

**KILNS OF THE INTERMEDIATE EARLY BRONZE-  
MIDDLE BRONZE AGE AT TELL IKTANU  
PRELIMINARY REPORT, 1987 SEASON**

by  
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The excavations sponsored by the British Institute at Amman for Archaeology and History in November/December 1987 at the large double site of Tell Iktanu resumed the work initiated in 1966<sup>1</sup>. Tell Iktanu is located in the south Jordan Valley, ca. 10 km. north-east of the Dead Sea on the south bank of Wadi Ḥisban at the point where the latter is crossed by the Dead Sea Highway. The 1966 campaign confirmed the relationship of the houses visible on the surface of the southern hill (Katf el-Ḥuṣan) with two phases of Intermediate Early Bronze — Middle Bronze Age pottery, but was limited to the remains of that late third millennium cultural horizon. The project currently under way is a multilateral investigation of the occupation of the Shu'eib/Ḥisban area over a longer period of time, and is also linked to the publication of the regional survey of 1965/6. The current aims thus include the investigation of other periods of occupation at Tell Iktanu (principally of the Early Bronze 1 and the Iron Age/Persian Periods) and the retrieval of flotation samples of all periods. A preliminary report on work done on all periods of occupation at the site in the 1987 campaign will appear in *Levant* 1989; the flotation analysis and other analytical work is in progress and the reports will be included in the final publication. The purpose of this

report is a fuller but still preliminary description of the remains uncovered in Area C2.

Because the occupation debris on the EB-MB site is shallow except where pits were dug into the natural gravels, the 1987 aims included the investigation of more pits for flotation sampling. An area adjacent to that excavated in 1966 (Area A, Fig. 1) was opened, as the pattern of occupation suggested that pits were likely to be located in adjacent courtyards. In due course this proved to be the case<sup>2</sup>. However since 1966 a number of dugouts and trenches have been cut into the surface of the tell by the army and later abandoned. These were the subject of scrutiny and some of the newly exposed sections revealed useful archaeological insights. The sides of two dugouts at the east end of Katf el-Ḥusan (Area C2, Fig. 1) revealed relatively deep ashy deposits and pits. It was decided to sample these pits also, primarily for flotation purposes.

A small trench (3 x 2 metres, area C2,301), was laid out adjacent to a dugout. The cleaning of the section and retrieval of pottery had already indicated that the relevant deposit was almost certainly of EB-MB date overlying and cut into ca. 0.25 m. of EB 1 deposit. A few days later, despite the presence of a watchman, the site was wrecked during the night by

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1. The writer is grateful for the permission of the Department of Antiquities of Jordan, and the generous help of the former Director, Dr. Adnan Hadidi; the Departmental Representative was Dr. Khairieh Amr; surveyor: Hugh Barnes; site supervisors: Khairieh Amr, Richard Clark, Sarah Collins, Bob Erskine, Tony Lowe and Dianne Rowan; all of whom are thanked for their contributions. The kind assistance of the Director and Assistant Director of the British Institute at Amman is gratefully acknowledged. The project is financed by the British Academy, the British

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2. K. Prag, 'Preliminary Report on the Excavations at Tell Iktanu, Jordan, 1987', *Levant* 21 (1989), pp. 33-45.

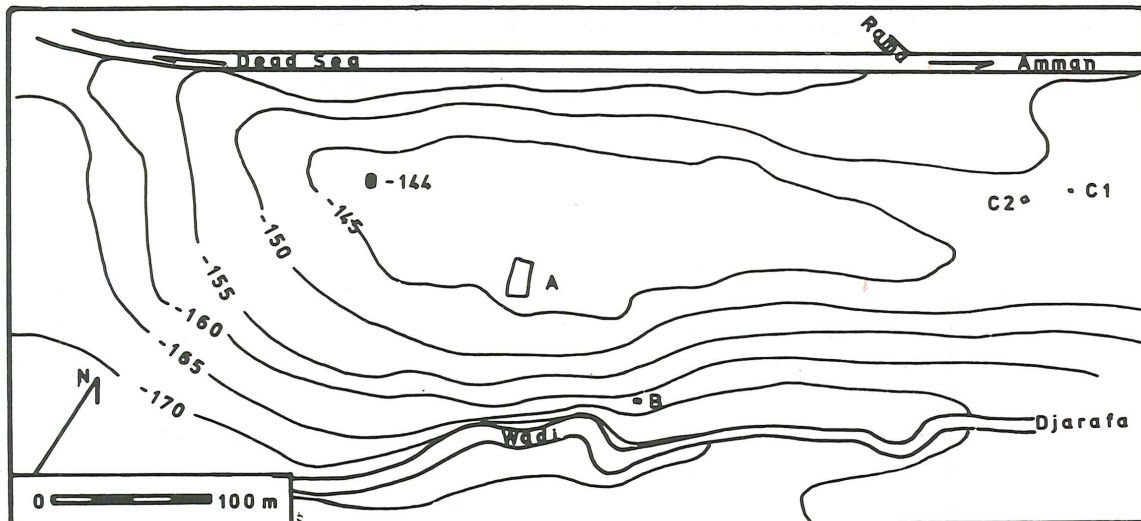


Fig. 1. Plan of the southern hill at Iktanu, with Areas A-C.

treasure hunters. The trench was emptied to natural gravel and the spoil dumped in the adjacent army dugout (Pl. VII,1). The quantity of pottery, including misfires, some previously excavated from the upper levels, and others subsequently found in the spoil heap, already hinted that we were working in an industrial zone. A second small trench (Fig. 2, Area C2,302, 3.40 x 2.00 m.) was laid out in relation to a pit exposed in the new west section, and work recommenced concomitantly with the sieving of the dump. This second small trench in due course revealed a surprising concentration of pits, kilns and an oven. The first and most complete to be discovered (No. I) lay immediately beneath and perhaps truncated by the army bulldozer level of the 1970s, but has since then been protected by the dugout parapet.

**Summary History of Occupation in Area C2.** (Figs. 2, 3 and Pls. VII,2; VIII,1)

**EB 1**

The area was occupied during the EB 1 period when a series of mudbrick walls and very small pits overlay the natural marly gravels. During the long break in occupation which followed the abandonment of the EB 1 site, the mudbrick decayed to a dense, rather formless yellow deposit ca. 25-40 cm. thick. Only a small sample of this deposit was excavated in 1987.

**EB-MB**

Ca. 2350 B.C. newcomers selected this area for industrial use. There is so far no evidence for any EB-MB structures other than pits and kilns in Area C2.

“Kiln IV” was cut into the EB 1 bricky deposit, and lay immediately beneath the sandy topsoil and a scatter of stones; the top may have been truncated by bulldozer action in recent years. This kiln was preserved to a depth of 0.55 m., and appears to have a round, pudding-basin shape with a diameter of a little over one metre. Less than a quarter has been excavated, and in that section no evidence for a flue/stokehole has been found. Part of the kiln was destroyed when Kiln I was constructed, and part still extends unexcavated into the east baulk. The kiln proved to be a pit without a clay lining in which fuel (animal dung/straw?) was stacked, shown by the black ash lining the lower interior. Otherwise the contents consisted of layers of burnt material: the top 10-20 cm. were of rather silty soil with lumps of white and clayey material and a little EB-MB pottery; below it the material was grey/yellow, with similar chunks of clayey material and charcoal, in which were two tiny chips of EB-MB pottery; the lowest but most substantial fill was a very white material, very light and brittle with grey, yellow and pinkish lenses — both this material (which contained no pottery) and

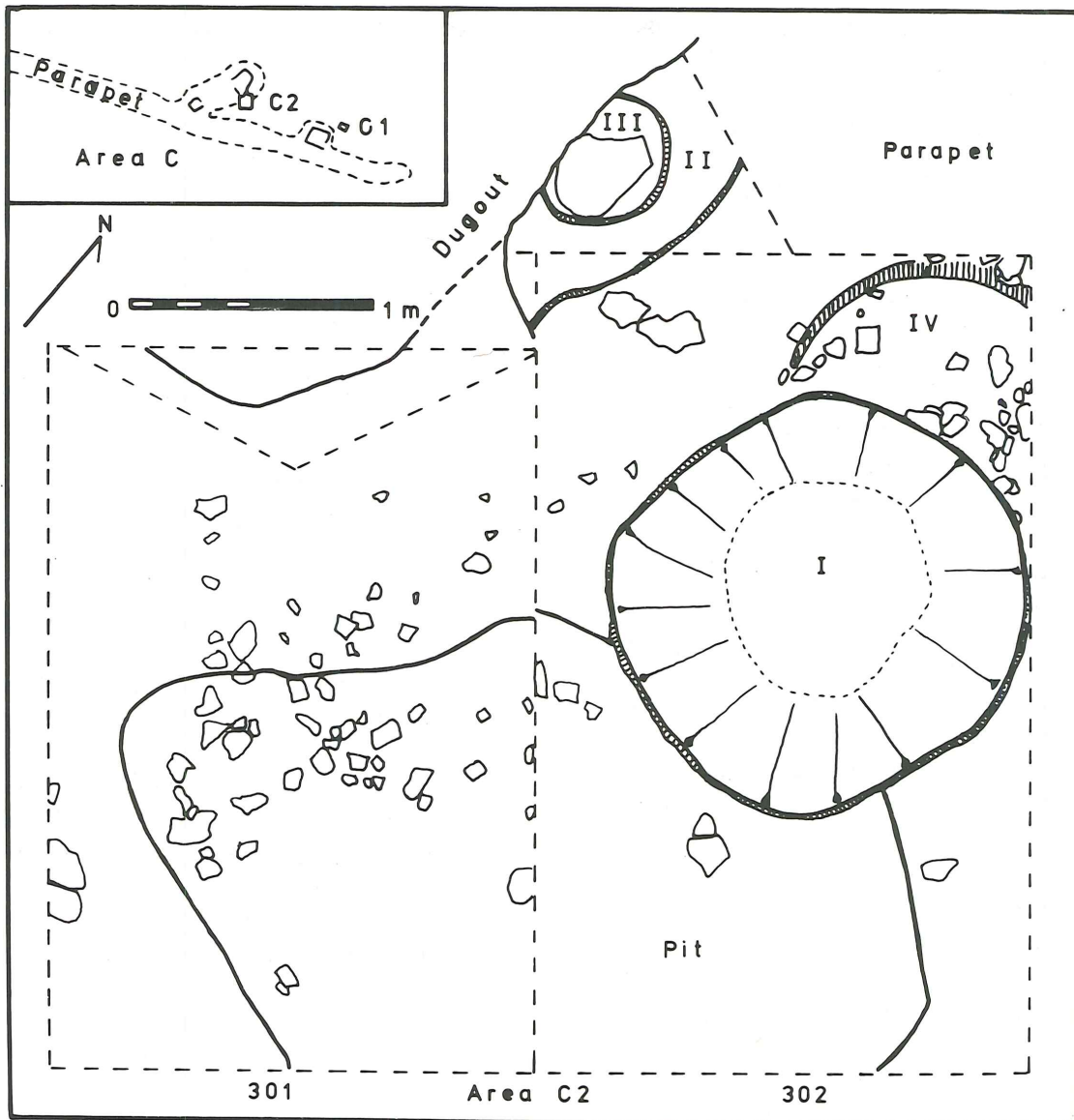


Fig. 2. Plan of Iktanu, Area C2.

the EB 1 bricky soil into which the pit was cut showed signs of intense burning. The latter had fired red-brown. When first encountered the red-fired material was assumed to be a burnt kiln-lining. That there was no separate clay lining was clearly demonstrated in a section cut through the wall. The red burning extended 15 cm. back from the side of the pit at 15 cm. above the floor of the kiln. It was less thick lower down but extended 30 cm. into the bricky deposit at 20 cm. above the kiln floor. At the preserved top of the kiln the burnt red zone extended only 5 cm. deep but defined the line of the pit during excavation (Pl. VII,2 centre rear, curved

round the left side and near end of 0.50 m. scale). Analysis of the contents and excavation of the remaining part of this kiln should further define its purpose.

"Ash-pit". Perhaps contemporary with Kiln IV or Kiln II, or both, was a large shallow pit to the southwest of Kiln I. Its stratigraphic relationship to Kiln IV was severed by the later cutting of Kiln I, and to Kiln II by the destruction of the first trench (301). The pit was at least 2.5 m. in diameter, a minimum 0.40 m. in depth, and had an overhang (just possibly a vent or stokehole to Kiln II or IV) at its north-east side (Pl. VII,2 right foreground). It was cut through the EB 1

deposit into the underlying natural gravels. It was full of fine dark ashy detritus possibly the by-product of animal-dung fuel. It contained a large quantity of pottery, which included fragments of mis-fired EB-MB vessels: high-fired, much-reduced, blackish or grey-green fragments including part of a restorable but totally distorted jar with envelope-ledge handle (Pl. VIII,1), fragments of which were retrieved from the upper levels of the fill of the pit, from the overhang or stokehole, and from the debris of Area C2,301. Also found in the ashy fill was a small fragment of a basalt mortar with traces of a red substance which had been pounded in it, and a well-used chert pounder. We surmised that if it was not a stoking/cleaning area for Kiln II/IV, then it was used for other working purposes related to pottery production and subsequently filled with almost contemporary debris. A large section of this pit was excavated but the west side was destroyed in the looting of the first trench.

*"Kiln I"*. Cut into the area between Kiln IV and the "ash-pit" was the best preserved feature, a clay-lined "pudding-basin" shaped pit called "Kiln I" (Figs. 2,3; Pl. VII,2). The shape appears to be very similar to Kiln IV but if the latter is round then Kiln I is larger. The flat base is 0.85 m. in diameter, the preserved top is 1.70 m. in diameter, the preserved depth is 0.78 m.; the south wall is rather dished, and the clay lining varies in thickness from 2 to 5 cm. The floor was cut 20 cm. deeper than that of Kiln IV.

The lower part of this structure being complete we can say that it had no stokehole/flue to provide the up-draft to be expected in a well-built pottery kiln. This left considerable uncertainty as to whether this clay-lined pit was indeed a kiln, and numerous alternative suggestions for its function have been proposed. However, the clay lining appears to have been fired, and the lowest fill of the pit included a tip of ashy material including fired clay fragments so burnt out and light that they floated in water. Such ash and other finds

could have been tipped in from adjacent kilns, but the burning of the wall and floor suggests the pit was not simply used for mixing or preparing clays, and would not have been suitable for soaking them. The shape is unsuitable for such purposes as grain storage and no burnt grain was recovered. The shape would probably be unsuitable for secure storage of any dry goods, and though a domed silo is a possibility it seems unlikely in an area where much burning undoubtedly took place.

A number of tests are in progress which it is hoped will shed more light on the function of "Kiln I" but for the moment we suggest that it was used as a pit kiln. With animal dung/straw fuel placed in the bottom, the pottery was stacked on top with more fuel placed around and above it. Possibly a temporary vented mud/clay dome was built above, presumably with some space and vents left for circulation of air. Only one very small fragment of burnt clay with evidence for a "vent" 4 cm. in diameter was found in the 7+ kg. of burnt clay fragments discovered in the vicinity. The slight dishing of the wall on the south side might have permitted a better circulation of air within such a kiln. Preliminary firing tests on a section of the "Kiln I" lining suggests that the temperature reached in the pit may have been between 730° and 884°C - see the report below.

*"Kiln II" and "Oven III"*. The upper levels in Area C2 had been bulldozed in the 1970s when an earth parapet was pushed up to the south; all stratigraphic links with a third complex north-west of "Kiln I" had been severed by this operation. From the higher level of its floor it might be assumed that "Kiln II", another clay-lined pit, is not earlier, and may be later, than "Kiln I", but this is not necessarily the case. "Kiln II" (like "Kiln IV") was cut into the EB 1 bricky deposit. It was poorly preserved, and most of it was destroyed by the adjacent dugout. The remnant, a segment ca. 1 m. long, is shallow and of apparently irregular shape. A slight angle in the wall might indicate the

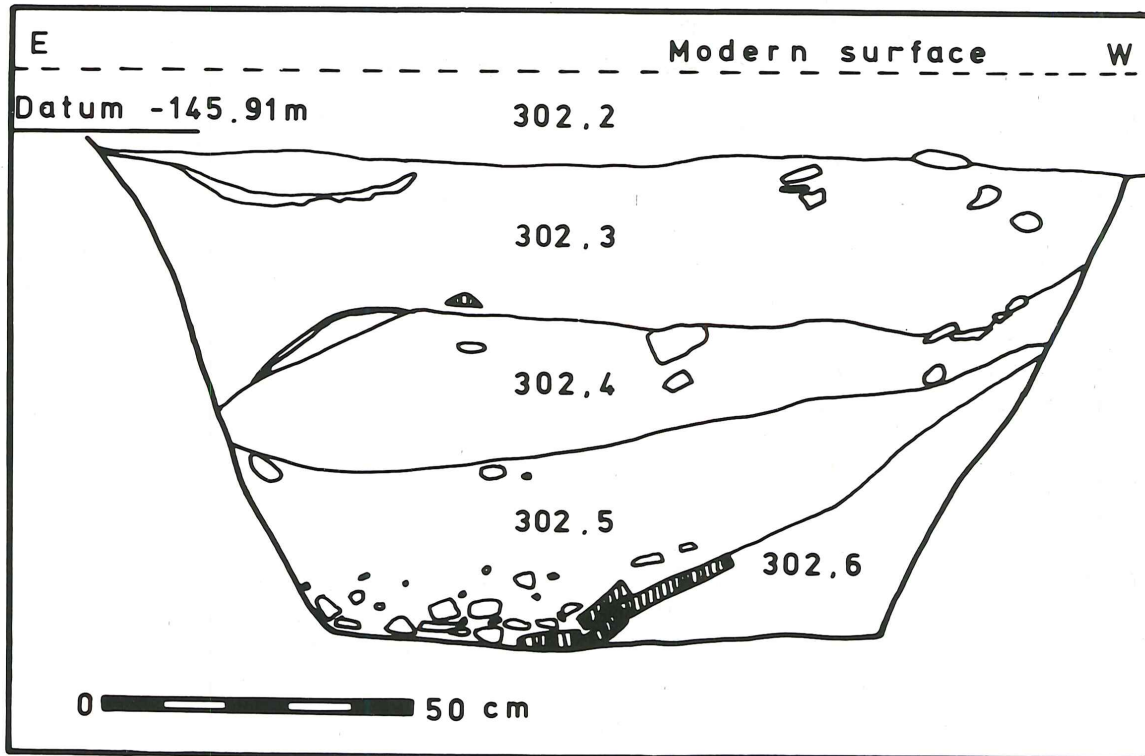


Fig. 3. Section through Kiln I, Area C2, Iktanu.

existence of a stokehole or vent at base level. Inside it, and resting on a few remnants of the burnt clay floor of "Kiln II", was a small cooking oven ("Oven III"), also clay-lined, with one large and several small stones tightly packed inside it. The diameter of this small oven was ca. 0.50 m., and the clay lining 1-1.3 cm. thick. Nearly half had been removed by the dugout. The insertion of an oven in the debris of a kiln seems a curious operation; and no such ovens have been discovered in the excavation of the EB-MB houses in Area A, nor possibly from such an early period at any site<sup>3</sup>. An alternative interpretation, that it was the base of a clay-plastered stone support column for the floor of a firing chamber in "Kiln II", like that of the EB 2 kiln at Tell Far'ah North<sup>4</sup>, seems to be precluded by the existence of the burnt clay floor of "Kiln II" on which the oven was set, and by the "free-standing" nature of the clay walls, which are curved and smoothed on the inside,

independently of the stones packed inside them (Pl. VII,2 extreme left). The clay walls at no point adhered to the stones, as apparently did the clay plaster in the Far'ah kiln column. The spaces between stones and plaster inside the "oven" were filled with fine soft ash. The dimensions of the "oven" are, however, very similar to those of the Far'ah column, for the base of the Far'ah central column was ca. 0.50 m. narrowing above to 0.35 m. The Far'ah kiln at 1.92 (ext.) - 1.30 (int.) m. diameter, and with a height from base to firing floor of ca. 1.09 m., was of similar proportions and shape to "Kiln I".

It is possible to reconstruct the fragmentary remains of "Kiln II" and "Oven III" on the lines of the Far'ah kiln, but with hesitation in view of the observations noted above. The space between the walls of "Kiln II" and "Oven III", particularly on the south side, contained ash, clay and much broken but *in situ* EB-MB pottery, the spread of which continued to the

3. A. McQuitty, 'An Ethnographic and Archaeological Study of Clay Ovens in Jordan', *ADAJ* 28 (1984), p. 259, 265.

4. R. de Vaux, 'Les fouilles de Tell-el-Far'ah, près Naplouse', *RB* (1955), p. 558-563, Fig. 10.

southwest into the extreme north end of area C2,301 and which was destroyed in the looting. Some of the sherds retrieved from the looted area and from the original section-cleaning in the dugout could be joined to the material found in the kiln, and a range of partly restorable jars, presumably from the bottom stack in the last firing of this kiln, have been recovered (Fig. 7: 3-8). They testify to an accident in the firing process, for it is clear that after being fully fired in an oxidising atmosphere, the stacked pottery collapsed and broke. Some pots were buried in ash and briefly re-fired in a reducing atmosphere; the surfaces of these jars, including the surfaces of the breaks, have turned grey, black or greenish though the cores are still red. The jars in Fig. 7: 3-5 have bright orange-red clay and red slip; those shown in Fig. 7: 6-8 are dark coloured, but the surfaces show traces of brush marks indicating that they were probably originally also given a red slip. Fig. 7:6 may have been decorated in "reserve slip" technique.

Too little of this kiln has been preserved to draw detailed comparisons with the EB 2 kiln from Tell Far'ah North in Palestine, though the pudding-basin shape of Kilns I and IV is very similar to that at Tell Far'ah. The kiln discovered in 1982 at Tell el-Hayyat just south of Pella in the Jordan Valley<sup>5</sup> had its lower section cut into virgin soil and appears to be round, but it had a heavy mudbrick superstructure. There is no mention of a stokehole or a separate firing chamber. Sherds of EB-MB and MB 1 (= MB 2A) type were found in and around the chamber; the excavators suggested that it was constructed in the EB-MB period and continued in use in the later period. As the working life of a kiln tends to be short, and earlier levels or surface sherds are disturbed when pits are excavated, it is possible that the Hayyat kiln as preserved belongs to the later MBA (1=2A) period.

## The Finds

The finds in the two trenches, especially in the upper levels of Area C2,301, included nearly seven kilos of flat or irregular fragments of burnt clay. Every fragment was carefully checked but only one showed any trace of a vent hole. This was a tiny fragment with a hole of small diameter (4 cm.). No fragments were clearly identifiable as coming from kiln floors, grids or fire bars. Whether these clay fragments are all from the destroyed upper sections of kilns and ovens is thus uncertain.

More than sixty fragments of coarse clay plates were recovered (Fig. 4 and Pl. VII,2-3). Most of these seem to include straw and large fragments of marl clay as temper, and range from 30 to 60 cm. in diameter, and from 2.2 to 4.0 cm. in thickness. They are heavy, easily broken, mostly fragile and crumbling. The most complete fragments were found on top of the lower ash level in "Kiln I" (IK.302.6, see Fig. 3). Some are slightly convex, and they often have a flat sloping edge, slightly wider at the top or convex face. Their use is suggested by the presence of splashed red slip especially at the edges, and of red-slip rings on most discs, occasionally on both upper and lower faces (Pl. VIII,3).

The rings are of varying diameter, sometimes several arranged concentrically, though often overlapping slightly. It seems likely that the pots were constructed and/or decorated and dried standing on these plates. The red slip on EB-MB pottery was often applied with a brush, and the evidence would accord quite well with the pots standing on the plates while the slip was applied. The diameters of the red slip rings on the plates match quite well the red slip rims on small and particularly the medium bowls. The slip at the rims of bowls is usually very worn, but on some less-used examples one can note that the

5. S.E. Falconer and B. Magness-Gardener, 'Excavations of the Tell el-Hayyat Project', *ADAJ*

27 (1983), p. 92-94, Pls. VI.2, VII.1.

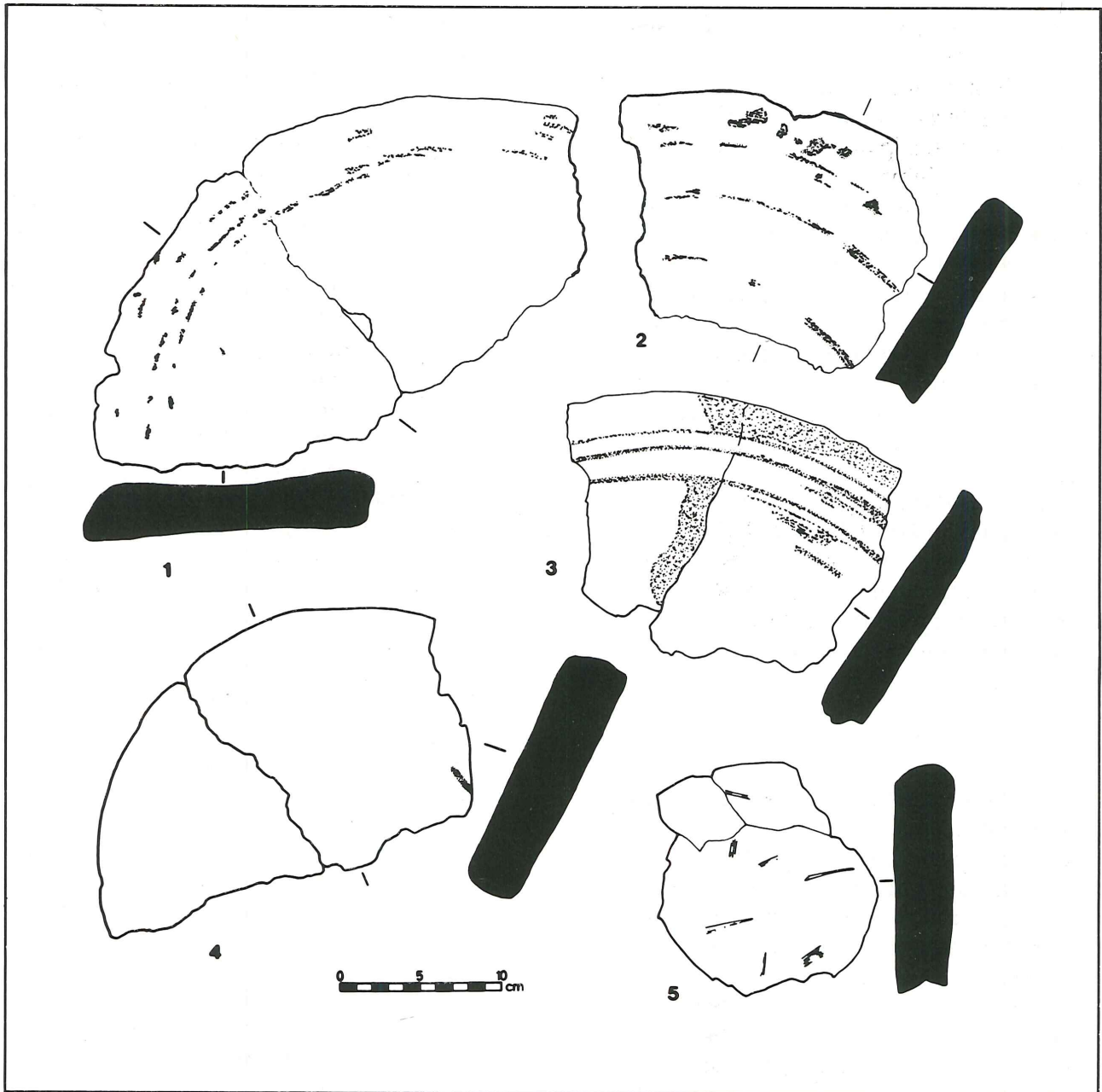


Fig. 4. Potter's clay discs from Area C2, Iktanu.

slip at the rim has cracked off when lifted after drying. This suggests that the bowls were dried standing rim downwards. Plates lacking red slip rings were probably only used for undecorated pots. We at first thought that the pots might have been stacked on these plates in the kilns for firing, but this is uncertain. They seem to have been readily expendable, easily broken appendages to the manufacturing and drying processes. They may also be rather clumsy and fragile turntables: their convex shape might be a functional part of

this process but there is no evidence that they were attached to any central pivot. Dr. H.J. Franken notes that they may have been ideal as a surface on which to place the large flat bases of EB-MB jars while they were being joined to the walls. Certainly some of the jar bases are not completely flat, and perhaps retain the convex shape of the disc on which the jar was placed.

Slightly smaller tabulate clay discs (ca. 20 cm. in diameter) with different temper and described as "hotplates" were disco-

vered in EB-MB levels at Bab edh-Dhra' in 1975 and 1977<sup>6</sup>.

Much more work has still to be done on these materials, including firing tests, analyses of clays, slip and other substances, before any definitive statements can be made. An extensive analytical programme has been begun by Dr. G.W.A. Newton (University of Manchester).

Also recovered in the sieved material (not stratified) were two sherds of hard-fired wares, with the typically gritty-tempered composition of jars, which had probably been used as "potter's tools" or "ribs". They each have well-worn edges or corners, possibly the result of regular use in shaving and trimming the lower walls, or grooving or tapering the necks and shoulders of vessels. A third fragment may belong in this category or may just be an unusually sharply-cut edge to a jar base; and a fourth sherd shows some wear along a broken edge.

### The Pottery from Area C2

Only a preliminary assessment of the considerable quantity of pottery found in the area can be given here. Nine or ten small fragments of pottery of later periods were recovered in Area C2, but there were no primary deposits. Three tiny fragments of Roman/Byzantine ribbed ware, a small piece of an ?Iron Age ring base and a tiny piece of "late" wheel-made fabric were recovered while sieving the looted debris. Four similar sherds were recovered in the excavated topsoil (bulldozer) levels. Two, possibly three, sherds of Iron Age and Roman date were found in the stratified upper fill of "Kiln I" (IK,302.3-5, see Fig. 3). The sherds should date the last use of the area, and consideration was given to the possibility that the kilns and oven were

a pottery and/or bakery associated with the later fort on the main tell just to the north. However the late sherds were small and sparse, and undue weight should not be given to them; the lowest ash fill in "Kiln I" (IK.302.6, see Fig. 3) contained only EB-MB material, and we assume that the six or seven stratified late sherds may well be contemporary with the bulldozer work in the 1970s and animal activity since. Few late sherds appear in the adjacent parapet or surface material.

Almost all levels in area C2 produced a large quantity of EB 1 pottery. This is not surprising when it is remembered that the excavation of every EB-MB pit or kiln disturbed pottery-rich EB 1 levels. This material will be published elsewhere. The stratified pottery of Area C2 was predominantly EB-MB. In the stratified EB-MB levels of trench 302 (not including the material from the looted trench 301 and dugout, or the EB 1 levels) there were 337 EB 1 sherds, and 2,392 EB-MB sherds.

### *Preliminary Analysis of the EB-MB Pottery in Area C2*

Comparative assessment of the pottery, based on the sequence recovered at Iktanu in 1966<sup>7</sup>, permits a rapid preliminary evaluation of the pottery found in Area C2. It is clear that the EB-MB pottery conforms with EB-MB Phase 1 (the earlier phase) on the site. The pottery is very mixed in source; there are no complete vessels and some vessels had undoubtedly been in domestic use and were not just by-products of the manufacturing process. All rims and most bases and handles were kept, which allows a rough assessment of the state of preservation (e.g. no complete rims were recovered). Where there did seem to be much of one vessel all similar

6. W.E. Rast and R.T. Schaub, 'A Preliminary Report on Excavations at Bab edh-Dhra'', *AASOR* 43 (1978), p. 19, figs. 16-17; 'The Southeastern Dead Sea Plain Expedition: An Interim Report of the 1977 Season', *AASOR* 46 (1981), p. 33.

7. K. Prag, *A Study of the Intermediate Early Bronze-Middle Bronze Age in Transjordan*,

*Syria and Lebanon*. Unpublished D. Phil. thesis, University of Oxford, 1971, Figs. 15-19; 'The Intermediate Early Bronze-Middle Bronze Age: An Interpretation of the Evidence from Transjordan, Syria and Lebanon', *Levant* 6 (1974), p. 81-92; 'The Intermediate Early Bronze-Middle Bronze Age Sequences at Jericho and Tell Iktanu Reviewed', *BASOR* 264 (1986), p. 67-70.



body sherds were also kept but this rarely led even to restorable complete sections. However all "misfires" were kept, along with anything which did not conform to previously known types. The remainder of the sherds were discarded on site after the counting and recording of different wares etc.

It should be noted that reduced and overfired sherds have been recovered not infrequently from domestic contexts in Area A, and clearly any usable pots regardless of reduction or discolouration were still utilized. In fact some were usefully hardened in this process. Only completely distorted and broken pottery was rejected. Much of the pottery found on the site has been fired in a reducing atmosphere, though the red burnished vessels and those with red-cream slips suggest that the potter was aiming at an oxidised product. Franken notes that a very considerable variation in temperature is possible inside EB-MB kilns and even within one vessel (personal communication). All the pottery is handmade<sup>8/</sup>. The evidence from the pots themselves suggests to Newton (personal communication) that the walls of the jars were often made with the help of moulds, coils being added to narrow the shoulder and to form the jar necks and rims.

Following the shape/function classification developed for the 1966 material, the following points have been noted, though it should again be stressed that these are preliminary remarks and represent a preliminary sorting only. Where rim and body sherds joined or were fairly certainly from the same vessel, they were counted as one example. The quantity of material dealt with below does not provide a statistically reliable sample, although it does include all the material from the robbed trench dump (ca. 4,000 sherds in total). Some differences from the range of material recovered in Area A were noted. It is not clear whether this is due to an inadequate statistical base, to a difference

in the use of the Areas A and C, to the length of the period of use, or to any combination of these factors.

**Class 1. Lamps.** There were no fragments (none were recovered in Phase 1 deposits in Area A in 1966, although four-spouted lamps occurred not uncommonly in Phase 2 deposits).

**Class 2. Miniature bowls** with round bases: only one example of a small funnel or strainer bowl (uncertain red slip) was found (Fig. 5:1). These were uncommon in any area in 1966.

**Class 3. Cups and Small bowls**, all with a flat base and rim diameters between ca. 10 and 19 cm.; **a) Red slip with irregular burnish on the outside** (21 examples) (Fig. 5:2-5): one example has interior burnish also; all have a simple incurved and tapered rim; about half are plain, the remainder have two grooves or corrugations below the exterior rim. Fig. 5:4 probably had red burnished slip but the surface is worn. **b) 'Reserved slip'** (9 examples) (Fig. 5:6): distinctive vessels, with a tapered incurved rim, demarcated by a shallow grooved line. Red slip is painted on the rim and on most of the exterior wall, and sometimes burnished; the base, interior and top of the exterior wall above the groove have no red slip and are usually cream to pink in vessels which have been fired in an oxidising temperature. In some instances there is certainly an applied cream slip (not scum) below the exterior rim, and occasionally the interior. The colours vary depending on the firing through red to drab and black. Two fragments with mending holes were found, perhaps indicating that these cups were particularly valued. **c) A miscellaneous category**, not a separate class, lies between small and medium bowls, being ca. 18 cm. in rim diameter, but with varying forms of thickened, inverted or everted rims (7 examples) (Fig. 5:7-10), with red slip and often burnished. Fig. 5:7 has small knobs applied at the shoulder; Fig. 5:10 has an

8. Cf. F.D. Homès-Fredericq and H.J. Franken, *Pottery and Potters*, Tübingen, 1986, p. 106.

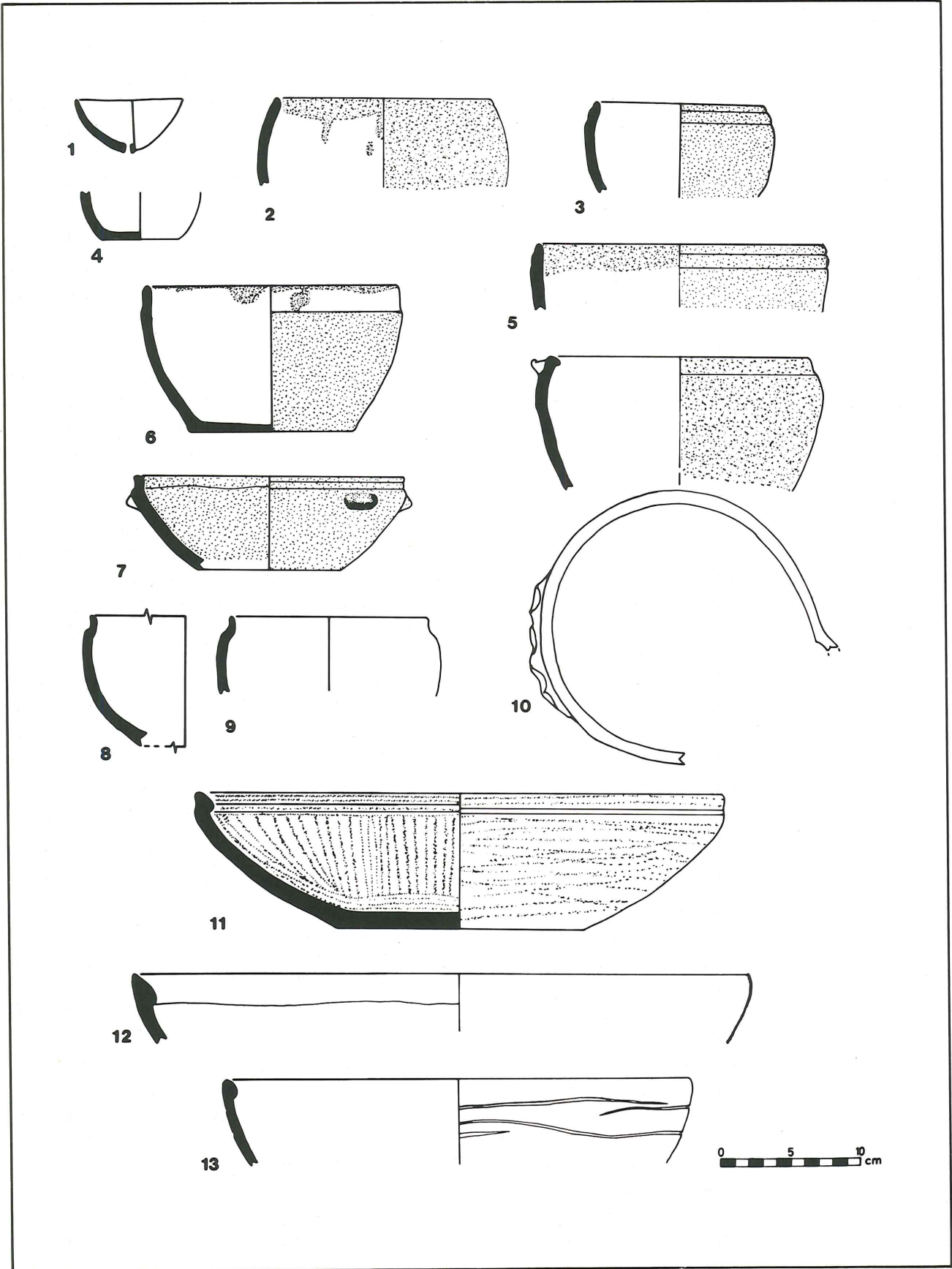


Fig. 5. Pottery from Area C2, Iktanu: Phase 1, EB-MB: Miniature bowl, cups, small and medium bowls.

envelope ledge handle at the rim, with part of a pouring spout opposite.

Class 4. *Medium bowls*, with rim diameters varying between ca. 25 and 48 cm., which also have flat bases, formed one of the major categories. **a) Bowls with inverted rim and exterior groove** (Fig. 5:11): the inverted rim is usually fairly regular in size, but the exterior groove can be narrow and deep, done with a "rib" or other tool, or broad and shallow. There are 23 or 24 examples of this category; they are all red or pink slipped and mostly burnished. Usually the interior burnish is radial, the exterior burnish is horizontal; it is not always possible to be certain of the rim diameter with relatively small sherds. **b) Inverted rim with no exterior groove** (24 examples) (Fig. 5:12). The distinction appears to be a minor one, but other features correlate with a division into separate categories. This group appears to contain many of the unslipped, unburnished, perhaps "kitchen" or poorer quality medium bowls which are pink or drab coloured. The category includes many very broad rims, as well as some very narrow ones; bowls with medium rims tend to be more like the previous category, and more often have burnish, though rarely radial burnish. More of these bowls seem to be irregular or distorted. **c) Miscellaneous categories** (Figs. 5:13; 6:1-2) include bowls with inverted and everted rim, plus groove(s) or line(s) below the exterior rim (3 examples); bowls with inturned rim which is not folded down (Fig. 6:1), plus an exterior groove, mostly red slipped and with a tendency to thinner walls (6 examples); and bowls with inverted and everted rim (4 examples, including one with reserved slip) (Fig. 6:2).

Class 5. *Large bowls*. Only two certainly in this category were noted, and probably do not have red slip. They are not so uncommon in Area A. One (rim diameter 54 cm.) has an envelope ledge handle at the rim, and a parallel impressed band or ledge handle below it (Fig. 6:3); the other (even larger at ca. 61 cm. rim diameter) is poorly preserved on the exterior, but appears to

have a very rough succession of outward smoothings of clay from the rim. Possibly it was intended to be set into the ground as a store or work tub.

Class 6. *Holemouth jars*. There seem to be two main groups: one is finished with the rim turned in, is often red slipped and includes a few which are very like cooking pots except for the ware; the second category is finished with the rim turned out. They appear to have flat bases. **a) Rim turned inwards**: 9 examples, of which perhaps four or five are reserved slip vases, at least two are burnished; seven have one or two grooves below the exterior rim; one has a spout (Fig. 6:4), and one a vestigial knob or plain ledge handle below the rim (Fig. 6:5). **b) Rim turned outwards**: 8 examples, three or four have burnished surfaces, six with up to four grooves below the exterior rim; two probably had spouts (= "teapots"), one an envelope ledge handle (Fig. 6:6); one fragment had a mending hole. **c) Miscellaneous holemouth jars** included four other rim sherds.

Class 7. *Cooking pots* (ca. 15 rim sherds). There are some minor variants, but generally the plain holemouth cooking pots of Phase 1 are dominant (Fig. 6:7-8), with a number decorated with impressed or slashed bands at the rim; there are none of the specifically Phase 2 decorated type discovered in Area A in 1966. The calcite tempered ware is characteristic of Palestinian cooking pots: usually they are brown or drab coloured, or blackened by use, and certainly had round bases. The shape is derived from the Early Bronze Age cooking pot, but as variants recognizable in ware and detail. Results of neutron activation analysis currently in progress indicate that different clays were employed in Phases 1 and 2.

Class 8. *Jars and jugs* at Iktanu are typically squat, or globular with wide, flat bases and envelope ledge handles. Jugs (Fig. 7:1) often have straight necks and always loop handles with a flat section. Nearly all jars were of medium size and nearly all have simple rims (Fig. 7:2-3). A few examples have short, curved necks, a few have

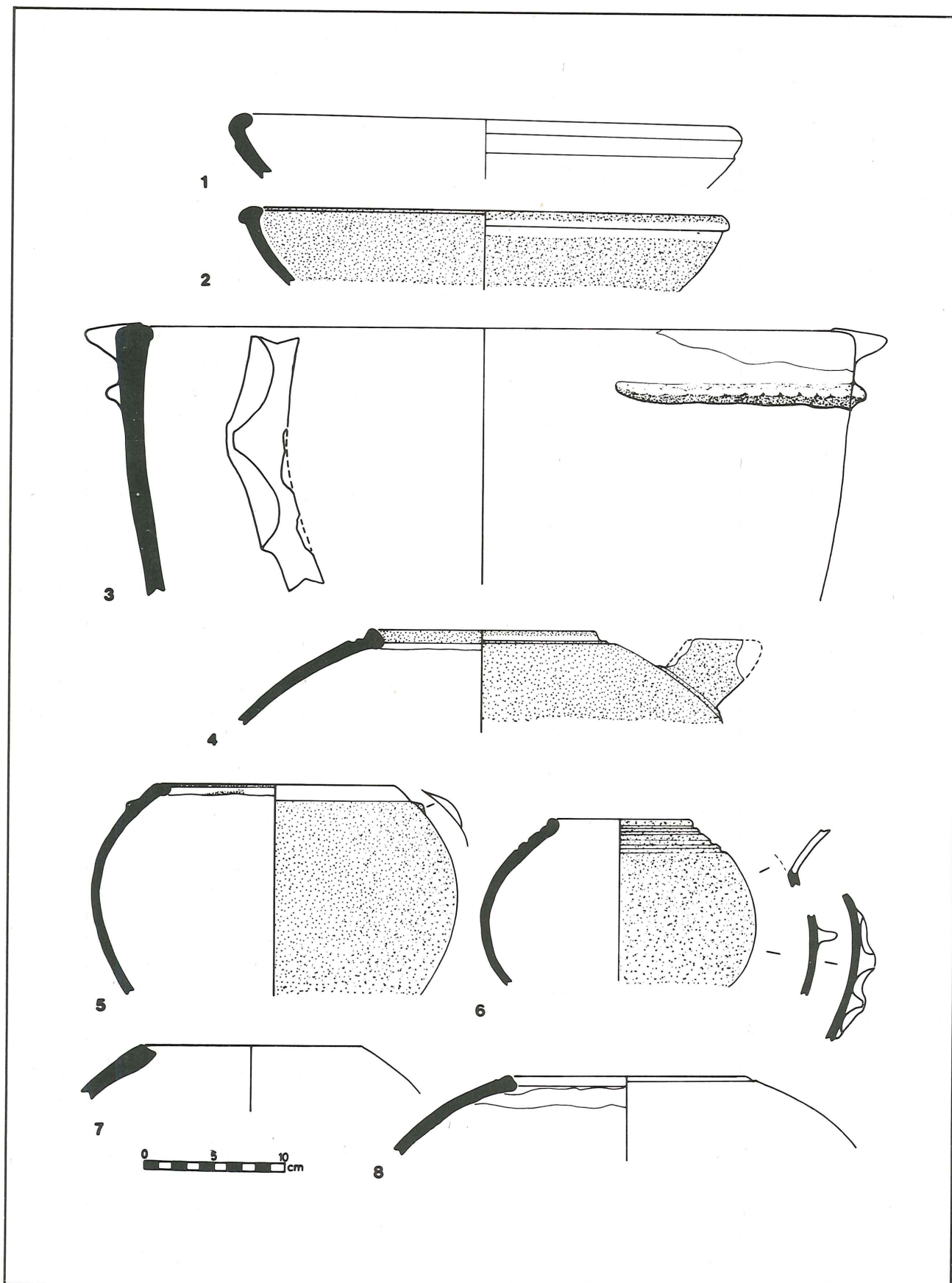


Fig. 6. Pottery from Area C2, Iktanu: Phase 1, EB-MB: medium and large bowls, holemouth jars and cooking pots.

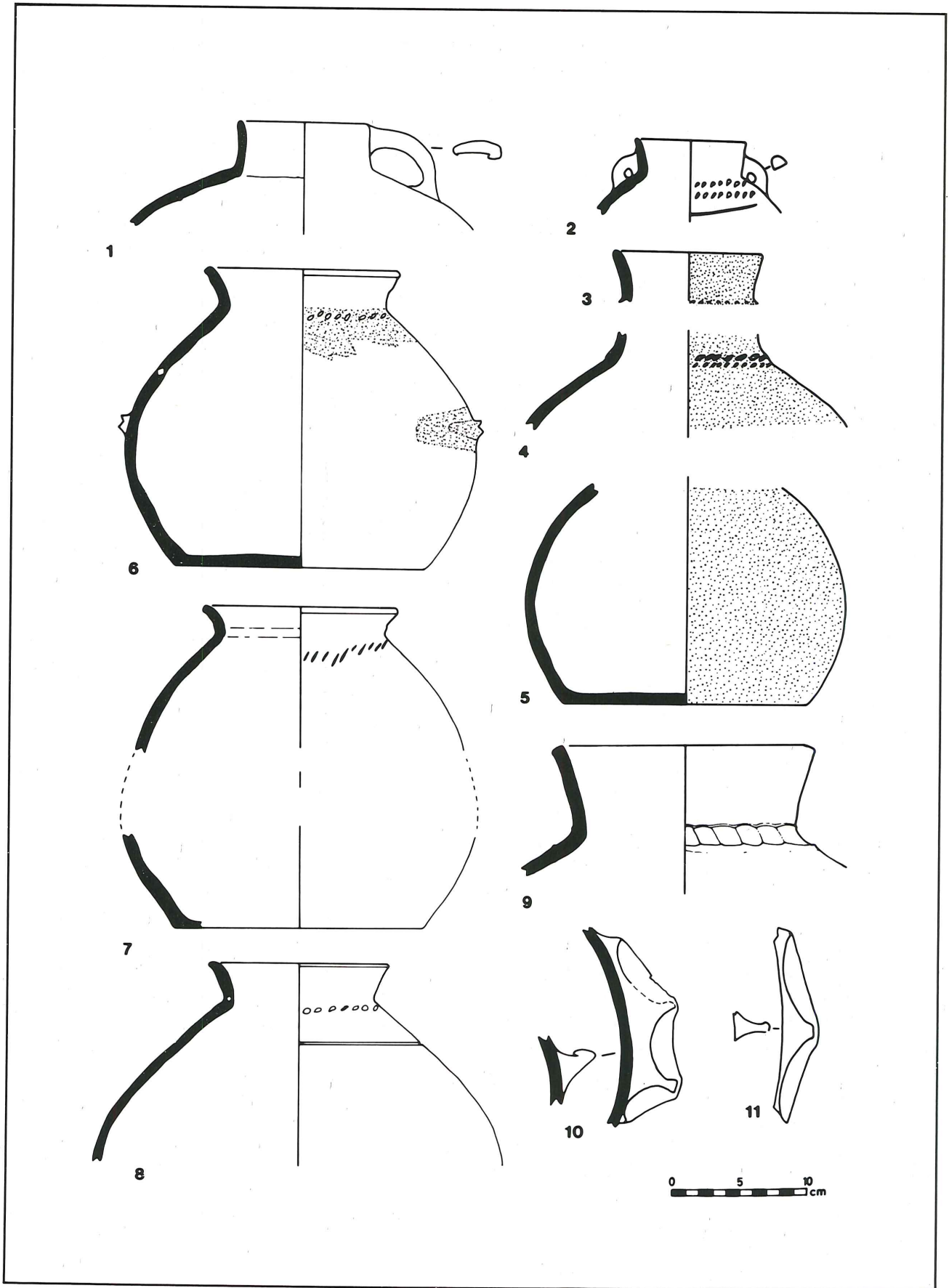


Fig. 7. Pottery from Area C2, Iktanu: Phase I, EB-MB: jugs and jars.

straight necks; the majority have necks more than 3.5 cm. high, with everted rims. A few are splayed, and two larger jars had square ended rims and impressed bands at the junction with the shoulder (Fig. 7:9). Of the 30 rims recorded, only three had red slip, and (unusually) one had a burnished slip. Of the plain examples however, a number of rims may be from reserved slip jars. Notably the highest proportion of misfired vessels comes in this category, with at least one large and one medium jar in a completely collapsed state (see Pl. VIII,1), and the spoilt batch of medium-sized jars from "Kiln II" (Fig. 7:3-8), which may provide useful sidelights on the potters' activities after fuller study.

*Miscellaneous Features, Handles: envelope ledge handles* (Fig. 7:10-11): most of the 35 envelope ledge handles kept come from jars, but they are also found on small bowls, large bowls, and holemouth jars. Only seven are sufficiently complete to be classified, and of these six have three flaps, and one has an extra very small flap, which makes it a dubious four-flap example. The flaps are mostly small to medium in size, apart from some on very large vessels; generally size of handle/flap correlates with size of vessel. They are added to the wall or the vessel, not pinched out, and in one of two cases have broken at the join, or the join was not been neatly smoothed. **Plain ledge handles:** one very small example on a holemouth jar. **Impressed ledge handles:** one large example which parallels an envelope ledge handle on a large bowl (Fig. 6:3). **Lug handles:** four examples with perforated holes, from small to medium jars. **Loop handles:** all eight examples have a flat section, probably all come from jugs; half appear to be from red slipped or reserved slip vessels. **Spouts:** fragments of 8 spouts were found, all cylindrical except for one or two open rim spouts. One very large example, from a holemouth jar with a thick, shiny, chocolate-coloured slip, had a ridge at the base (Fig. 6:4). **Body-combing:**

six fragments which might all come from the same pot. **Band-combing:** none; there were only a few fragments in Phase 1 contexts in Area A. This form of decoration seems to belong more commonly to Phase 2. The grooving and corrugations on the cups, small and medium bowls, holemouth jars, and the incisions and incised lines on the shoulders of the jars, may be intended to conceal the join between the mostly mould-formed body and the final small coils added to the walls at shoulder or rim. The pressure would also serve to consolidate the bond, apart from being decorative. Most of these features seem to disappear in Phase 2, when undecorated or band-combed vessels are more common.

The range of shapes is quite well defined and limited. They relate closely to the pottery found in the earliest levels on the site in 1966. The features noted as typical of Phase 1 occur regularly, and many noted as typical of Phase 2 do not occur at all.

The Area C2 kilns/oven/pit dug in 1987 were certainly in use during Phase 1 only, and perhaps during the earliest part of the period. The relative chronology suggests a date in the 24th century B.C. but it is hoped to obtain C14 dating for some of the samples. The discoveries are of importance for the study of the history of technology in Jordan, but are also significant in terms of social organization within the EB-MB village. The kilns indicate an 'industrial quarter' in the village, and are evidence for a technical specialization shown in the production of ceramics and metal work, but for which such evidence has so far been lacking. It is planned to continue excavation in this area in 1989.

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REPORT ON TESTS ON THE CLAY  
LINING OF "KILN I", TELL IKTANU

(Jim Mason)

**Outline**

An attempt to ascertain the temperature to which the clay lining had been fired.

**Objective**

Because clay samples change colour at different temperatures it was assumed that if the samples were subjected to the same temperature as in an ancient firing there would be no colour change; if subjected to a higher temperature a change to a lighter colour would result.

**Equipment**

Small electric test kiln. Pyrometric cones.

**Method**

A control sample of the lining was not subjected to any heat test. Three pieces were taken from the original sample and subjected to three different temperatures. These were 630°, 730° and 884° C respectively. The rise in temperature was re-

latively fast in all cases with the lowest temperature firing in 45 minutes. For the other two tests a slower cycle of approximately three hours was adopted.

**Results**

At 630°C and 730°C no visible colour change was recorded. Shrinkage was minimal in both tests. At 884°C a colour change was recorded and the sample became lighter in both weight and colour. No initial weight measurements were taken unfortunately. This sample was also very friable.

All the samples subjected to firing tests decomposed after one week, suggesting rehydration.

Speculated firing temperature of the clay lining of "Kiln I" could fall between 730° and 884°C and indicates that the sample was high in lime and low in other refractories.

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