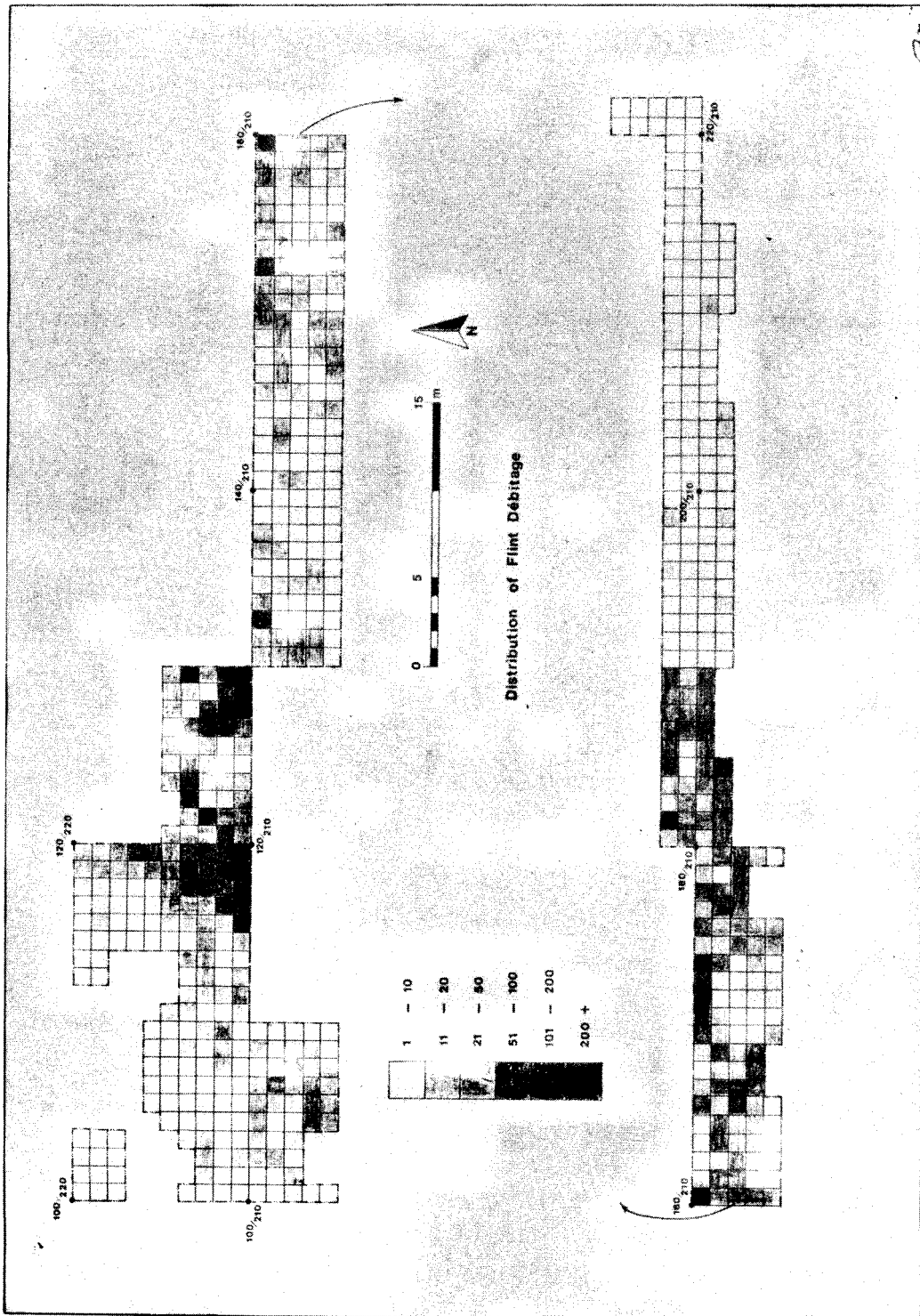


Fig. 4.

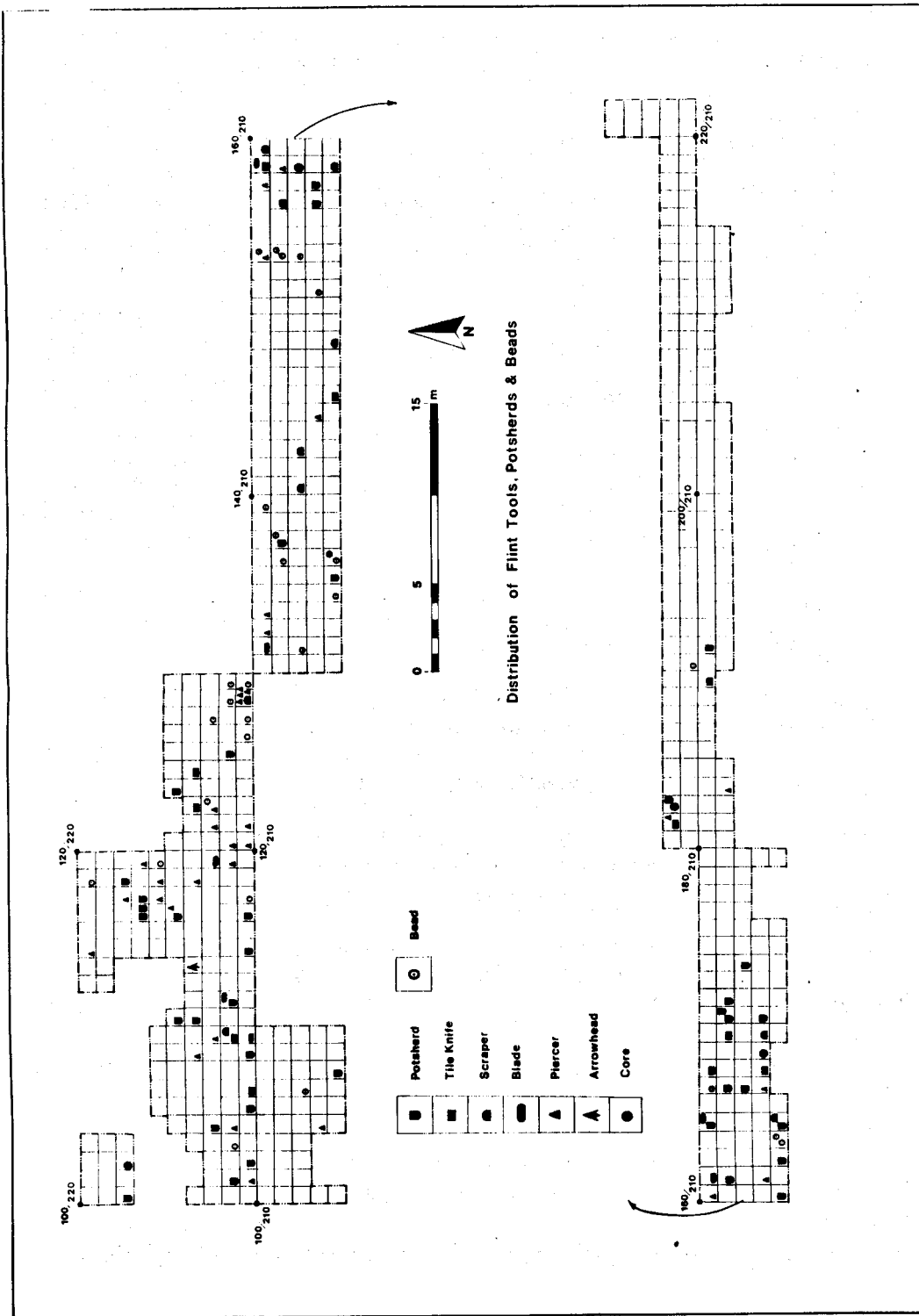


Fig. 5.

flint debitage. An abrupt decline in flint was noted to the east of the site, although there had been a higher degree of modern disturbance in this area. The areas of the site lying above gypsum surfaces were often found to contain relatively low levels of flint debris and other finds.

Distribution of special finds

The distribution of special finds and pottery falls roughly within the same areas as the flint. A slightly higher proportion of flint piercers lay to the west (Fig. 5), with most scrapers in the centre of the sampled area. Other tool types and cores were fairly evenly distributed.

The trial trench

The excavated sequence

A 2 x 5 m trial trench was placed running northwards from grid point 138/205 (see Figs 3 and 6). This lay just to the west of the cross-shaped area recorded in Season I and was intended to demonstrate the depth of archaeological deposits in the area. The surface finds plotted above this area in 1992 showed a low density of flint debris and no other surface finds. This area was selected because removal of the topsoil (context [001]) in the sieving process had exposed a compacted layer of gypsum ([002]) similar to deposits noted elsewhere on the site. The gypsum petered out to the north, exposing an area of darker sand ([003]), lying above what appeared to be redeposited or even natural beach sand ([004]).

The sequence of deposits recorded within the trial trench indicates four approximate 'phases' of activity. From the lowest recorded levels, working up the sequence (although the bottom of the sequence has not yet been reached), these are the following:

1. A compacted gypsum surface with associated post-hole and other deposits. These may represent structural activity, although whether they are internal or external in nature is uncertain at this stage (Contexts [017]-[021]).
2. A period of successive deposits of apparently redeposited natural sand, interleaved with occasional patches of charcoal and fish bones (Contexts [004], [009]-[016]).
3. An extensive ashy deposit of dark sand may have been associated with two linear features, parallel and aligned east-west. There is no indication as to the function of these features (Contexts [005]-[008]).
4. A second compacted gypsum surface with no visible associated features. Again, whether this was internal or external is unclear (Context [002]).

The nature of these deposits, notably the alternating layers of sand and patches of charcoal and fish bones, can be compared to deposits encountered on other 'Ubaid sites (for example, al-Dawsariya, Henrickson and Thuesen, 1989, 407). Such sequences have been interpreted as representing seasonal occupation relating to fish catching and processing, such as smoking and salting. The depth of deposit recorded so far is clearly significant.

The gypsum surfaces, post-hole and other possible structural features may indicate the presence of fairly substantial buildings, perhaps 'arish' or 'barasti'-like

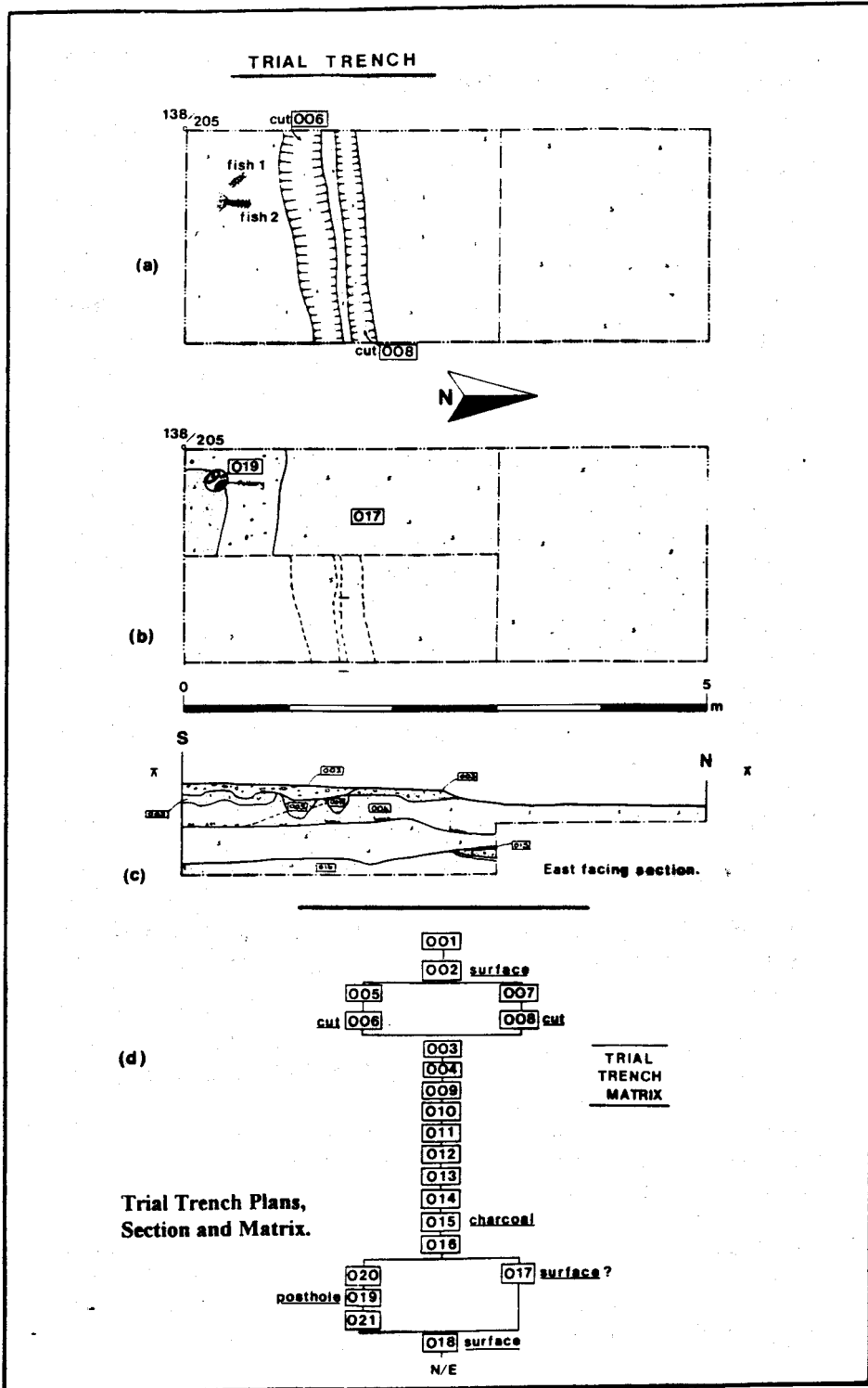


Fig. 6.

houses.

The cleaned area

A gypsum surface (similar to context [002] recorded in the trial trench) was revealed in various places across the site, following the removal of the topsoil during the sieving process. A 10 × 10 m square area (with its south-west corner at grid point 100/205) at the western edge of the site was cleaned and planned in order to trace any surviving features visible within the gypsum surface.

The irregular patches of gypsum recorded (see Fig. 7) may reflect the size and shape of structures, although this suggestion is highly tentative given that the surface

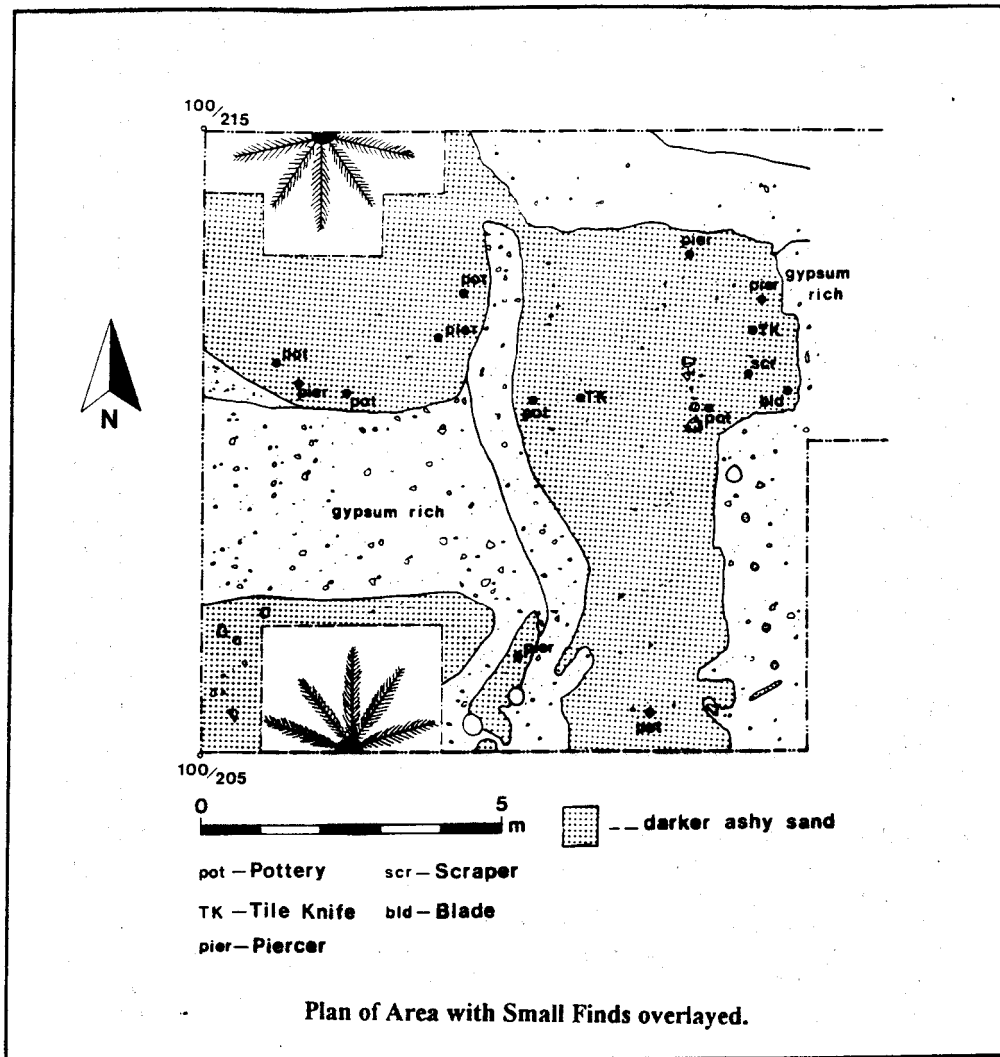


Fig. 7.

of these deposits lies only 5–10 cm below the level of the current playground. A possible post-hole was recorded to the south, along with an alignment of small posts/stakes running north-west-south-east. To the south-west were two other possible post-holes, perhaps relating to the curving line of the gypsum surface edge to the north. The date of all the post-holes is uncertain.

The planned evidence suggests that similar deposits to those excavated within the trial trench are to be expected in this area of the site.

Finds report

Finds collection and recording

A brief summary of the finds collection policy for each category of finds is given below, together with a discussion of any problems encountered during retrieval or subsequently.

Problems associated with finds retrieval

As the site is situated within a children's play area there is a certain amount of localised disturbance around the swings and slides. These specific areas were avoided as much as possible during sieving.

There appeared to be little finds contamination prior to the present day. Contamination of the surface material with twentieth-century items (such as marbles, beads and hair clips) occurred over the whole site, but was more concentrated in the eastern part where the children play more frequently. Most of these objects were easily identifiable, although some of the many small beads recovered from the sieve initially caused some concern. The presence of similar beads from sealed deposits within the trial trench indicates that most of the beads are 'Ubaid in date.

There were initial problems with the identification of pottery, as encrustations of salts and minerals gave much of it the appearance of stone. Such encrustations were particularly concentrated on pottery recovered from the trial trench. This mineralisation was also evident on other finds, particularly beads, net weights and bone. A strategy for dealing with this problem was devised in consultation with the survey team conservator.

There were considerable problems with the retrieval of bone from the site, due to its fragile condition. Many fragments from the trial trench were only held together by the encrustation of salts and minerals on their surface and they collapsed on attempts to lift them.

Bulk finds

Pottery (Fig. 9)

Most of the pottery recovered comes from the stratified deposits. Due to its poor state of preservation, it has only been possible to identify tentatively four pottery fabrics:

1. *Greenish/buff fabric: fifteen sherds.* These sherds quite clearly belong to the 'Ubaid tradition. Similar sherds can be found on the Arabian mainland (Henrickson and Thuesen, 1989, 406–408) as well as in Mesopotamia. The paste is greenish buff and appears to be evenly fired with a fine, possibly sand temper. Some pieces have external decoration in the form of geometric designs in brown paint. The presence of these pieces would seem to indicate some contact with the 'Ubaid culture of Mesopotamia, possibly in the late fifth to early fourth millennium BC.

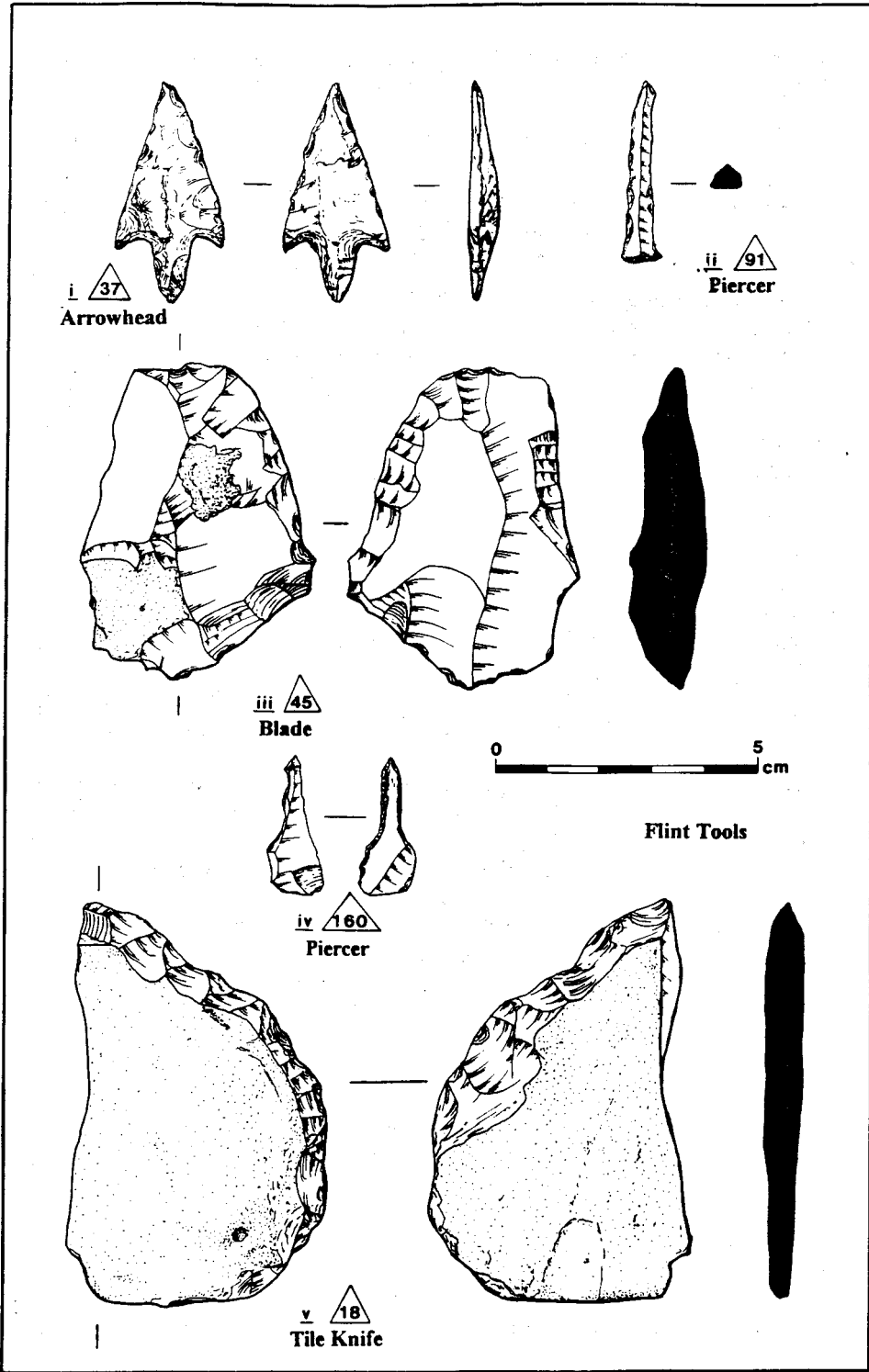


Fig. 8.

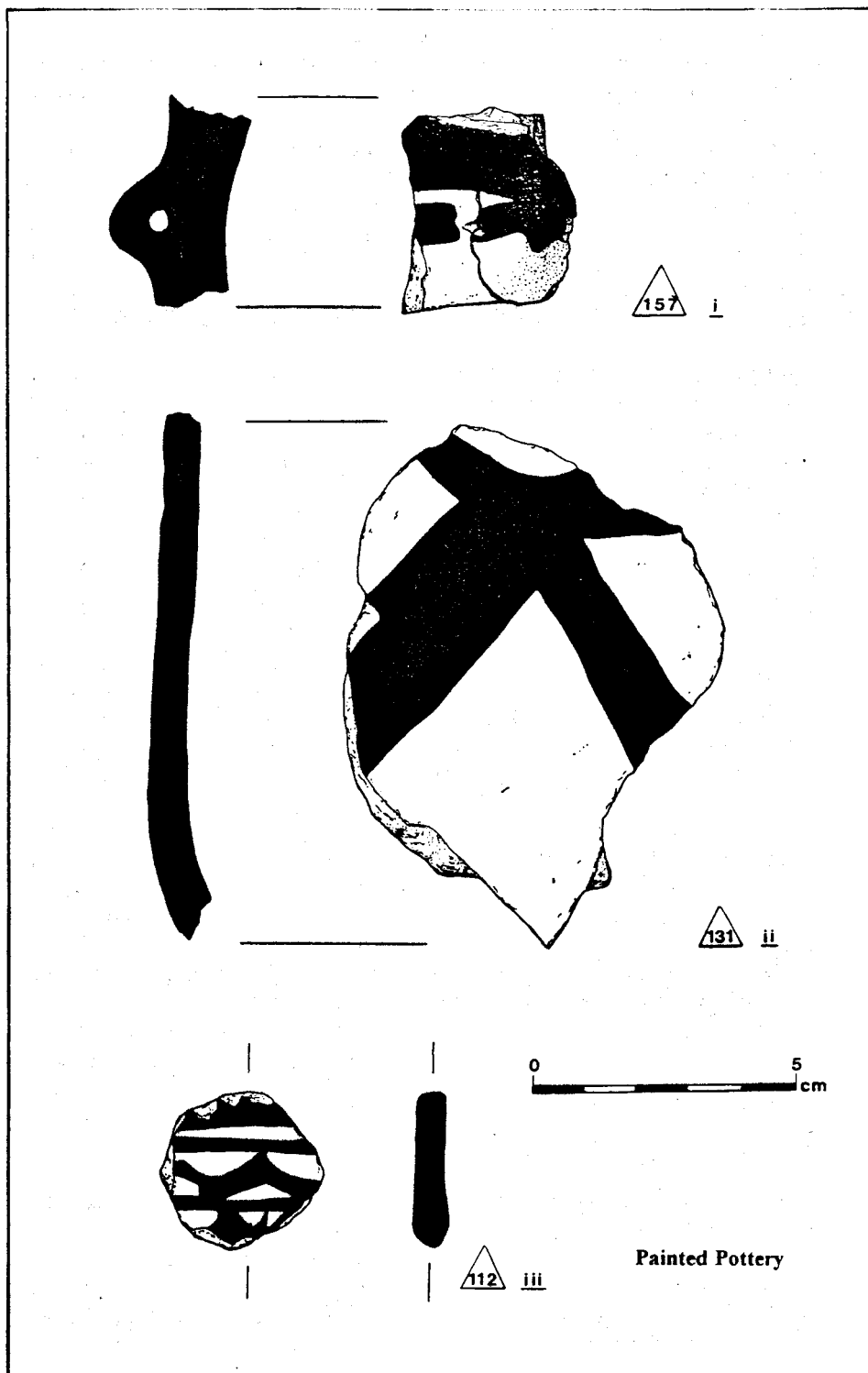


Fig. 9.

2. *Hard white fabric: 200+ sherds.* Most of the sherds recovered belong to this group and about 90% of the recovered sherds come from stratified deposits. The fabric is very hard, white and brittle, sometimes with a pinkish white gypsum lining adhering to its inner surface.

Although no specialist study of the sherds has yet been made, it is possible to say that there were some large straight-sided vessels with a wide opening and a slightly everted rim. Exterior decoration occurs on some sherds and consists of fragile black paint or soot in a variety of simple geometric designs, occasionally all over the sherd.

3. *Reddish fabric: three sherds.* These evenly fired, fine-tempered examples were found only on the ground surface.

4. *Coarse dark-brown fabric: one sherd.* The one example of this type is a rim sherd with a rough mica temper. No comparative material has yet been found for this example which was also a surface find.

Both the green and the red types are found in 'Ubaid contexts throughout south-east Arabia (Potts, 1990, 59-61).

Shell

The huge quantity of shell apparent on the site meant that a suitable sampling strategy had to be devised. Three of the 5 m squares were selected for shell collection, placed at intervals across the site to provide a random sample. These squares were 105/210, 140/205 and 170/205. All fragments above 2 cm in size were retrieved and weighed by 1 m square. All shell, again above 2 cm, was collected from contexts within the trial trench. Sea urchin spines were common throughout the deposits, although these were not collected.

Bone

Surface finds were infrequent and, due to their exposure, quite stable. In contrast, large quantities of bone were found in the trial trench and included turtle fragments as well as both fish bones and those of small mammals.

Flint

All fragments of flint were collected, regardless of their size. There is no known source of flint on the island and the material found on the site must therefore have been brought in from elsewhere (see 'Conclusions'). It should be noted that the flint counts for debitage shown on Fig. 4 make no distinction between primary and secondary flakes, or between different flint types.

Special finds

Flint tools

This is by far the largest category of special finds. The distribution of types can be seen in the table opposite.

This shows that over half of all flint tools found were piercers. These can be compared to the microlithic awls found on the Arabian mainland, at Abū Khamis (Potts, 1990, 45) and elsewhere. Other tools in the assemblage, such as tile knives and tile scrapers, are comparable with types found in Qatar group D (Potts, 1990, 38). The one tanged arrowhead found at Dalmā is also identified as belonging to this group (Potts, 1990, 39, Fig. 4-I).

Table 1. Types of flint tools.

Flints	Figure	Total	Stratified	Surface	Description
Arrow head	8(i)	1	—	1	Small pressure retouched tanged point, ventral face only partially retouched.
Piercer	8(ii) & (iv)	44	2	42	Micro drills, usually abrupt retouch on both edges, dorsal but none on ventral, also abrupt or semi abrupt at point.
Tile knife	8(v)	11	—	11	Hard hammer, large/crude bifacial retouch along one edge.
Blade		8	—	8	3 cm (av.) large dorsal flaking with no added retouch.
Scraper	8(iii)	11	2	9	Large dorsal flaking, some retouch in evidence along one edge.
Tile scraper		1	—	1	Hard hammer, large crude unifacial retouch along one edge.
Core		5	—	5	Fragments of cores, mainly discoidal cores. Fragments re-present preparation of new striking platform.
Heavy piercer		1	—	1	Similar to scraper, though abrupt retouch has formed a point at the end.
Total		82	4	78	

Beads

A total of 30 beads were removed from the site, with the majority coming from the surface, as can be seen in Table 2.

Other finds

A variety of other objects were recovered from the site. A number of net weights and possible weights were found which can be seen from Table 3. Worthy of note are the two protobeads. Their presence indicates that bead manufacturing was possibly taking place on the island.

Finds from the trial trench

The surface distribution of flint debitage, tools and other small finds above the area of the trial trench was low (see Figs 4 and 5). Most 1 m squares contained fewer than ten pieces of debitage, with one having none at all. A single bead was found. This may partly be the result of the previous field-walking (1992), although findings from surface sieving across the site suggests that low levels of retrieval are to be expected above gypsum surfaces.

A total of 244 sherds of pottery were recovered, many of them painted. There seems to be little visible difference between fabrics/types throughout the excavated sequence.

Table 2. Types of beads.

Type	Total	Stratified	Surface	Shape	Fabric	Colour	Figure
Disc beads	8	—	8	Flat disc with small central perforation	Stone and shell	Cream/ grey/ black	10(iv)
Grooved disc beads	2	1	1	Disc grooved on one side, either natural or artificial. Small central perforation	Stone and shell	Cream/ grey	10(vi)
Short tubular beads	8	2	6	Short tubes with large perforation	Stone; possibly one shell	Blue/ purple/ cream/ grey	10(vii)
Chunky tubular beads	1	—	1	As above but with a longer, chunkier body	Stone	Blue	10(iii)
Small disc beads	6	—	6	Thin fragile disc beads with a large perforation	Shell and stone	White/ cream/ yellow/ grey	
Other							
Pendant/bead	1	—	1	A flat pear-shaped bead with a narrow drill hole (front/back) at the narrow end	Stone	Green	10(ii)
Pendant/bead	1	1	—	A chunky diamond shape with a perforation (side/side) at one narrow end	Stone	Turquoise blue (veined)	10(i)
Disc-bead curved	1	1	—	Disc bead with a medium-sized perforation. Curved section	Shell	Light brown	
Total	28	5	23				

The excavated bone, much of which was burnt, was extremely fragile and totalled 3.610 kg. Many fragments were so small that collection levels are likely to be unrepresentative of the true total content. As a result, collection methods will be revised in future. The total quantity of shell collected weighed 15.150 kg.

A total of 669 pieces of flint debitage were recovered from the trench, along with four flint tools. The flint debitage appeared quite frequently in the upper levels (e.g. 200 fragments in context [003]) although it began to decrease in the cleaner sand layers beneath (i.e. the spits). The flint content increased significantly in context [016] (182 pieces). Context [016] is the pebbly layer just above the early surfaces.

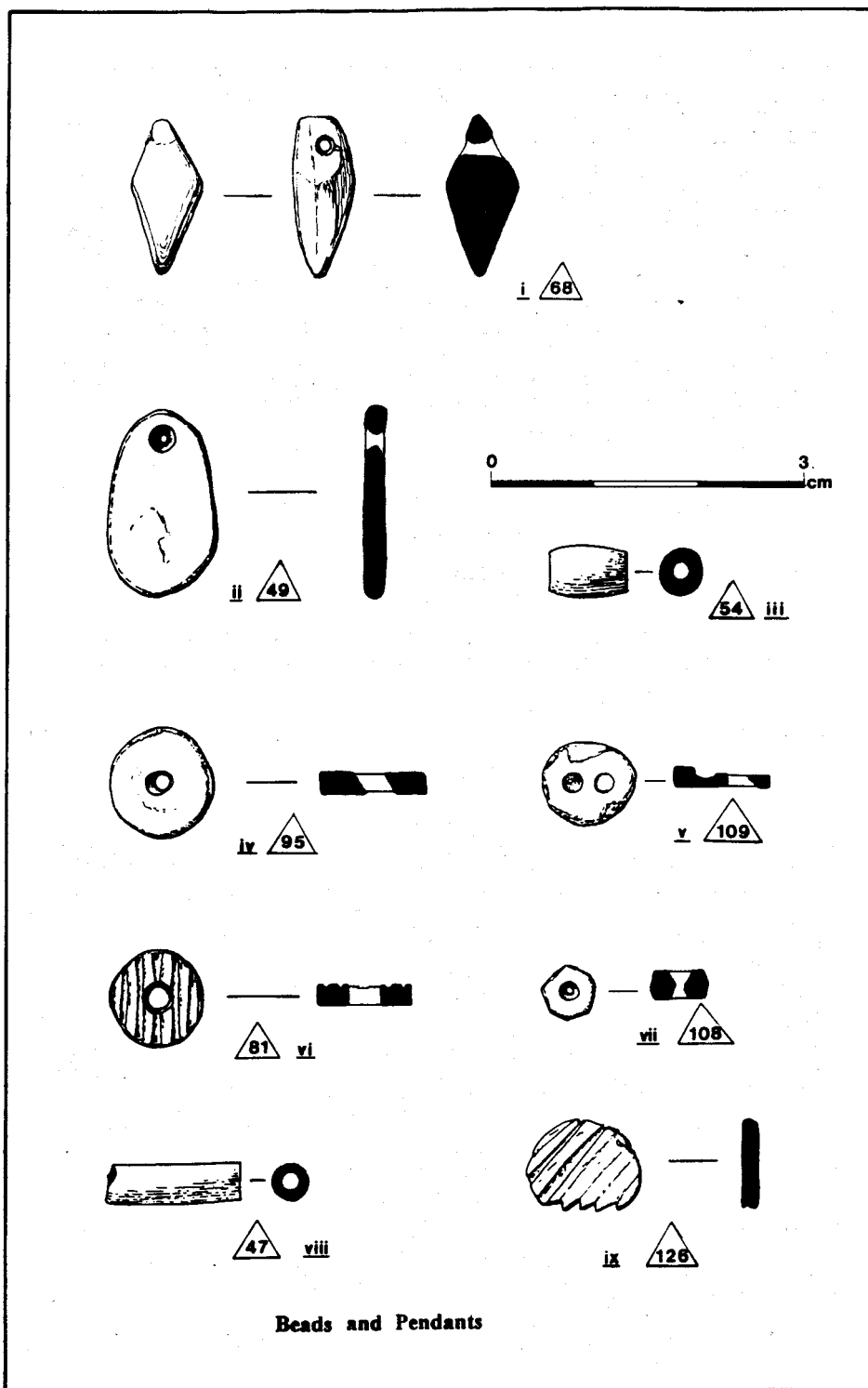


Fig. 10.

Table 3. Other finds.

Category	Figure	Total	Stratified	Surface	Description	Fabric
Net weight		6	2	4	A circular disc 2.0-3.5 cm in diameter with a thickness ranging between 0.5 and 1.2 cm with a central perforation	Pottery and/or stone
Possible net weights		2	—	2	1 As above with a diameter of 4.0 cm and a thickness of 1.0 cm. 5 small partially drilled holes surround the central perforation 2 Disc of stone with a natural perforation. This appears to have some wear. 2.3 cm diameter and 0.2 cm thickness	Pottery and/or stone
Pot roundel	9 (iii)	1	1	—	A disc of pottery, with roughly cut edges. Painted exterior: dark-brown paint in parallel bands with some wavy decoration	Pottery: fabric greenish; well levigated
Protobeads	10 (ix)	2	2	—	1 Flat disc with a central drill hole attempted on the obverse and reverse 2 Broken disc of shell with natural ridges on the obverse	White/cream stone Cream shell
Hammerstone		2	—	2	1 Pecked stone anvil. Hand-held with dual function 2 Broken fragment of round hammerstone	Black stone Black stone
Burnisher		1	1	—	Roughly shaped disc of stone. Diameter 2.6 cm, thickness 0.8 cm. Wear evidence on all surfaces	Stone white
Total		14	6	8		

There were seven beads of various types and five other small finds, including two pottery fish net weights, both from context [008]. There was also one diamond-shaped stone pendant/bead and one curved disc bead of shell and two unfinished beads.

Discussion

The assemblage of finds retrieved from the trial trench confirms that many of the finds recovered from surface sieving are of Ubaid date.

The date of the sequence of deposits recorded cannot yet be firmly established and more detailed specialist reports will follow. It is evident that a high level of finds recovery can be expected from stratified deposits.

Conclusions

Previous reports on 'Ubaid settlements in Eastern Arabia have indicated that they were sites of seasonal activity with the occupants engaged in hunting (more usual inland), fishing and mollusc gathering (along the coasts). Many sites have been damaged by natural erosion, although some have been found to be deeply stratified. (At al-Dawsariya there was ca. 3.5 m depth of occupation and a mound at Abū Khamis yielded nearly 4 m of deposit. Both of these sites lie near Jubayl in Qatar (Potts, 1990, 41, 43). Known 'Ubaid sites vary in size from small surface scatters of finds to concentrations covering several square kilometres.

It is clear from the investigations at the Dalmā site that it is of considerable size and depth. The east-west width is now estimated to be a minimum of 150 m, with a depth of deposit that probably exceeds 1 m. The site may extend further westwards, outside the compound area. The ground level outside the wall has been raised in recent years and archaeological deposits may be sealed beneath the modern infill. The north-south dimension of the site has yet to be clearly established and this will be set as one of the objectives for next season. At this stage, it appears to be about 250 m, including the area on the traffic island to the north (DA12).

The absence of a source of flint on the island means that the flint found on the site must have been brought in from elsewhere. The nearest sources are the island of Sir Banī Yās (32 km to the south-east) and Qatar (the east coast of which lies 27.5 km to the west). Large quantities of flint must have been transported to Dalmā for working into various tools. The reason finished tools were not brought over is unclear, if this was only a seasonal settlement.

The settlement would have lain on or near the beach, the shoreline lying approximately 20 m or so to the west of the western extremity of the site as presently understood. Further study will be undertaken next season to clarify the location of the ancient shoreline, both to the west and south of the site.

The presence of two distinct phases of gypsum surfaces with associated structural features separated by a period of redeposited sand and patches of ash and fish bones may indicate changes in the nature of the settlement. At some stages, there may have been 'arish'-type houses, probably built of reeds and plastered for stability. Plaster fragments with reed impressions have been found on other 'Ubaid sites (al-Dawsariya and Abū Khamis; Potts, 1990, 44), although none have yet been recovered from the Dalmā site.

It is possible that 'Ubaid settlement of the site was prolonged. The structures may indicate occupation for several months of the year if not permanently perhaps interspersed with periods of shorter, seasonal activity.

References

- Boucharlat, R., Haerinck, E., Phillips, C.S., Potts, D.T., 1991. Note on an 'Ubaid-pottery site in the Emirate of Umm al-Qawain. *Arab. arch. epig.*, 2:65-71.
- Boucharlat, R., Dalongeville, R., Hesse, A., Millet, M., 1991. Occupation humaine et environnement au 5e et au 4e millenaire sur la cote Sharjah-Umm al-Qawain (UAE). *Arab. arch. epig.*, 2:93-106.

Haerinck, E., 1991. Heading for the straits of Hormuz, an ^UUbaid site in the Emirate of Ajman (UAE). *Arab. arch. epig.*, 2:84-90.

Henrickson, E., Thuesen, I., 1989. Upon this foundation: The ^UUbaid reconsidered. *CNI Publications*, 10.

Millet, M., 1991. Comments on the lithic material from an ^UUbaid site in the Emirate of Ajman (UAE). *Arab. arch. epig.*, 2:91-92.

Potts, D.T., 1990. *The Arabian Gulf in Antiquity*, Volume 1. Oxford.